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An integrative taxonomic approach to assess the status of Corsican bumblebees: implications for conservation

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Abstract

Many islands are biodiversity hotspots that host numerous endemic species. Unfortunately, insular faunas suffer from high rates of extinction and endangerment, and numerous conservation plans have been developed for their protection. These conservation plans are often assessed on the basis of occurrence and proportion of endemic taxa. However, delimitations of species and subspecies are still confusing and controversial. From a practical point of view, these disagreements make it difficult for government agencies and non-governmental organizations to initiate conservation measures. The present study develops a pragmatic integrative taxonomic approach on the basis of molecular and eco-chemical criteria. This method is applied to the insular bumblebee fauna of Corsica. For each taxon, the differentiation of Corsican taxa from the nearest related allopatric parents is characterized using genetic markers and the chemical composition of cephalic labial gland secretions. Phylogenetic analyses, Bayesian implementation of the general mixed Yule-coalescent approach, and comparative chemical studies show that two Corsican taxa can be considered as endemic species while five others can be considered as subspecies. Regardless of the taxonomic assessment the method facilitates diagnosis of evolutionarily significant units and rank taxa according to their distinctiveness. International Union for Conservation of Nature red lists are reconsidered according to the new taxonomic hypothesis for Corsican bumblebees. Modifications in species assessments are proposed. The present approach provides useful data sets for policy-makers and conservation organizations.

Introduction

More than any other geographical feature, many islands are well-known biodiversity hotspots that host numerous endemic taxa (Kier *et al*., 2009). Unfortunately, insular taxa are among the most threatened organisms (Collar, 1994). Therefore, well-planned conservation actions are needed to safeguard threatened insular taxa.

In conservation biology, faunal inventories are the basic data used to compile IUCN (International Union for Conservation of Nature) red lists (www.iucnredlist.org) and identify biodiversity hotspots and areas of endemism (Whittaker & Fernández-Palacios, 2007). Conservation plans are often assessed on the basis of occurrence and proportion of endemic species (Whittaker & Fernández-Palacios, 2007) and subspecies (Phillimore & Owens, 2006). This places a premium on consistently delimiting appropriate taxonomic status among insular faunas. However, the criteria for delimiting species and subspecies are still confusing and controversial (e.g. De Queiroz, 2007). The large number of species delimitation approaches based on reproductive isolation, on recognition, on phylogenetic relationships or on ecological criteria (Mayden, 1997) exemplify these disagreements. From a practical point of view, the disagreements on criteria for defining the taxonomic status of organisms make it difficult for government agencies and non-governmental organizations to evaluate the validity of taxonomic status in the listing process for conservation (Haig *et al*., 2006).

The recent development of integrative taxonomy based on the unified species concept (USC) provides an improved method for the taxonomic characterizations (De Queiroz, 2007; Schlick-Steiner *et al*., 2010). The USC argues that all species concepts acknowledge species as separately evolving fragments of metapopulation lineages but diverge in their criterion for delimiting species. The USC proposes that the numerous delimiting species criteria are maintained as operational criteria that can identify the split from one into two species at some step of the speciation process. Therefore, metapopulation lineage separation could be inferred from different lines of evidence for reproductive isolation, phylogenetic divergence or ecological differentiation. Integrative taxonomy considers these multiple independent kinds of evidence as separate criteria when assigning species status (Fisher & Smith, 2008), although species diagnosis is more likely when indicated by multiple lines of evidence. Moreover, by considering subspecies as a step in the process of allopatric speciation (Mayr, 1942), assigning subspecies rank to lineages in ambiguous allopatric cases (i.e. disagreement in selected criteria) has been proposed as a solution (see argumentation in Hawlitschek, Nagy & Glaw, 2012). This solution helps to attribute particular taxonomic status to populations with at least one conspicuous specific operational criterion. In the context of new trends in conservation biology to preserve evolutionarily significant units below the species level (e.g. Crowhurst *et al*., 2011), this subspecies definition provides an effective short cut for estimating patterns of intraspecific diversity (Phillimore & Owens, 2006) and allows assignment of a legal taxonomic status for conservation plans to theses differentiation stages. The present paper applies an integrative taxonomy approach on the basis of USC and the above defined subspecies definition to the bumblebee fauna of Corsica.

Bumblebees (genus *Bombus*) are the most important pollinators for ecosystem services in the North Temperate Zone (Free, 1993). Unfortunately, many bumblebee species are experiencing a strong decline (Williams & Osborne, 2009; Rasmont & Iserbyt, 2012). IUCN red lists include many bumblebee species (Cederberg *et al*., 2013). Moreover, bumblebee species like *B. terrestris* are important commercially for crop pollination and are exported outside their natural range (Velthuis & van Doorn, 2006). This has resulted in multiple invasions and competition with native species (Williams *et al*., 2012a). In the context of decline and commercial movement, an efficient and practical taxonomic approach is needed prior to planning conservation management strategies. Here, we apply such an approach to the Corsican bumblebee fauna that includes two taxa also distributed on the European mainland (*B. barbutellus* and *B. pascuorum*) and six endemics to Corsica (*B. ruderatus corsicola*, *B. hortorum jonghei*, *B. perezi*, *B. pereziellus*, *B. lucorum renardi* and *B. terrestris xanthopus*) (Rasmont & Adamski, 1996). Most Corsican endemic taxa have been previously considered as species by their original descriptor mainly because of specific Corsican colour patterns (black hairs and a red-brownish tail) despite the unsuitability of colour pattern as a diagnostic character for bumblebee species (Carolan *et al*., 2012). More recently, based on the same colour pattern, taxonomists have regarded the Corsican endemics as subspecies of continental species (Table 1, review in Rasmont & Adamski, 1996), but the suitability of colour pattern in discriminating some subspecies has been also criticized (Bertsch & Schweer, 2012). Additional features were found to diverge in Corsican endemics; this includes ecology of *B. perezi* by Rasmont & Adamski (1996), behaviour of *B. terrestris xanthopus* by De Jonghe (1986) and molecular and chemo-ecological characters of species-specific secretions involved in the pre-mating behaviour in *B. perezi*, *B. lucorum renardi* and *B. terrestris xanthopus* (Lecocq *et al*., 2013b). However, bioassays on *B. terrestris xanthopus* show that Corsican taxa interbreed with continental *B. terrestris* in experimental conditions

Table 1 Corsican taxa/population and their nearest continental parents

Corsican taxa	*n*	Nearest continental parents	*n*
B. (*Psithyrus*) *barbutellus* (Kirby, 1802)	3	*B.* (*Psithyrus*) *barbutellus* (Kirby, 1802)	6
B. (*Megabombus*) *ruderatus corsicola* Strand, 1917	19	*B.* (*Megabombus*) *ruderatus* (Fabricius, 1775)	
Alternative taxonomic status: *B. corsicola*		*B. ruderatus autumnalis* (Fabricius, 1793)	5
		B. ruderatus ruderatus (Fabricius, 1775)	20
B. (*Megabombus*) *hortorum jonghei* Rasmont, 1996	14	*Bombus* (*Megabombus*) *hortorum* (L. 1761)	
		B. hortorum hortorum (L. 1761)	27
		B. hortorum asturiensis (Tkalců, 1974)	1
B. (Thoracobombus) pascuorum melleofacies Vogt, 1909	5	*B. (Thoracobombus) pascuorum melleofacies* Vogt, 1909	10
B. (*Psithyrus*) *perezi* (Schulthess-Rechberg, 1886)	19	*B.* (*Psithyrus*) *vestalis* (Fourcroy, 1785)	
Alternative taxonomic status: *B. vestalis perezi*		*B. vestalis vestalis* (Fourcroy, 1785)	29
B. (*Thoracobombus*) *pereziellus* (Skorikov, 1922)	10	*B.* (*Thoracobombus*) *muscorum* (L. 1758)	
Alternative taxonomic status: *B. muscorum pereziellus*		*B. muscorum muscorum* (L. 1758)	6
		B. muscorum allenelus Stelfox, 1933	1
		B. muscorum liepetterseni Löken, 1973	6
B. (*Bombus*) *lucorum renardi* Radoszkowski,1884	18	*B.* (*Bombus*) *lucorum* (L. 1761)	
Alternative taxonomic status: *B. renardi*		*B. lucorum lucorum* (L. 1761)	24
B. (*Bombus*) *terrestris xanthopus* Kriechbaumer, 1870		*B.* (*Bombus*) *terrestris* (L. 1758)	
Alternative taxonomic status: *B. xanthopus*	19	*B. terrestris dalmatinus* Dalla Torre, 1882	11
		B. terrestris lusitanicus Krüger, 1956	9
		B. terrestris terrestris (L. 1758)	10

The subspecies of continental species refer to taxa used in the present study. *n* is the number of specimens collected.

(De Jonghe, 1986) and other recent taxonomic studies suggest that *B. terrestris xanthopus* is a *B. terrestris* subspecies (Rasmont *et al*., 2008; Bertsch & Schweer, 2012; Williams *et al*., 2012b).

In this paper, we develop an integrative and pragmatic taxonomic approach to assess the species and subspecies status, an essential first step in conservation biology programs. We apply this approach to the Corsican bumblebees by using two genetic markers and one eco-chemical trait. We also show the consequences of relevant taxonomic statuses on the conservation status of the focal taxa.

Materials and methods

Sampling

We sampled all Corsican taxa and their nearest continental relatives (Corsican–mainland pairs) (Table 1; Supporting Information Table S1). Several samples were described in Lecocq *et al*. (2011, 2013b). In order to perform taxonomic analyses on the broadest possible monophyletic group that includes the Corsican taxa, we also tried to sample all the closely related species of each Corsican–mainland pair. Except for subspecies of *B. terrestris*, the monophyly of groups formed by each Corsican–mainland pair and its closely related species were established in previous phylogenetic studies (Pedersen, 2002; Cameron, Hines & Williams, 2007). Bees were killed by freezing at −20°C.

Here, we considered Corsican bumblebees without *a priori* taxonomic status and referred to them as *corsicola*, *jonghei*, *perezi*, *pereziellus*, *renardi*, *xanthopus*, Corsican *barbutellus* and Corsican *pascuorum*.

Genetic divergence

We sequenced two genes commonly used in bumblebees phylogenetic studies (e.g. Pedersen, 2002): mitochondrial cytochrome oxidase 1 (COI) and nuclear protein-coding gene elongation factor-1 alpha, F2 copy (EF-1α). We extracted total DNA and carried out polymerase chain reaction (PCR) amplifications (Supporting Information Appendix S1). We sequenced both strands of each PCR product and then computed the consensus of both strands with CodonCode Aligner 3.0.1 (Supporting Information Appendix S1). Sequences were aligned with MAFFT ver.6 (Katoh *et al*., 2002). The final molecular datasets spanned 849 bp from COI [250 parsimony informative sites (PIS)] and 773 bp from EF-1α F2 copy containing a ~200 bp intron (118 PIS; GenBank numbers in Supporting Information Table S1).

We performed phylogenetic analyses to investigate the genetic differentiation of Corsican bumblebees. We analyzed each gene independently with maximum likelihood (ML) and Bayesian (MB) methods. For both methods, we partitioned each gene to choose the best fitting substitution models with jModeltest (Posada, 2008; Supporting Information Appendix S1).

We conducted ML analyses with Garli 2.0 (Zwickl, 2006; Supporting Information Appendix S1). We performed 10 independent runs in Garli for each gene; the topology and –ln L were identical among replicates. The run with the highest likelihood was retained. We evaluated statistical confidence in nodes with 10 000 non-parametric bootstrap replicates. Topologies with bootstrap values ≥ 70% were considered well supported (Hillis & Bull, 1993).

We performed MB analyses with Mr.Bayes 3.1.2 (Ronquist & Huelsenbeck, 2003). We carried out five independent analyses for each gene (100 million generations, four chains with mixed-models, default priors, saving trees every 100 generations; Supporting Information Appendix S1). Then, we discarded the first ten million generations as burn-in. The phylogeny and posterior probabilities were then estimated from the remaining trees and a majority-rule 50% consensus tree was constructed. Topologies with posterior probabilities ≥ 0.95 were considered as well supported (Wilcox *et al*., 2002).

The extent of genetic differentiation

In order to characterize the extent of the genetic divergence of Corsican taxa, we used the bGMYC method (Reid & Carstens, 2012), a Bayesian implementation of the general mixed Yule-coalescent (GMYC; Pons *et al*., 2006) integrating the uncertainty related to phylogenetic inference (Reid & Carstens, 2012). For each pair of DNA sequences, this method estimates the posterior probability that specimens are conspecific. The probability that a lineage was conspecific with other lineages was here estimated by reporting ranges of posterior probabilities among sequences from different lineages. The bGMYC method relies on the prediction that independent evolution leads to the appearance of distinct genetic clusters (i.e. monophyly), separated by longer internal branches (Barraclough, Birky & Burt, 2003). We applied this method on loci where divergences of Corsican taxa were detected by MB and ML phylogenetic analyses (here we detected only divergences of Corsican taxa in COI see MB and ML results). The bGMYC analyses were performed on each broadest available monophyletic group that included each Corsican taxon. A range of probabilities > 0.90 was considered as strong evidence that the groups compared were conspecific while a range of probabilities < 0.05 strongly suggested that the groups compared was not conspecific (Reid & Carstens, 2012). Other probabilities were interpreted as indicating non-significance; in these cases, the method was not able to confirm if the groups compared were conspecific or were not conspecific (Reid & Carstens, 2012). The bGMYC algorithm requires several ultrametric trees (i.e. trees whose tips are all equidistant from the root). We then used BEAST 1.7.4 (Drummond *et al*., 2012) with a phylogenetic clock model to generate a posterior distribution of trees (length of the MCMC chain: 1 billion generations). We based the bGMYC analysis on 1000 trees sampled every 10 000 generations. For each of these 1000 trees, the MCMC was made of 100 000 generations, discarding the first 90 000 as burn-in and sampling every 100 generations.

Eco-chemical trait divergence

We focused on the most studied reproductive trait involved in the bumblebee pre-mating recognition (Ayasse, Paxton & Tengö, 2001; Baer, 2003): the cephalic labial gland secretions (CLGS) used in resolving species status (e.g. Bertsch *et al.*, 2005). CGLS are a species-specific mixture of (mainly aliphatic) compounds, with several main components (e.g. Calam, 1969; Lecocq *et al.*, 2013b), synthesized *de novo* (Žáček *et al.*, 2013). By main compounds, we mean those that have the highest relative amount (RA) in at least one individual of the taxon.

We extracted the CLGS in 400 μL *n*-hexane following De Meulemeester *et al.* (2011). We determined the composition of CLGS by gas chromatography-mass spectrometry (GC/MS, Supporting Information Appendix S1). We analyzed all samples with a gas chromatograph-flame ionization detector with the same chromatographic conditions as in GC/MS (Supporting Information Appendix S1). We calculated RA of compounds in each sample (Supporting Information Appendix S1). We elaborated the data matrix as the alignment of each compound between all samples performed with GCAligner 1.0 (Dellicour & Lecocq, 2013).

We performed statistical comparative analyses of the CLGS of each species groups in R (R Development Core Team, 2013) to detect differentiations of Corsican taxa. We transformed data [log $(x - 1)$] to reduce the great difference of abundance between highly and lowly concentrated compounds, and then standardized (mean = 0, standard deviation = 1) to reduce the sample concentration effect (De Meulemeester *et al.*, 2011). We compared Corsican taxa and their nearest parents with principal component analyses (PCA; R-package MASS, Venables & Ripley, 2002). We assessed CLGS differentiations of Corsican taxa by performing multiple response permutation procedure (MRPP; R-package vegan, Oksanen *et al.*, 2011). To determine compounds specific to and regular to Corsican taxa, we used the indicator value (IndVal) method (Dufrêne & Legendre, 1997; see Supporting Information Appendix S1). We evaluated the statistical significance of a compound as an indicator at the 0.01 level with a randomization procedure.

Results

Phylogenetic analyses

Phylogenetic analyses on the same genetic markers led to identical relationships between Corsican taxa and their nearest parents (supplementary trees at TreeBase TB2:S14553). EF-1α phylogenetic analyses recovered all deep hierarchical-level relationships among subgenera but failed to discriminate closely related species (i.e. haplotype shared between *B. lucorum* and *B. terrestris*; Fig. 1a). All Corsican taxa/populations were not differentiated in EF-1α but *renardi* and *perezi* had some specific haplotypes not shared with their mainland counterparts (Fig. 1a). All Corsican taxa except Corsican *pascuorum* were differentiated by specific haplotypes using COI. COI phylogenetic analyses resolved the relationships between *corsicola*, *jonghei*, *perezi*, *renardi* and *xanthopus* and their nearest parents in two well-supported clades (Fig. 1b). The *pereziellus-muscorum* and *barbutellus* groups split in three main clades (including one Corsican clade; Fig. 1b).

bGMYC analyses

The bGMYC analyses on COI showed probabilities of conspecificity ranging from 0 to 0.30 between out-groups and in-groups (Fig. 2; Supporting Information Table S2). Comparisons between Corsican taxa and their nearest parents displayed bGMYC conspecificity probabilities of 0.9–1 (Corsican *pascuorum* vs. *B. pascuorum*), 0.85 (*corsicola* vs. *B. ruderatus*), 0.81 (*jonghei* vs. *B. hortorum*), 0.7 (*perezi* vs. *B. vestalis*), 0.54 (*renardi* vs. *B. lucorum*), 0.39 (*pereziellus* vs. *B. muscorum*), 0.2 (*xanthopus* vs. *B. terrestris*) and 0.09–0.23 (Corsican *barbutellus* vs. *B. barbutellus*; Fig. 2; Supporting Information Table S2). The bGMYC results were not significant except for some Corsican *barbutellus* and some Corsican *pascuorum*.

CLGS analyses

We detected several compounds in the CLGS (*corsicola* group: 38; *jonghei* group: 50; *pereziellus* group: 35; *pascuorum* group: 50; Supporting Information Table S3). The CLGS of continental taxa were similar to previous studies (Kullenberg *et al.*, 1973; Appelgren *et al.*, 1991; Urbanová *et al.*, 2004). CLGS results of the four other groups were reported by Lecocq *et al.* (2011, 2013b) with the same GC methods.

PCA indicated CLGS differentiation of *corsicola*, *perezi*, *renardi* and *xanthopus* (Fig. 3). MRPP confirmed these differentiations (all P values < 0.01): *corsicola* versus *B. ruderatus* ($T = 0.2317$, $A = 0.2535$); *perezi* versus *B. vestalis* ($T = 0.3782$, $A = 0.1543$); *renardi* versus *B. lucorum* ($T = 0.2869$, $A = 0.2405$); and *xanthopus* versus *B. terrestris* ssp. ($T = 0.3023$, $A = 0.51$). The IndVal method revealed several indicator compounds with strong significance (IndVal > 0.70) for these four Corsican taxa (Supporting Information Table S3): *corsicola*: 13 indictor compounds (IC); *perezi*: three IC; *renardi*: 13 IC (including one main compound); *xanthopus*: 14 IC (including three main compounds).

Discussion

Integrative decision framework

The development of an integrative taxonomic approach aims to overcome the specific limitations of genetic and reproductive trait analyses in order to draw a strongly

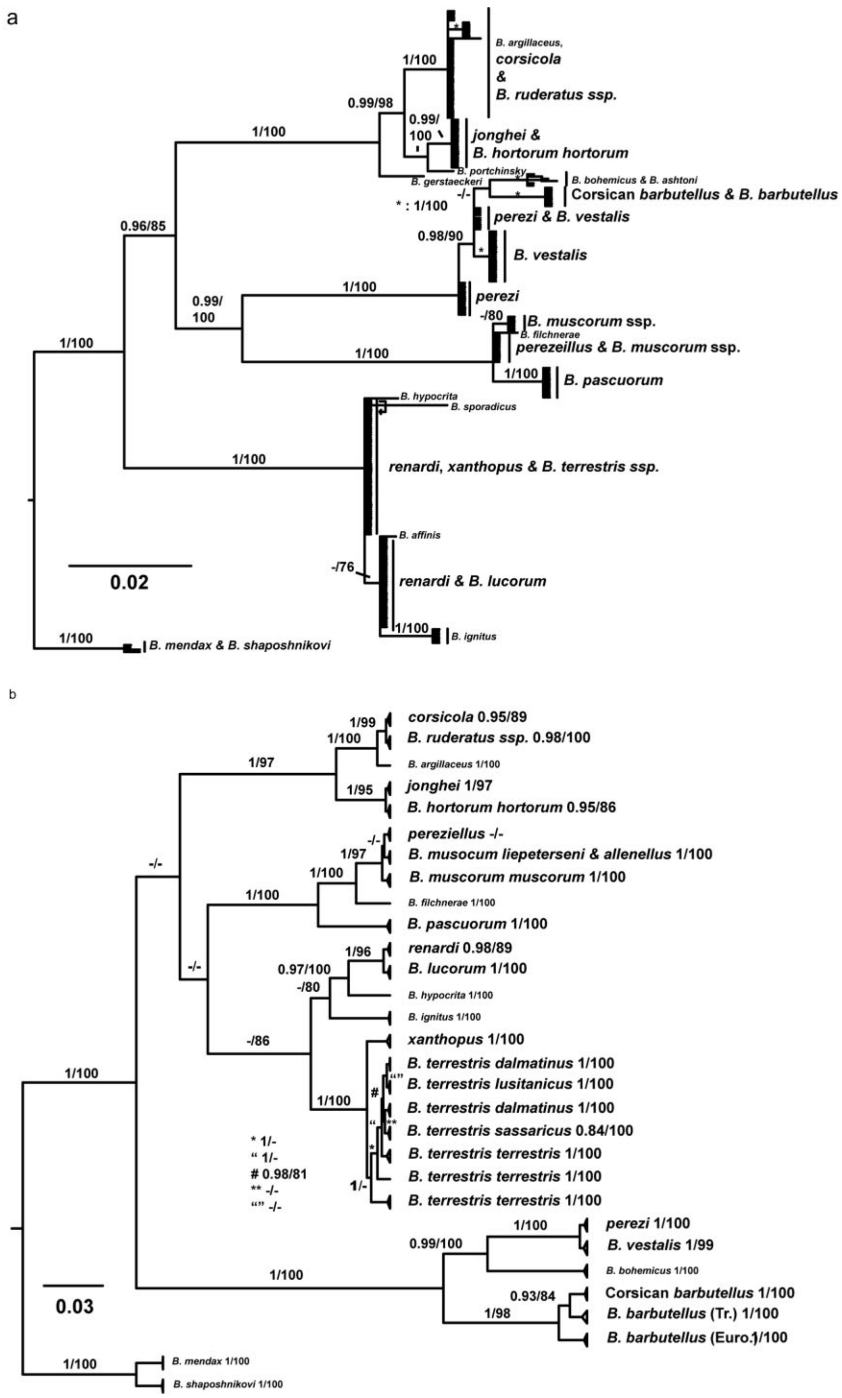

Figure 1 Majority rule consensus of Bayesian analyses of the EF-1α and COI marker. (a) Majority rule (50%) consensus tree of Bayesian analyses of the EF-1α marker. (b) Majority rule (50%) consensus tree of Bayesian analyses of the COI marker. For both trees, the values above branches and after names (1B) are Bayesian posterior probabilities/maximum likelihood bootstrap values of this group. Taxa names in small are out-groups; taxa names in large are Corsican taxa and their continental nearest relatives. Only posterior probabilities > 0.95 and maximum likelihood bootstrap values > 70% are showed.

supported taxonomic hypothesis. Here, we consider that partial genetic differentiation along with reproductive trait differentiation can attest to speciation processes among taxa, with a high degree of certainty. Therefore, we assign species status if the taxon (1) is genetically differentiated (COI or/and EF-1α specific haplotypes); (2) is not significantly conspecific with its continental nearest parents in bGMYC analyses (probability < 0.9 to be conspecific); (3) is significantly differentiated in CLGS compositions; and (4) is differentiated in the main CLGS compounds. We assign subspecies status if there are divergences in some but not all operational criteria according to the subspecies definition proposed by Hawlitschek *et al.* (2012). Since we consider that the speciation between island and mainland populations is the result of a continuous differentiation process, subspecies status allows capturing this process at various stages between the initial conspecificity and the complete speciation.

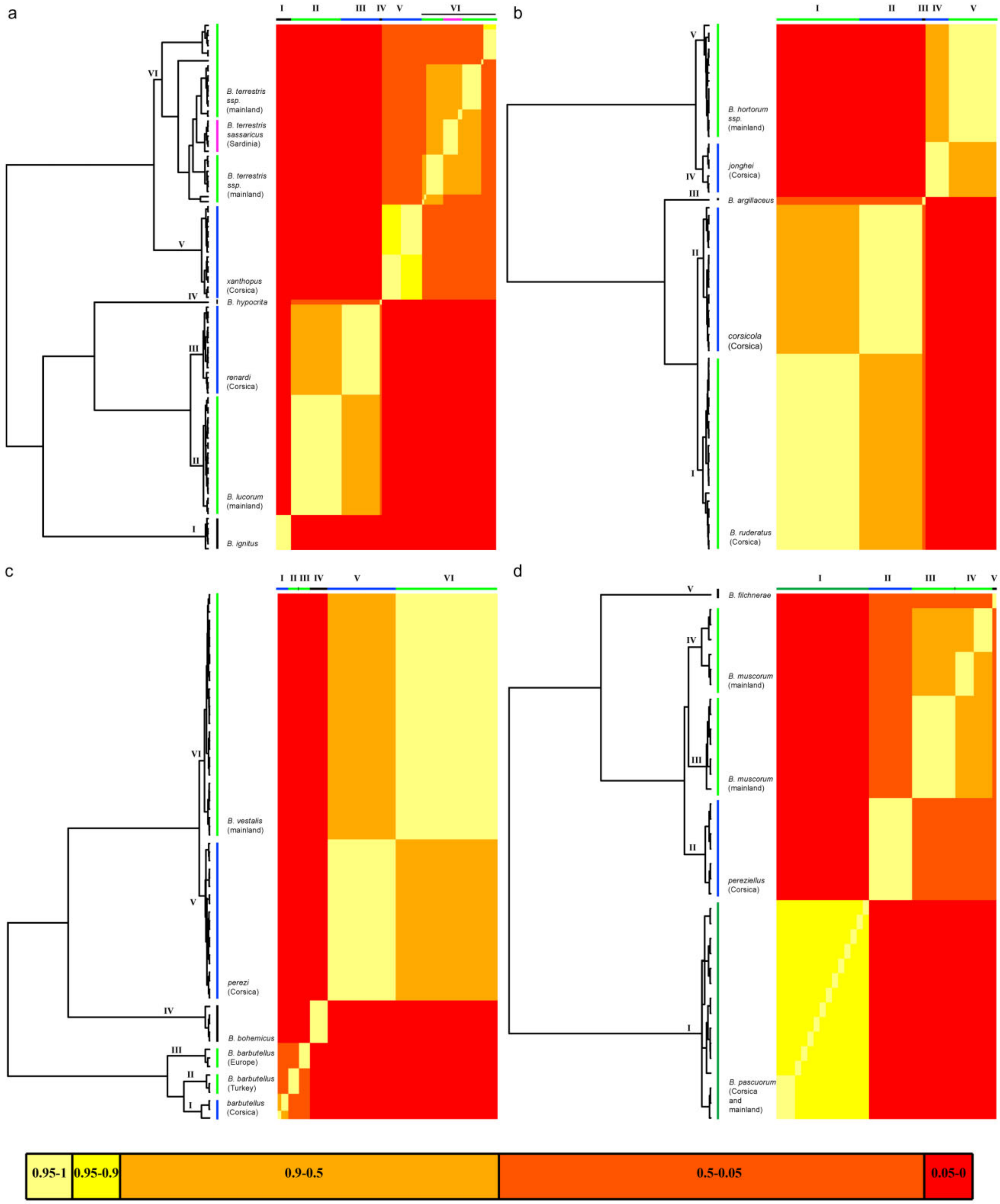

Figure 2 bGMYC results based on COI phylogenetic trees. (a) *renardi* and *xanthopus* (blue vertical lines) and their allopatric nearest parents (green vertical lines). (b) *corsicola* and *jonghei* (blue vertical lines) and their allopatric nearest parents (green vertical lines). (c) *perezi* and Corsican *barbutellus* (blue vertical lines) and their allopatric nearest parents (green vertical lines). (d) *pereziellus* and Corsican *pascuorum* (blue vertical lines) and their allopatric nearest parents (green vertical lines). The black vertical lines are out-groups. The colour scale is the probability scale of conspecificity.

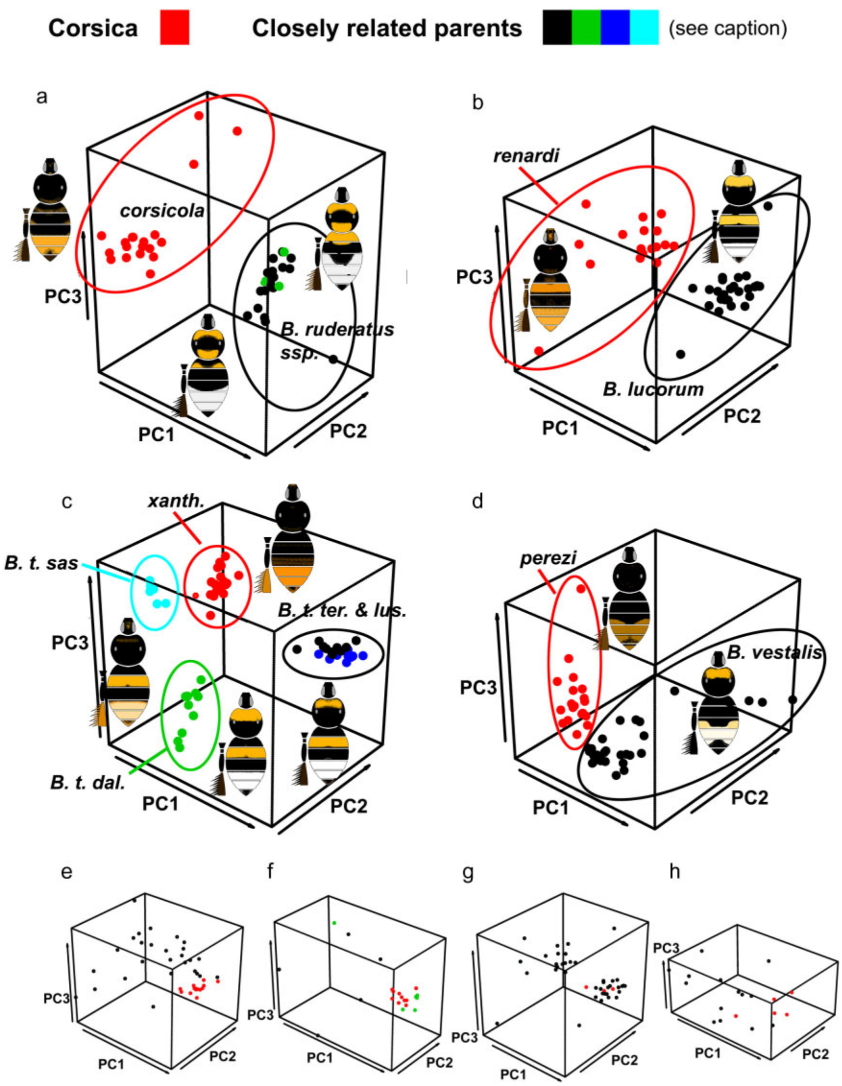

Figure 3 Principle components analyses (PCA) of CLGS of Corsican bumblebees and their continental nearest relatives. PC1, PC2 and PC3 are first, second and third axes of the PCA. Ellipses represent significant groups detected in MRPP. (a) *corsicola* (red), *B. ruderatus ruderatus* (black) and *B. ruderatus autumnalis* (green). (b) *renardi* (red) and *B. lucorum* (black). (c) *xanthopus* (*B. xan.*) (red), *B. terrestris terrestris* (*B. t. ter.*) (black), *B. terrestris dalmatinus* (*B. t. dal.*) (green), *B. terrestris lusitanicus* (*B. t. lus.*) (dark blue) and *B. terrestris sassaricus* (*B. t. sas.*) (light blue). (d) *perezi* (red) and *B. vestalis* (black). (e) *jonghei* (red) and *B. hortorum hortorum* (black). (f) *pereziellus* (red), *B. muscorum muscorum* (black), *B. muscorum liepeterseni* and *B. muscorum allenellus* (green). (g) Corsican *B. barbutellus* (red) and continentals (black). (h) Corsican *B. pascuorum* (red) and mainland population (black).

The accuracy of the proposed integrative method is depending on selected features (see discussion below) and sampling. All modern taxonomic methods based on intra- and interspecific variability comparisons are expected to consider monophyletic groups. Not considering all members of a monophyletic group is especially likely to affect the bGMYC results because the method compares branching patterns within and among subgroups (Fujisawa & Barraclough, 2013). Similarly, limited sampling of a group of taxa makes it impossible to estimate the CLGS diversity among the group. Here, we managed to sample most of the taxa included in all Corsican-mainland clades except for *B. terrestris* (Rasmont *et al*., 2008), *B. barbutellus* (Lecocq *et al*., 2011) and *B. muscorum* groups (the sampling included only distant/isolated populations that could overvalue the bGMYC results). We speculate that limited sampling did not significantly affect our results.

Taxonomic statuses

Species status is assigned to *renardi* and *xanthopus* according to their genetic differentiation and their main compound CLGS differentiations (Table 2). The resulting nomenclature is *B. renardi* Radoszkowski, 1884 and *B. xanthopus* Kriechbaumer, 1870 (nomenclature review in Rasmont & Adamski, 1996). The species status of *B. xanthopus* and *B. renardi* are congruent with their ecological and ethological divergences (review in Rasmont & Adamski, 1996). This result for *B. xanthopus* is conflicting with previous works on *B. terrestris* subspecies that underline divergences in morphology (Rasmont *et al*., 2008), CLGS (Bertsch & Schweer, 2012) or COI (Williams *et al*., 2012b) but do not regard these divergences as deserving a species status. Comprehensive revision is needed to re-evaluate other *B. terrestris* subspecies.

Table 2 Decision-taking table

Corsican bumblebees	COI/ EF-1α Orig. Haplo.	bGMYC	CLGS	Main comp. CLGS	New taxonomic status
corsicola	++/–	*	+	–	*B. ruderatus corsicola*
jonghei	++/–	*	–	–	*B. hortorum jonghei*
perezi	++/+	*	+	–	*B. vestalis perezi*
pereziellus	++/–	*	–	–	*B. muscorum pereziellus*
renardi	++/+	*	+	+	*B. renardi*
xanthopus	++/–	*	+	+	*B. xanthopus*
Corsican *barbutellus*	++/–	*	–	–	*B. barbutellus* ssp. (Corsica)
Corsican *pascuorum*	–/–	–	–	–	*B. pascuorum*

COI/ EF-1α Orig. Haplo. indicate whether Corsican COI/ EF-1α haplotypes are shared with closely related allopatric parents (++ means that all Corsican haplotypes are not shared with allopatric parents, + means that some Corsican haplotypes are shared with allopatric parents, – means that all Corsican haplotypes are shared with allopatric parents). bGMYC indicates the probability of Corsican taxa to be conspecific with their continental nearest parents in bGMYC analyses [– means that the taxa/population have a mean probability > 0.9 to be conspecific with their continental parents, * indicates the taxa/population have not a significant probability (< 0.9) to be conspecific with their continental parents]. CLGS indicates whether the Corsican taxa/population is significantly differentiated (+) in their cephalic labial gland secretions. Main comp. CLGS indicates whether the CLGS differentiation involves main compounds.

Subspecies status is assigned to *corsicola*, *jonghei*, *pereziellus*, and *perezi*, and is confirmed for Corsican *B. barbutellus* (see Lecocq *et al*., 2011) according to divergence in one or some operational criteria (Table 2). The new nomenclatures are *B. ruderatus corsicola* Strand, 1917, *B. hortorum jonghei* Rasmont, 1996, *B. muscorum pereziellus* (Skorikov, 1922), *B. vestalis perezi* (Schulthess-Rechberg, 1886) and Corsican *B. barbutellus* spp. (nomenclature review in Rasmont & Adamski, 1996). For Corsican *B. barbutellus*, we currently lack of Italian *B. barbutellus* (previously considered as consubspecific with Corsican population; see Lecocq *et al*., 2011) to assess the status of endemic subspecies. All taxonomic statuses of these taxa with conspicuous specific characters should be reconsidered if future genetic analyses or bioassays point out higher differentiation degree from their continental parents. Corsican *B. pascuorum* is considered as similar to its continental parents according to a lack of divergence (Table 2). These results agree with most of previous studies (see Rasmont & Adamski, 1996; Lecocq *et al*. 2011, 2013b).

Limitation of studied characters

Monophyly based on molecular data or at least original haplotypes can provide evidence of speciation between taxa (Avise, 2000, 2004). However, the detection of this genetic evidence depends on the targeted markers that could lead to different tree topologies and thus to conflicting taxonomic statuses. For example, the usefulness of nuclear gene sequences in discriminating closely related taxa appears generally limited in many animal groups compared with mitochondrial markers for similar taxonomic levels as observed in the present study (Fig. 1). This is presumably a consequence of the substantially greater coalescence time of nuclear genes (Boursot & Bonhomme, 1986). Further studies on nuclear markers with higher mutation rates (e.g. phosphoenolpyruvate carboxykinase) could provide a more efficient tool in discriminating closely related taxa (e.g. Leys, Cooper & Schwarz, 2002; Lecocq *et al*., 2013a). However, determining objective markers for species delimitation is difficult because a variety of factors can cause the genealogy from a particular locus to be discordant with the true history of speciation (Maddison, 1997; Reid & Carstens, 2012). An alternative solution is to develop a multilocus approach such as restriction site-associated DNA sequencing to avoid taxonomic conclusions based on few loci whose power of recognizing species may be limited by the total amount of variation (Cruaud *et al*., 2014). However, such approaches are not within an easy reach for all taxonomists.

Taxonomic assessment methods exclusively based on genetic distance (e.g. methods of cut-off rule, Brower, 1994, or pairwise distance thresholds, Tang *et al*., 2012) generally leads to higher splitting (Agapow *et al*., 2004), especially in island taxa because of reduced gene flow with other populations, founder events and genetic drift (Peterson & Navarro-Sigüenza, 1999). Moreover, those methods based on genetic distance suffer (1) from a weak connection to evolutionary theory; (2) from variation in typical levels of intraspecific and interspecific variation among clades; and (3) from substitution rate variation among lineages (Barraclough *et al*., 2009). Delimiting species approaches based on phylogenetic inferences such as bGMYC aims to avoid these limitations and allow taking in account the species lineages as well as other conspicuous evolutionary units below the species level. However, our bGMYC analyses failed to detect several out-group species as significantly not conspecific with other species despite their recognized species status (e.g. Williams *et al*., 2012b). This is presumably a consequence of GMYC methods, which assume that species are distinct genetic clusters (i.e. monophyly) separated by longer internal branches (Barraclough *et al*., 2003) that could be not observed between closely related species (Esselstyn *et al*., 2012; Zhang *et al*., 2013). Indeed, all genetic-based approaches for species delimitation (e.g. cut-off rule, pairwise distance thresholds, bGMYC) can be contested because (1) speciation processes are not always characterized by accumulation of many genetic differences (e.g. Ferguson, 2002; Kuhlmann *et al*., 2007);

(2) differentiation between two species does not always result in two monophyletic groups (e.g. paraphyletic species; Kruckenhauser *et al.*, 2014); (3) conspecific populations can display high genetic divergence (e.g. Salvato *et al*., 2002); and (4) mating isolation can happen faster than differentiation of genetic markers (Trewick, 2008; Symonds, Moussalli & Elgar, 2009; Bauer *et al*., 2011). One alternative approach is to base species delimitations on reproductive traits involved in species mating recognition (Paterson, 1993).

Divergence in reproductive traits provides useful criteria to detect pre-mating isolation between individuals (Paterson, 1993). However, consequences of divergences in reproductive traits can range from simple regional variation (i.e. 'dialects' consisting of different relative amounts of the same key compounds; e.g. Vereecken, Mant & Schiestl, 2007) to the establishment of a reproductive isolation barrier (Martens, 1996). In the case of Corsican bumblebees, four taxa are significantly differentiated in CLGS from their closest parents. The *xanthopus* CLGS differentiation (also detected by Bertsch & Schweer, 2012) as well as the *renardi* CLGS differentiation involve main compounds. We regard these main compound differentiations as a strong indicator of potential ethological consequences for pre-mating recognition because most bumblebee species diverge in CLGS main compounds (e.g. Bertsch *et al*., 2005). In contrast, CLGS divergence of *corsicola* and *perezi* does not involve main compounds and suggests only a 'Corsican dialect' that presumably does not lead to establishment of a reproductive isolation barrier (e.g. Vereecken *et al*., 2007), even if few changes in chemical reproductive traits can lead to such a consequence. Further bioassays are needed, but this requires species-specific year-round rearing methods (Lhomme *et al*., 2012, 2013) that are not available for all species (Hasselrot, 1960).

Conservation implications

In conservation, erroneous decisions may be made if taxonomic status is incorrectly assigned. It could lead to ignorance of an endangered species that prevents conservation plans, legal protection of different populations of a common species erroneously considered as distinct species or hybridization issues in conservation management (review in Frankham, Ballou & Briscoe, 2010). Regardless of taxonomic status (species or subspecies), our integrative approach brings to attention the relevance of geographically isolated conspicuous groups differentiated in genetic and reproductive traits, corresponding to Evolutionarily Significant Units (ESUs; Conner, 2004). This allows the definition of management units important for conservation. For example, crossing between species or between genetically differentiated conspecific populations (outbreeding) can result in reduced fitness (e.g. outbreeding depression); awareness of ESUs can prevent this issue. Moreover, these ESU might reflect adaptive variation (Crandall *et al*., 2000). For example, conservation of subspecies with different CLGS dialects preserves the diversity of communication signals. This diversity could increase the adaptive potential of such taxa (Fisher, 1930) in the context of anthropogenic disturbances of animal communication (Rosenthal & Stuart-Fox, 2012).

The assignment of suitable taxonomic statuses to ESUs is crucial in conservation (Frankham *et al*., 2010). Indeed, elevation of all ESUs to the species level to focus management plans on these units leads to a taxonomic inflation making it increasingly difficult to provide funding for conservation (e.g. Isaac, Mallet & Mace, 2004). The possibility to assign several taxonomic statuses (conspecific, subspecies and species) and to quantify the number of differentiated characters (genetic markers, CLGS) and the strength of these divergences (probability in bGMYC, divergence in CLGS main compounds) in our integrative methods can provide a ranking of distinctiveness for all studied ESU. This can provide a decision framework for policy-makers and conservation organizations to allocate funding and management efforts.

The taxa of the insular Corsican bumblebee fauna can be ranked as follow: (1) endemic species: *B. xanthopus* and *B. renardi*; (2) endemic subspecies with conspicuous divergences: *B. ruderatus corsicola*, *B. hortorum jonghei*, *B. muscorum pereziellus*, *B. vestalis perezi* and Corsican *B. barbutellus*; and (3) non-endemics: Corsican *B. pascuorum*. These new taxonomical hypotheses have implications for the red list assessments of some European bumblebees according to IUCN criteria (IUCN Species Survival Commission, 2012). Cederberg *et al*. (2013) considered two taxa as endemic in Corsica *B. perezi* and *B. pereziellus* (both are assessed least concern). Now populations of *B. muscorum pereziellus* should be evaluated with other continental populations of *B. muscorum*. As this species was considered as vulnerable following criteria A (category and criteria A2c), populations of *B. muscorum pereziellus* should be now considered as red listed and protected. Moreover, the two 'new' species *B. renardi* and *B. xanthopus* should have a new original assessment. As *B. terrestris* is not present now on Corsica, its trade should be ceased to avoid competition with its close relative *B. xanthopus* (Williams *et al*., 2012a).

Further applications of the present method

Our integrative taxonomic approach allows assignment of taxonomic status (consubspecific, subspecies or species) to ESUs defined by their specificity (divergence) in genetic and reproductive traits as well as the strength of this specificity for endemic taxa by comparison with allopatric ones. This provides a decision framework for policy-makers and conservation organizations. Our integrative approach and taxonomic decision framework could be applied to other species that use chemical reproductive traits.

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References

Agapow, P.-M., Bininda-Emonds, O.R.P., Crandall, K.A., Gittleman, J.L., Mace, G.M., Marshall, J.C. & Purvis, A. (2004). The impact of species concept on biodiversity studies. *Q. Rev. Biol.* **79**, 161–179.

Appelgren, M., Bergström, G., Svensson, B.G. & Cederberg, B. (1991). Marking pheromones of *Megabombus* bumble bee males. *Acta Chem. Scand.* **45**, 972–974.

Avise, J.C. (2000). *Phylogeography: the history and formation of species*: Cambridge: Harvard University Press.

Avise, J.C. (2004). What is the field of biogeography, and where is it going? *Taxon* **53**, 893–898.

Ayasse, M., Paxton, R.J. & Tengö, J. (2001). Mating behavior and chemical communication in the order Hymenoptera. *Annu. Rev. Entomol.* **59**, 299–319.

Baer, B. (2003). Bumblebees as model organisms to study male sexual selection in social insects. *Behav. Ecol. Sociobiol.* **54**, 521–533.

Barraclough, T.G., Birky, C.W. Jr. & Burt, A. (2003). Diversification in sexual and asexual organisms. *Evolution (N. Y.)* **57**, 2166–2172.

Barraclough, T.G., Hughes, M., Ashford-Hodges, N. & Fujisawa, T. (2009). Inferring evolutionarily significant units of bacterial diversity from broad environmental surveys of single-locus data. *Biol. Lett.* **5**, 425–428.

Bauer, A.M., Parham, J.F., Brown, R.M., Stuart, B.L., Grismer, L., Papenfuss, T.J., Böhme, W., Savage, J.M., Carranza, S., Grismer, J.L., Wagner, P., Schmitz, A., Ananjeva, N.B. & Inger, R.F. (2011). Availability of new Bayesian-delimited gecko names and the importance of character-based species descriptions. *Proc. Roy. Soc. Lond. Ser. B.* **278**, 490–493.

Bertsch, A. & Schweer, H. (2012). Cephalic labial gland secretions of males as species recognition signals in bumblebees: are there really geographical variations in the secretions of the *Bombus terrestris* subspecies? *Beitr. Ent.* **62**, 103–124.

Bertsch, A., Schweer, H., Titze, A. & Tanaka, H. (2005). Male labial gland secretions and mitochondrial DNA markers support, species status of *Bombus cryptarum* and *B. magnus* (Hymenoptera, Apidae). *Insectes Soc.* **52**, 45–54.

Boursot, P. & Bonhomme, F. (1986). Génétique et évolution du génome mitochondrial des Métazoaires. *Genet. Sel. Evol.* **18**, 73–78.

Brower, A.V.Z. (1994). Rapid morphological radiation and convergence among races of the butterfly *Heliconius erato* inferred from patterns of mitochondrial DNA evolution. *Proc. Natl. Acad. Sci. USA* **91**, 6491–6495.

Calam, D.H. (1969). Species and sex-specific compounds from the heads of male bumblebees (*Bombus* spp. *Nature* **221**, 856–857.

Cameron, S.A., Hines, H.M. & Williams, P.H. (2007). A comprehensive phylogeny of the bumble bees (*Bombus*). *Biol. J. Linn. Soc.* **91**, 161–188.

Carolan, J.C., Murray, T.E., Fitzpatrick, U., Crossley, J., Schmidt, H., Cederberg, B., McNally, L., Paxton, R.J., Williams, P.H. & Brown, M.J.F. (2012). Colour patterns do not diagnose species: quantitative evaluation of a DNA barcoded cryptic bumblebee complex. *PLoS ONE* **7**, e29251.

Cederberg, B., Michez, D., Nieto, A., Radchenko, V., Rasmont, P. & Roberts, S. (2013). Bombus In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. Downloaded on 01 Januray 2014. http://www.iucnredlist.org (accessed 2 January 2014).

Collar, N. (1994). Extinction, endangerment and everything. *World Birdwatch* **16**, 6–9.

Conner, J. (2004). *A primer of ecological genetics*. Sunderland: Sinauer Associates.

Crandall, K.A., Bininda-Emonds, O.R.R., Mace, G.M. & Wayne, R.K. (2000). Considering evolutionary processes in conservation biology. *Trends Ecol. Evol.* **15**, 290–295.

Crowhurst, R.S., Faries, K.M., Collantes, J., Briggler, J.T., Koppelman, J.B. & Eggert, L.S. (2011). Genetic relationships of hellbenders in the Ozark highlands of Missouri and conservation implications for the Ozark subspecies (*Cryptobranchus alleganiensis bishopi*). *Conserv. Genet.* **12**, 637–646.

Cruaud, A., Gautier, M., Galan, M., Foucaud, J., Sauné, L., Genson, G., Dubois, E., Nidelet, S., Deuve, T. & Rasplus, J.-Y. (2014). Empirical assessment of RAD sequencing for interspecific phylogeny. *Mol. Biol. Evol.* **31**, 1272–1274.

De Jonghe, R. (1986). Crossing experiments with *Bombus terrestris terrestris* (Linnaeus, 1758) and *Bombus terrestris xanthopus* Kricehbaumer, 1870 and some notes on diapause and nosemose (Hymenoptera: Apoidea). *Phegea* **14**, 19–23.

De Meulemeester, T., Gerbaux, P., Boulvin, M., Coppée, A. & Rasmont, P. (2011). A simplified protocol for bumble bee species identification by cephalic secretion analysis. *Insectes Soc.* **58**, 227–236.

De Queiroz, K. (2007). Species concepts and species delimitation. *Syst. Biol.* **56**, 879–886.

Dellicour, S. & Lecocq, T. (2013). GCALIGNER 1.0: an alignment program to compute a multiple sample comparison data matrix from large eco-chemical datasets obtained by gas chromatography. *J. Sep. Sci.* **36**, 3206–3209.

Drummond, A.J., Suchard, M.A., Xie, D. & Rambaut, A. (2012). Bayesian phylogenetics with BEAUti and the BEAST 1.7. *Mol. Biol. Evol.* **29**, 1969–1973.

Dufrêne, M. & Legendre, P. (1997). Species assemblages and indicator species: the need for a flexible asymmetrical approach. *Ecol. Monogr.* **67**, 345–366.

Esselstyn, J.A., Evans, B.J., Sedlock, J.L., Khan, F.A.A. & Heaney, L.R. (2012). Single-locus species delimitation: a test of the mixed Yule-coalescent model, with an empirical application to Philippine round-leaf bats. *Proc. Roy. Soc. Lond. Ser. B.* **279**, 3678–3686.

Ferguson, J.W.H. (2002). On the use of genetic divergence for identifying species. *Biol. J. Linn. Soc.* **75**, 509–516.

Fisher, B.L. & Smith, M.A. (2008). A revision of Malagasy species of *Anochetus* Mayr and *Odontomachus* Latreille (Hymenoptera: Formicidae). *PLoS ONE* **3**, e1787.

Fisher, R. (1930). *The genetical theory of natural selection*. Oxford: Clarendon Press.

Frankham, R., Ballou, J.D. & Briscoe, D.A. (2010). *Introduction to conservation genetics*. 2nd edn. Cambridge: Cambridge University Press.

Free, J.B. (1993). *Insect pollination of crops*. 2nd edn. London: Academic Press.

Fujisawa, T. & Barraclough, T.G. (2013). Delimiting species using single-locus data and the generalized mixed yule coalescent approach: a revised method and evaluation on simulated data sets. *Syst. Biol.* **62**, 707–724.

Haig, S.M., Beever, E.A., Chambers, S.M., Draheim, H.M., Dugger, B.D., Dunham, S., Elliott-Smith, E., Fontaine, J.B., Kesler, D.C., Knaus, B.J., Lopes, I.F., Loschl, P., Mullins, T.D. & Sheffield, L.M. (2006). Taxonomic considerations in listing subspecies under the U.S. Endangered Species Act. *Conserv. Biol.* **20**, 1584–1594.

Hasselrot, T.B. (1960). Studies on Swedish bumblebees (genus *Bombus* Latr.), their domestication and biology. *Opusc. Entomol.* (Suppl.) **17**, 1–192.

Hawlitschek, O., Nagy, Z.T. & Glaw, F. (2012). Island evolution and systematic revision of comoran snakes: why and when subspecies still make sense. *PLoS ONE* **7**, e42970.

Hillis, D.M. & Bull, J.J. (1993). An empirical test of bootstrapping as a method for assessing confidence in phylogenetic analysis. *Syst. Biol.* **42**, 182–192.

Isaac, N.J.B., Mallet, J. & Mace, G.M. (2004). Taxonomic inflation: its influence on macroecology and conservation. *Trends Ecol. Evol.* **19**, 464–469.

IUCN Species Survival Commission (2012). *Guidelines for application of IUCN red list criteria at regional and national levels version* 4.0. Gland: IUCN.

Katoh, K., Misawa, K., Kuma, K.-I. & Miyata, T. (2002). MAFFT: a novel method for rapid multiple sequence alignment based on fast Fourier transform. *Nucleic Acids Res.* **30**, 3059–3066.

Kier, G., Kreft, H., Tien, M.L., Jetz, W., Ibisch, P.L., Nowicki, C., Mutke, J. & Barthlott, W. (2009). A global assessment of endemism and species richness across island and mainland regions. *Proc. Natl. Acad. Sci. USA* **106**, 9322–9327.

Kruckenhauser, L., Duda, M., Bartel, D., Sattmann, H., Harl, J., Kirchner, S. & Haring, E. (2014). Paraphyly and budding speciation in the hairy snail (Pulmonata, Hygromiidae). *Zool. Scr.* **43**, 273–288.

Kuhlmann, M., Else, G.R., Dawson, A. & Quicke, D.L.J. (2007). Molecular, biogeographical and phenological evidence for the existence of three western European sibling species in the *Colletes succinctus* group (Hymenoptera: Apidae). *Org. Divers. Evol.* **7**, 155–165.

Kullenberg, B., Bergström, G., Bringer, B., Carlberg, B. & Cederberg, B. (1973). Observations on scent marking by *Bombus* Latr. and *Psithyrus* Lep. males (Hym., Apidae) and localization of site of production of the secretion. *Zoon* (Suppl.) **1**, 23–30.

Lecocq, T., Lhomme, P., Michez, D., Dellicour, S., Valterová, I. & Rasmont, P. (2011). Molecular and chemical characters to evaluate species status of two cuckoo bumblebees: *Bombus barbutellus* and *Bombus maxillosus* (Hymenoptera, Apidae, Bombini). *Syst. Entomol.* **36**, 453–469.

Lecocq, T., Dellicour, S., Michez, D., Lhomme, P., Vanderplanck, M., Valterová, I., Rasplus, J.-Y. & Rasmont, P. (2013a). Scent of a break-up: phylogeography and reproductive trait divergences in the red-tailed bumblebee (*Bombus lapidarius*). *BMC Evol. Biol.* **13**, 263.

Lecocq, T., Vereecken, N.J., Michez, D., Dellicour, S., Lhomme, P., Valterová, I., Rasplus, J.-Y. & Rasmont, P. (2013b). Patterns of genetic and reproductive traits differentiation in mainland vs. Corsican populations of bumblebees. *PLoS ONE* **8**, e65642.

Leys, R., Cooper, S.J.B. & Schwarz, M.P. (2002). Molecular phylogeny and historical biogeography of the large carpenter bees, genus *Xylocopa* (Hymenoptera: Apidae). *Biol. J. Linn. Soc.* **77**, 249–266.

Lhomme, P., Ayasse, M., Valterová, I., Lecocq, T. & Rasmont, P. (2012). Born in an alien nest: how do social parasite male offspring escape from host aggression? *PLoS ONE* **7**, e43053.

Lhomme, P., Sramkova, A., Kreuter, K., Lecocq, T., Rasmont, P. & Ayasse, M. (2013). A method for year-round rearing of cuckoo bumblebees (Hymenoptera:

Apoidea: *Bombus* subgenus *Psithyrus*). *Ann. Soc. Entomol. Fr.* **49**, 37–41.

Maddison, W.P. (1997). Gene trees in species trees. *Syst. Biol.* **46**, 523–536.

Martens, J. (1996). Vocalizations and speciation of Palearctic birds. In *Ecology and evolution of acoustic communication in birds*: 221–240. Kroodsma, D.E. & Miller, E.H. (Eds). Ithaca: Comstock Publishing.

Mayden, R. (1997). A hierarchy of species concepts: the denouement in the saga of the species problem. In *Species: the units of biodiversity*: 381–424. Claridge, M.F., Dawah, H.A. & Wilson, M.R. (Eds). London: Chapman and Hall Ltd.

Mayr, E. (1942). *Systematics and the origin of species*. New York: Columbia University Press.

Oksanen, F.J., Blanchet, G., Kindt, R., Legendre, P., Minchin, P.R., O'Hara, R.B., Simpson, G.L., Solymos, P., Stevens, M.H.H. & Wagner, H. (2011). Vegan: community ecology package. Tertiary Vegan: Community Ecology Package.

Paterson, H.E.H. (1993). *Evolution and the recognition concept of species*. Baltimore: The Johns Hopkins University Press.

Pedersen, B.V. (2002). European bumblebees (Hymenoptera: Bombini) – phylogenetic relationships inferred from DNA sequences. *Insect Syst. Evol.* **33**, 361–386.

Peterson, A.T. & Navarro-Sigüenza, A.G. (1999). Alternate species concepts as bases for determining priority conservation areas. *Conserv. Biol.* **13**, 427–431.

Phillimore, A.B. & Owens, I.P.F. (2006). Are subspecies useful in evolutionary and conservation biology? *Proc. R. Soc. B Biol. Sci.* **273**, 1049–1053.

Pons, J., Barraclough, T.G., Gomez-Zurita, J., Cardoso, A., Duran, D.P., Hazell, S., Kamoun, S., Sumlin, W.D. & Vogler, A.P. (2006). Sequence-based species delimitation for the DNA taxonomy of undescribed insects. *Syst. Biol.* **55**, 595–609.

Posada, D. (2008). jModelTest: phylogenetic model averaging. *Mol. Biol. Evol.* **25**, 1253–1256.

R Development Core Team (2013). *R: a language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing. ISBN 3-900051-07-0. http://www.R-project.org (accessed 2 January 2014).

Rasmont, P. & Adamski, A. (1996). Les Bourdons de la Corse (Hymenoptera, Apoidea, Bombinae). *Notes fauniques de Gembloux* **31**, 1–87.

Rasmont, P. & Iserbyt, S. (2012). Atlas of the European bees: genus *Bombus*. STEP Project. Status Trends Eur. Pollinators, Tertiary Atlas of the European Bees: genus Bombus. STEP Project. http://www.zoologie.umh.ac.be// hymenoptera/page.asp?ID=169 (accessed 2 January 2014).

Rasmont, P., Coppée, A., Michez, D. & De Meulemeester, T. (2008). An overview of the *Bombus terrestris* (L. 1758) subspecies (Hymenoptera: Apidae). *Ann. Soc. Entomol. Fr.* **44**, 243–250.

Reid, N.M. & Carstens, B.C. (2012). Phylogenetic estimation error can decrease the accuracy of species delimitation: a Bayesian implementation of the general mixed Yule-coalescent model. *BMC Evol. Biol.* **12**, 196.

Ronquist, F. & Huelsenbeck, J.P. (2003). MrBayes 3: Bayesian phylogenetic inference under mixed models. *Bioinformatics* **19**, 1572–1574.

Rosenthal, G.G. & Stuart-Fox, D. (2012). Environmental disturbance and animal communication. In *Behavioural responses to a changing world*: 17–31. Candolin, U. & Wong, B.B.M. (Eds). Oxford: Oxford University Press.

Salvato, P., Battisti, A., Concato, S., Masutti, L., Patarnello, T. & Zane, L. (2002). Genetic differentiation in the winter pine processionary moth (*Thaumetopoea pityocampa – wilkinsoni* complex), inferred by AFLP and mitochondrial DNA markers. *Mol. Ecol.* **11**, 2435–2444.

Schlick-Steiner, B.C., Steiner, F.M., Seifert, B., Stauffer, C., Christian, E. & Crozier, R.H. (2010). Integrative taxonomy: a multisource approach to exploring biodiversity. *Annu. Rev. Entomol.* **55**, 421–438.

Symonds, M.R.E., Moussalli, A. & Elgar, M.A. (2009). The evolution of sex pheromones in an ecologically diverse genus of flies. *Biol. J. Linn. Soc.* **97**, 594–603.

Tang, C.Q., Leasi, F., Obertegger, U., Kieneke, A., Barraclough, T.G. & Fontaneto, D. (2012). The widely used small subunit 18S rDNA molecule greatly underestimates true diversity in biodiversity surveys of the meiofauna. *Proc. Natl. Acad. Sci. USA* **109**, 16208–16212.

Trewick, S.A. (2008). DNA barcoding is not enough: mismatch of taxonomy and genealogy in New Zealand grasshoppers (Orthoptera: Acrididae). *Cladistics* **24**, 240–254.

Urbanová, K., Halák, J., Hovorka, O., Kindl, J. & Valterová, I. (2004). Marking pheromones of the cuckoo bumblebee males (Hymenoptera, Apoidea, *Bombus* Latreille): compositions of labial gland secretions of six species found in the Czech Republic. *Biochem. Syst. Ecol.* **32**, 1025–1045.

Velthuis, H.H.W. & van Doorn, A. (2006). A century of advances in bumblebee domestication and the economic and environmental aspects of its commercialization for pollination. *Apidologie* **37**, 421–451.

Venables, W.N. & Ripley, B.D. (2002). *Modern applied statistics with S*. 4th edn. New York: Springer.

Vereecken, N.J., Mant, J. & Schiestl, F.P. (2007). Population differentiation in female sex pheromone and male preferences in a solitary bee. *Behav. Ecol. Sociobiol.* **61**, 811–821.

Whittaker, R.J. & Fernández-Palacios, J.M. (2007). *Island biogeography – ecology, evolution, and conservation*. 2nd edn. Oxford: Oxford University Press.

Wilcox, T.P., Zwickl, D.J., Heath, T.A. & Hillis, D.M. (2002). Phylogenetic relationships of the dwarf boas and a comparison of Bayesian and bootstrap measures of phylogenetic support. *Mol. Phylogenet. Evol.* **25**, 361–371.

Williams, P.H. & Osborne, J.L. (2009). Bumblebee vulnerability and conservation world-wide. *Apidologie* **40**, 367–387.

Williams, P.H., An, J., Brown, M.J.F., Carolan, J.C., Goulson, D., Huang, J. & Ito, M. (2012a). Cryptic bumblebee species: consequences for conservation and the trade in greenhouse pollinators. *PLoS ONE* **7**, e32992.

Williams, P.H., Brown, M.J.F., Carolan, J.C., An, J., Goulson, D., Aytekin, A.M., Best, L.R., Byvaltsev, A.M., Cederberg, B., Dawson, R., Huang, J., Ito, M., Monfared, A., Raina, R.H., Schmid-Hempel, P., Sheffield, C.S., Šima, P. & Xie, Z. (2012b). Unveiling cryptic species of the bumblebee subgenus *Bombus s. str.* worldwide with COI barcodes (Hymenoptera: Apidae). *Syst. Biodivers.* **10**, 21–56.

Zhang, J., Kapli, P., Pavlidis, P. & Stamatakis, A. (2013). A general species delimitation method with applications to phylogenetic placements. *Bioinformatics* **29**, 2869–2876.

Zwickl, D.J. (2006). *Genetic algorithm approaches for the phylogenetic analysis of large biological sequence datasets under the maximum likelihood criteria*. D. Phil. Thesis, The University of Texas at AustinEditor, Austin, Texas.

Žáček, P., Prchalová-Hornákov, D., Tykva, R., Kindl, J., Vogel, H., Svatoš, A., Pichová, I. & Valterová, I. (2013). De novo biosynthesis of sexual pheromone in the labial gland of bumblebee males. *Chembiochem* **14**, 361–371.

Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Table S1. Table of sampling. Taxa, name of taxa; sample codes, sample labels used in analyses and supplementary tree; groups: groups of individuals (Corsica, mainland or out-group), COI and EF-1α, are the GenBank accession numbers for each sample.

Table S2. Results of the bGMYC analysis (pairwise table). Values are probability to be conspecific (1 = 100% of chance to be conspecific). When there is only one value, all individuals from the same taxa/populations have the same probability otherwise the probability range is provided.

Table S3. List of the identified compounds in cephalic labial glands secretion (CLGS) and CLGS data matrix (relative amounts of each compound) in *corsicola* in *jonghei*, in *perezi*, in *pereziellus*, in *renardi*, in *xanthopus*, in Corsican *barbutellus*, in Corsican *pascuorum* and their closely related allopatric parents. Unknown x, undetermined compounds; MW, molecular weight of compounds; IndVal results, indicator value of each compounds revealed by IndVal methods.

Appendix S1. Methodology: detailed genetic/chemical material and methods.

Appendix S2: Methodology - Detailed genetic and chemical material and methods

Insular system

Corsica (8680 km²) is a Mediterranean mountainous island located at 160 km from France, 12 km from Sardinia, 82 km from Italy, and nearly 50 km from the Island of Elba, 10 km distant from Italy. It is a well-known biodiversity hotspot that hosts a high diversity of endemic species (e.g. Médail & Quézel 1997; Blondel et al. 2010).

DNA preparation, amplification and sequencing

We used a QIAGEN DNeasy® Tissue Kit (Quiagen Inc., Valencia, CA) to extract total DNA. Legs were removed from the specimen, crushed in liquid nitrogen, and digested (four hours in proteinase K at 56°C). Voucher specimens and PCR products used in molecular investigation were deposited at the University of Mons (Belgium). We carried out polymerase chain reaction (PCR) amplifications with primer pair Jerry/Pat (Danforth 1999) for COI and F2-ForH/F2-RevH2 (Hines et al., 2006) for EF-1α. PCR amplifications were carried out by initial denaturing for three minutes at 94°C, 35 cycles of one minute denaturing at 94°C, one minute annealing at 51°C (COI) or 54°C (EF-1α), two minutes elongation at 72°C and a final extension for ten minutes at 72°C. Genes were sequenced with an ABI 3730XL sequencer (Applied Biosystems, Foster City, CA, USA). We sequenced both strands of each PCR product. We performed the consensus of both strands with CodonCode Aligner 3.0.1. We checked the bumblebee origin of each sequence with BLAST 2.2.20 (Zhang et al. 2000). We performed the alignment with MAFFT ver.6. (FFT-NS-2 algorithms, default parameters; Katoh et al. 2002) and edit the data matrix in Mesquite 2.75 (Maddison and Maddison, 2007). We performed translation to proteins (*Drosophila* mitochondrial DNA genetic code or Universal genetic code) with Mesquite.

Phylogenetic analyses and selection of the best fitting substitution models

We performed phylogenetic analyses to investigate the monophyly of bumblebee clades. We analyzed each gene independently with maximum likelihood (ML) and Bayesian (MB) methods. We rooted trees with basal species of the bumblebee tree (Cameron et al. 2007): *B. mendax* and *B. shaposhnikovi*.

We conducted ML analyses with GARLI 2.0 (Zwickl 2006). We partitioned each gene to explore the best substitution model: 1) EF-1α into two exons and one intron; 2) COI and each EF-1α exon by base position (1^{st}, 2^{nd} and 3^{rd}). We used the Akaike information criteria corrected for small sample sizes (Hurvich & Tsai 1989) to choose the best fitting substitution models with jModeltest (Posada 2008) for each dataset. The chosen models were: 1) For COI: TIM2+G (1^{st}), K81uf (2^{nd}), and TPM2uf+G (3^{rd}); 2) for EF-1α exon 1: TIM2ef (1^{st}), JC (2^{nd}), GTR+G (3^{rd}); EF-1α intron: SYM, EF-1α exon 2: TrN(1^{st}), JC (2^{nd}), TPM2(3^{rd}). We used a random starting tree and the automated stopping criterion (stop when the ln score remained constant for 20 000 consecutive generations). We performed ten independent runs in GARLI for each gene; the topology and −ln L were identical among replicates. We retained the highest likelihood of one of those runs. We evaluated statistical confidence in nodes with 10 000 non-parametric bootstrap replicates (Felsenstein 1985) using the automated stopping criteria set at 10 000 generations. More bootstrap replicates could not be performed because it would have required unpractical computing times.

We performed Bayesian analyses (MB) with Mr.Bayes 3.1.2 (Ronquist & Huelsenbeck 2003). The model selection process was the same as that for ML analysis. We substituted selected models which are not implemented in MrBayes by the closest overparameterized model (Huelsenbeck & Rannala 2004). The K81uf, TIM2, TPM2uf, and TrN substitution models were replaced by the GTR model while TIM2ef, TPM2 were replaced by the SYM model. We conserved the proportion of invariable sites and gamma distributed rates defined in jModeltest in all models. We carried out five independent analyses for each gene (100 million generations, four chains with mixed-models, default priors, saving trees every 100 generations). We stopped the analyses after checking convergence between runs using the average standard deviation of split frequencies and by plotting likelihood values across generations with Tracer 1.4 (Rambaut & Drummond 2007). We discarded the first ten million generations (100 000 first trees saved) as burn-in. The phylogeny and posterior probabilities were then estimated from the remaining trees and a majority-rule 50% consensus tree was constructed.

CLGS preparation and chemical analyses

We extracted the CLGS in 400µl *n*-hexane from dissected cephalic labial glands or entire cut heads (De Meulemeester et al. 2011). All samples were stored at -40°C prior to the analyses.

We determined the composition of CLGS by gas chromatography-mass spectrometry (GC/MS) on Finnigan Focus GC (Thermo) with a DB-5ms non-polar capillary column (5% phenyl (methyl) polysiloxane stationary phase; 30 m x 0.25 mm x 0.25 µm) coupled to Fisons MD 800 quadrupol mass analyser (Fisons) with 70 eV electron impact ionization. We used a splitless injection mode (220°C) and helium as carrier gas (one ml/min). The temperature program of the oven was set to 70°C for two minutes and then heated up at a rate of 10°C/min to 320°C. The temperature was then held at 320°C for five minutes. We identified compounds in Xcalibur™

with their mass spectra compared to those at National Institute of Standards and Technology library (NIST, U.S.A) with NIST MS Search 2.0. We determined the double bond positions i) from mass spectra of dimethyl disulphide adducts of unsaturated components (Francis, 1981) (reaction time: four hours) and ii) by chemical ionization with acetonitrile as a reaction gas (Oldham & Svatoš 1999). We analyzed the products by GC/MS with the same temperature program as for original extracts. An ion trap GC/MS instrument (Varian Saturn 2000) was used for chemical ionization.

We analyzed all samples with a gas chromatograph Shimadzu GC-2010 with a SLB-5ms non-polar capillary column (5% diphenyl/95% dimethyl siloxane; 30 m x 0.25 mm x 0.25 µm) and a flame ionization detector. The chromatographic conditions were the same as above. We quantified the peak areas of compounds in GCsolution Postrun (Shimadzu Corporation) with automatic peak detection and noise measurement. We calculated relative amounts (RA in %) of compounds in each sample by dividing the peak areas of compounds by the total area of compounds in each sample. We did not use any correction factor to calculate the RA of individual compounds. We discarded all compounds for which RA were recorded as less than 0.1% for all specimens (De Meulemeester et al. 2011). We elaborated the data matrix for each species with the relative proportion of each compound for each individual. We based the data matrix on the alignment of each compound between all samples performed with GCAligner 1.0 (Dellicour & Lecocq 2013).

Comparative Statistical Analyses

We performed statistical comparative analyses of the CLGS of each species groups in R (R Development Core Team 2013) to detected CLGS differentiations between insular and continental populations. We transformed data (log (x-1)) to reduce the great difference of abundance between highly and slightly concentrated compounds, and then standardized (mean = 0, standard deviation = 1) to reduce the sample concentration effect (De Meulemeester et al. 2011).

We compared the profile (transformed and standardized relative percentage of all compounds) between Corsicans and their nearest parents with principal component analyses (PCA; R-package MASS, Venables and Ripley, 2002). We assessed CLGS differentiations between Corsicans and continentals by performing multiple response permutation procedure (MRPP) (R-package vegan, Oksanen et al., 2011). The MRPP is a nonparametric, multivariate procedure that tests the null hypothesis of no difference between groups. MRPP has the advantage of not requiring distributional assumptions (such as multivariate normality and homogeneity of variances).

To determine compounds specific and regular to Corsican and continental groups (indicator compounds), we used the indicator value (IndVal) method (Dufrêne & Legendre 1997, De Meulemeester et al. 2011). The value given is the product of relative abundance and relative frequency of occurrence of a compound within a group. A high value is obtained when the compound is specific and regular to a particular group compared to the whole set of observations. We evaluated the statistical significance of a compound as an indicator at the 0.01 level with a randomization procedure.

Literature Cited

Blondel, J., J. Aronson, J. Y. Bodiou, and G. Boeuf. 2010. The Mediterranean region: biological diversity in space and time. Oxford University Press, New York, NY.

Cameron, S. A., H. M. Hines, and P. H. Williams. 2007. A comprehensive phylogeny of the bumble bees (Bombus). Biological Journal of the Linnean Society **91**:161–188.

Danforth, B. N. 1999. Phylogeny of the bee genus Lasioglossum (Hymenoptera: Halictidae) based on mitochondrial COI sequence data. Systematic Entomology **24**:377–393.

De Meulemeester, T., P. Gerbaux, M. Boulvin, A. Coppée, and P. Rasmont. 2011. A simplified protocol for bumble bee species identification by cephalic secretion analysis. Insectes Sociaux **58**:227–236.

Dellicour, S., and T. Lecocq. 2013. GCALIGNER 1.0: an aligment program to compute a multiple sample comparison data matrix from large eco-chemical datasets obtained by gas chromatography. Journal of Separation Science **36**:3206–3209.

Dufrêne, M., and P. Legendre. 1997. Species assemblages and indicator species: The need for a flexible asymmetrical approach. Ecological Monographs **67**:345–366.

Felsenstein, J. 1985. Phylogenies and the comparative method. The American Naturalist **125**:1–15.

Francis, G. W. 1981. Alkylthiolation for the determination of double-bond position in unsaturated fatty acid esters. Chemistry and Physics of Lipids **29**:369–374.

Hines, H. M., S. A. Cameron, and P. H. Williams. 2006. Molecular phylogeny of the bumble bee subgenus Pyrobombus (Hymenoptera : Apidae : Bombus) with insights into gene utility for lower-level analysis. Invertebrate Systematics **20**:289–303..

Huelsenbeck, J. P., and B. Rannala. 2004. Frequentist properties of bayesian posterior probabilities of phylogenetic trees under simple and complex substitution models. Systematic Biology **53**:904–913.

Hurvich, C. M., and C.-L. Tsai. 1989. Regression and time series model selection in small samples. Biometrika **76**:297–307.

Katoh, K., K. Misawa, K.-I. Kuma, and T. Miyata. 2002. MAFFT: A novel method for rapid multiple sequence alignment based on fast Fourier transform. Nucleic Acids Research **30**:3059–3066.

Maddison, W., and D. Maddison. 2007. Mesquite: A Modular System for Evolutionary Analysis.

Médail, F., and P. Quézel. 1997. Hot-spot analysis for conservation in the Mediterranean Basin. Ann Mo Bot Gard **84**:112–127.

Oksanen, F. J., G. Blanchet, R. Kindt, P. Legendre, P. R. Minchin, R. B. O'Hara, G. L. Simpson, P. Solymos, M. H. H. Stevens, and H. Wagner. 2011. Vegan: Community Ecology Package. Retrieved from http://cran.r-project.org/package=vegan.

Oldham, N. J., and A. Svatoš. 1999. Determination of the double bond position in functionalized monoenes by chemical ionization ion-trap mass spectrometry using acetonitrile as a reagent gas. Rapid Communications in Mass Spectrometry **13**:331–336..

Posada, D. 2008. jModelTest: Phylogenetic model averaging. Molecular Biology and Evolution **25**:1253–1256.

R Development Core Team. 2013. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. Retrieved from http://www.r-project.org/.

Rambaut, A., and A. J. Drummond. 2007. Tracer. Retrieved from Available from http://beast.bio.ed.ac.uk/Tracer..

Ronquist, F., and J. P. Huelsenbeck. 2003. MrBayes 3: Bayesian phylogenetic inference under mixed models. Bioinformatics **19**:1572–1574.

Venables, W. N., and B. D. Ripley. 2002. Modern Applied Statistics with S. Springer, New York, NY.

Zhang, Z., S. Schwartz, L. Wagner, and W. Miller. 2000. A greedy algorithm for aligning DNA sequences. Journal of Computational Biology **7**:203–214.

Zwickl, D. J. 2006. Genetic algorithm approaches for the phylogenetic analysis of large biological sequence datasets under the maximum likelihood criteria. The University of Texas at Austin, Austin, Texas.

Table S1. Table of sampling. Taxa: Name of taxa, Sample Codes: Sample labels used in analyses and supplementary tree, Groups: Groups of individuals (Corsica, mainland or outgroup), COI and EF-1α, are the GenBank accession numbers for each sample.

Taxa	Sample codes	Groups	Country	Lacality	collector	Latitude	Longitude	COI	EF1A
	RudC01	Corsica	France	L'Ospédale	T. Lecocq & A. Roelandts	41°05'25"N	09°06'51"E	JQ820577	JQ820983
	RudC02	Corsica	France	SalicAustriao	T. Lecocq & A. Roelandts	42°14'01"N	09°10'49"E	JQ820578	JQ820984
	RudC03	Corsica	France	Muraccio	T. Lecocq & A. Roelandts	42°06'05"N	09°06'37"E	JQ820579	JQ820985
	RudC04	Corsica	France	Ocagnano	T. Lecocq & A. Roelandts	42°16'55"N	09°15'57"E	JQ820580	JQ820986
	RudC05	Corsica	France	Sisco	T. Lecocq & A. Roelandts	42°29'41"N	09°15'37"E	JQ820581	JQ820987
	RudC06	Corsica	France	Guaitella	T. Lecocq & A. Roelandts	42°25'27"N	09°15'16"E	JQ820582	JQ820988
	RudC07	Corsica	France	Sisco	T. Lecocq & A. Roelandts	42°29'41"N	09°15'37"E	JQ820583	JQ820989
	RudC08	Corsica	France	San Michel	T. Lecocq & A. Roelandts	42°29'09"N	09°15'17"E	JQ820584	JQ820990
	RudC09	Corsica	France	Ghisoni	T. Lecocq & A. Roelandts	42°02'03"N	09°06'09"E	JQ820585	JQ820991
Bombus corsicola	**RudC10**	Corsica	France	Santa Lucia di Moriani	T. Lecocq & A. Roelandts	42°13'24"N	09°18'06"E	JQ820586	JQ820992
	RudC11	Corsica	France	Sisco	T. Lecocq & A. Roelandts	42°29'41"N	09°15'37"E	JQ820587	JQ820993
	RudC12	Corsica	France	Sisco	T. Lecocq & A. Roelandts	42°29'41"N	09°15'37"E	JQ820588	JQ820994
	RudC13	Corsica	France	Sisco	T. Lecocq & A. Roelandts	42°29'41"N	09°15'37"E	JQ820589	JQ820995
	RudC14	Corsica	France	Guaitella	T. Lecocq & A. Roelandts	42°25'27"N	09°15'16"E	JQ820590	JQ820996
	RudC15	Corsica	France	Guaitella	T. Lecocq & A. Roelandts	42°25'27"N	09°15'16"E	JQ820591	JQ820997
	RudC16	Corsica	France	Guaitella	T. Lecocq & A. Roelandts	42°25'27"N	09°15'16"E	JQ820592	JQ820998
	RudC17	Corsica	France	Sisco	T. Lecocq & A. Roelandts	42°29'41"N	09°15'37"E	JQ820593	JQ820999
	RudC18	Corsica	France	Sisco	T. Lecocq & A. Roelandts	42°29'41"N	09°15'37"E	JQ820594	JQ821000
	RudC19	Corsica	France	Sisco	T. Lecocq & A. Roelandts	42°29'41"N	09°15'37"E	JQ820595	JQ821001
	RudA01	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JQ820572	JQ820978
	RudA02	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JQ820573	JQ820979
Bombus ruderatus autumnalis	**RudA03**	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JQ820574	JQ820980
	RudA04	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JQ820575	JQ820981
	RudA05	Mainland (France)	France	Corbère	A. Coppée	42°39'35"N	02°40'10"E	JQ820576	JQ820982
	RudR01	Mainland (France)	France	Corbère	A. Coppée	42°39'39"N	02°40'39"E	JQ820596	JQ821002
	RudR02	Mainland (France)	France	Ille-sur-Têt	A. Coppée	42°40'40"N	02°38'01"E	JQ820597	JQ821003
	RudR03	Mainland (France)	France	Ille-sur-Têt	A. Coppée	42°40'40"N	02°38'01"E	JQ820598	JQ821004
	RudR04	Mainland (France)	France	Ille-sur-Têt	A. Coppée	42°40'40"N	02°38'01"E	JQ820599	JQ821005
	RudR05	Mainland (France)	France	Ille-sur-Têt	A. Coppée	42°40'40"N	02°38'01"E	JQ820600	JQ821006
	RudR06	Mainland (Italy)	Italy	L'Aquila	T. Lecocq & S. Dellicour	42°28'01"N	13°21'17"E	JQ820601	JQ821007
	RudR07	Mainland (Italy)	Italy	L'Aquila	T. Lecocq & S. Dellicour	42°28'01"N	13°21'17"E	JQ820602	JQ821008
	RudR08	Mainland (Italy)	Italy	L'Aquila	T. Lecocq & S. Dellicour	42°28'01"N	13°21'17"E	JQ820603	JQ821009
	RudR09	Mainland (Italy)	Italy	L'Aquila	T. Lecocq & S. Dellicour	42°28'01"N	13°21'17"E	JQ820604	JQ821010
Bombus ruderatus ruderatus	**RudR10**	Mainland (Italy)	Italy	L'Aquila	T. Lecocq & S. Dellicour	42°28'01"N	13°21'17"E	JQ820605	JQ821011
	RudR11	Mainland (France)	France	Ille-sur-Têt	A. Coppée	42°40'40"N	02°38'01"E	JQ820606	JQ821012
	RudR12	Mainland (France)	France	Ille-sur-Têt	A. Coppée	42°40'40"N	02°38'01"E	JQ820607	JQ821013
	RudR13	Mainland (France)	France	Corbère	A. Coppée	42°39'39"N	02°40'39"E	JQ820608	JQ821014
	RudR14	Mainland (France)	France	Ille-sur-Têt	A. Coppée	42°40'40"N	02°38'01"E	JQ820609	JQ821015
	RudR15	Mainland (France)	France	Ille-sur-Têt	A. Coppée	42°40'40"N	02°38'01"E	JQ820610	JQ821016
	RudR16	Mainland (France)	France	Ille-sur-Têt	A. Coppée	42°40'40"N	02°38'01"E	JQ820611	JQ821017
	RudR17	Mainland (France)	France	Milas	A. Coppée	42°42'47"N	02°38'01"E	JQ820612	JQ821018
	RudR18	Mainland (Italy)	Italy	L'Aquila	T. Lecocq & S. Dellicour	42°28'01"N	13°21'17"E	JQ820613	JQ821019
	RudR19	Mainland (Italy)	Italy	L'Aquila	T. Lecocq & S. Dellicour	42°28'01"N	13°21'17"E	JQ820614	JQ821020
	RudR20	Mainland (Italy)	Italy	L'Aquila	T. Lecocq & S. Dellicour	42°28'01"N	13°21'17"E	JQ820615	JQ821021
	Argi01	Outgroup	Italy	Pavia	M. Cornalba	45.21108°N	9.170244°E	KF468684	JQ820907
Bombus argillaceus	Argi02	Outgroup	Italy	Pavia	M. Cornalba	45.21108°N	9.170244°E	-	JQ820907
	Argi03	Outgroup	Italy	Pavia	M. Cornalba	45.21108°N	9.170244°E	-	JQ820907
	Argi04	Outgroup	Italy	Pavia	M. Cornalba	45.21108°N	9.170244°E	-	JQ820907
	HorJ01	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468689	JQ820911
	HorJ02	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468689	JQ820912
	HorJ03	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468690	JQ820912
	HorJ04	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468690	JQ820912
	HorJ05	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468689	JQ820912
	HorJ06	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468689	JQ820912
Bombus jonghei	**HorJ07**	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468690	JQ820912
	HorJ08	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	-	-
	HorJ09	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	-	-
	HorJ10	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	-	-

Bombus hortorum hortorum	**HorJ11**	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42''N	9°11'27''E	-	-
	HorJ12	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42''N	9°11'27''E	-	-
	HorJ13	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42''N	9°11'27''E	-	-
	HorJ14	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42''N	9°11'27''E	-	-
	HorH01	Mainland (Sweden)	Sweden	Uppsala	P. Rasmont	59°51'05''N	17°37'40''E	JQ820505	JQ820909
	HorH02	Mainland (Sweden)	Sweden	Uppsala	P. Rasmont	59°51'05''N	17°37'40''E	JQ820506	JQ820910
	HorH03	Mainland (Sweden)	Sweden	Uppsala	P. Rasmont	59°51'05''N	17°37'40''E	JQ820506	JQ820910
	HorH04	Mainland (Belgium)	Belgium	Petite Taille	T. Lecocq	50°14'31''N	5°45'04''E	JQ820506	JQ820910
	HorH05	Mainland (Belgium)	Belgium	Petite Taille	T. Lecocq	50°14'31''N	5°45'04''E	JQ820506	JQ820910
	HorH06	Mainland (Belgium)	Belgium	Petite Taille	T. Lecocq	50°14'31''N	5°45'04''E	JQ820506	JQ820910
	HorH07	Mainland (Czech R.)	Czech Republic	Kolin	T. Lecocq & S. Dellicour	50°03'22''N	15°12'30''E	JQ820506	JQ820910
	HorH08	Mainland (Czech R.)	Czech Republic	Kolin	T. Lecocq & S. Dellicour	50°03'22''N	15°12'30''E	JQ820506	JQ820910
	HorH09	Mainland (Czech R.)	Czech Republic	Kolin	T. Lecocq & S. Dellicour	50°03'22''N	15°12'30''E	JQ820506	JQ820910
	HorH10	Mainland (Czech R.)	Czech Republic	Kolin	T. Lecocq & S. Dellicour	50°03'22''N	15°12'30''E	JQ820506	JQ820910
	HorH11	Mainland (Czech R.)	Czech Republic	Kolin	T. Lecocq & S. Dellicour	50°03'22''N	15°12'30''E	JQ820506	JQ820910
	HorH12	Mainland (Italy)	Italy	S. Margherita Staffora	M. Cornalba	44.715806°N	09.208744°E	JQ820506	JQ820910
	HorH13	Mainland (Italy)	Italy	S. Margherita Staffora	M. Cornalba	44.715806°N	09.208744°E	JQ820506	JQ820910
	HorH14	Mainland (Italy)	Italy	S. Margherita Staffora	M. Cornalba	44.715806°N	09.208744°E	JQ820506	JQ820910
	HorH15	Mainland (Italy)	Italy	S. Margherita Staffora	M. Cornalba	44.715806°N	09.208744°E	JQ820506	JQ820910
	HorH16	Scotland	United Kingdom	Wick	P. Rasmont	58°27'27''N	-3°13'44''E	-	-
	HorH17	Mainland (Germany)	Greece	Dörpel	P. Rasmont	53°08'53''N	10°01'23''E	-	-
	HorH18	Mainland (Austria)	Austria	Mühl	D. Michez & S. Dellicour	47°30'05''N	10°44'10''E	-	-
	HorH19	Mainland (Austria)	Austria	Mühl	D. Michez & S. Dellicour	47°30'05''N	10°44'10''E	-	-
	HorH20	Mainland (Netherlands)	Netherlands	Leiden	T. Lecocq	52°11'14''N	04°32'48''E	-	-
	HorH21	Mainland (Czech R.)	Czech Republic	Kolin	T. Lecocq & S. Dellicour	50°03'22''N	15°12'30''E	-	-
	HorH22	Mainland (Slovenia)	Slovenia	Studenčice	T. Lecocq & S. Dellicour	46°22'20''N	14°09'27''E	-	-
	HorH23	Mainland (Slovenia)	Slovenia	Studenčice	T. Lecocq & S. Dellicour	46°22'20''N	14°09'27''E	-	-
	HorH24	Mainland (Poland)	Poland	Stary Gieląd	T. Lecocq & S. Lambert	53°51'34''N	21°08'20''E	-	-
	HorH25	Mainland (Italy)	Italy	S. Margherita Staffora	M. Cornalba	44.715806°N	09.208744°E	-	-
	HorH26	Mainland (France)	France	Nantes	A. Lachaud	47°12'43''N	-01°32'46''E	-	-
	HorH27	Mainland (France)	France	Nantes	A. Lachaud	47°12'43''N	-01°32'46''E	-	-
Bombus hortorum asturiensis	**HorA01**	Mainland (Spain)	Spain	El Puerto	E. Ploquin			-	-
Bombus gerstaeckeri	Gers01	Outgroup	-	-	-	-	-	-	DQ788195
Bombus portchinsky	Port01	Outgroup	-	-	-	-	-	-	DQ788259
Bombus perezi	**Pere01**	Corsica	France	Salicato	T. Lecocq & A. Coppée	42°14'01''N	09°10'49''E	JQ820553	JQ820959
	Pere02	Corsica	France	Haut Asco	T. Lecocq & A. Roelandts	42°14'30''N	08°33'21''E	JQ820554	JQ820960
	Pere03	Corsica	France	Haut Asco	T. Lecocq & A. Roelandts	42°14'30''N	08°33'21''E	JQ820555	JQ820961
	Pere04	Corsica	France	Haut Asco	T. Lecocq & A. Roelandts	42°14'30''N	08°33'21''E	JQ820556	JQ820962
	Pere05	Corsica	France	Morosaglia	T. Lecocq & A. Coppée	42°15'10''N	09°11'41''E	JQ820557	JQ820963
	Pere06	Corsica	France	Salicato	T. Lecocq & A. Coppée	42°14'01''N	09°10'49''E	JQ820558	JQ820964
	Pere07	Corsica	France	Salicato	T. Lecocq & A. Coppée	42°14'01''N	09°10'49''E	JQ820559	JQ820965
	Pere08	Corsica	France	Salicato	T. Lecocq & A. Coppée	42°14'01''N	09°10'49''E	JQ820560	JQ820966
	Pere09	Corsica	France	Salicato	T. Lecocq & A. Coppée	42°14'01''N	09°10'49''E	JQ820561	JQ820967
	Pere10	Corsica	France	Salicato	T. Lecocq & A. Coppée	42°14'01''N	09°10'49''E	JQ820562	JQ820968
	Pere11	Corsica	France	Salicato	T. Lecocq & A. Coppée	42°14'01''N	09°10'49''E	JQ820563	JQ820969
	Pere12	Corsica	France	Venaco	T. Lecocq & A. Coppée	42°06'53''N	09°04'20''E	JQ820564	JQ820970
	Pere13	Corsica	France	Haut Asco	T. Lecocq & A. Coppée	42°14'30''N	08°33'21''E	JQ820565	JQ820971
	Pere14	Corsica	France	Salicato	T. Lecocq & A. Coppée	42°14'01''N	09°10'49''E	JQ820566	JQ820972
	Pere15	Corsica	France	Haut Asco	T. Lecocq & A. Roelandts	42°14'30''N	08°33'21''E	JQ820567	JQ820973
	Pere16	Corsica	France	Haut Asco	T. Lecocq & A. Roelandts	42°14'30''N	08°33'21''E	JQ820568	JQ820974
	Pere17	Corsica	France	Salicato	T. Lecocq & A. Roelandts	42°14'01''N	09°10'49''E	JQ820569	JQ820975
	Pere18	Corsica	France	Haut Asco	T. Lecocq & A. Roelandts	42°14'30''N	08°33'21''E	JQ820570	JQ820976
	Pere19	Corsica	France	Haut Asco	T. Lecocq & A. Roelandts	42°14'30''N	08°33'21''E	JQ820571	JQ820977
	Vest01	Mainland (France)	France	Paris	P. Rasmont	48°50'37''N	02°21'35''E	JQ820675	JQ821082
	Vest02	Mainland (France)	France	Paris	P. Rasmont	48°50'37''N	02°21'35''E	JQ820676	JQ821083
	Vest03	Mainland (France)	France	Paris	P. Rasmont	48°50'37''N	02°21'35''E	JQ820677	JQ821084
	Vest04	Mainland (France)	France	Paris	P. Rasmont	48°50'37''N	02°21'35''E	JQ820678	JQ821085
	Vest05	Mainland (France)	France	Paris	P. Rasmont	48°50'37''N	02°21'35''E	JQ820679	JQ821086
	Vest06	Mainland (France)	France	Escalles	T. Lecocq & S. Lambert	50°55'36''N	01°42'45''E	JQ820680	JQ821087
	Vest07	Mainland (Czech R.)	Czech Republic	Karlàtijn	T. Lecocq & S. Dellicour	49°50'03''N	14°12'25''E	JQ820681	JQ821088
	Vest08	Mainland (Czech R.)	Czech Republic	Praha	T. Lecocq & S. Dellicour	50°06'18''N	14°25'00''E	JQ820682	JQ821089
	Vest09	Mainland (Slovenia)	Slovenia	Studenčice	T. Lecocq & S. Dellicour	46°22'20''N	14°09'27''E	JQ820683	JQ821090
	Vest10	Mainland (Denmark)	Denmark	Stensved	P. Rasmont	54°58'25''N	12°01'21''E	JQ820684	JQ821091
	Vest11	Mainland (Sweden)	Sweden	Dybäck	P. Rasmont	55°24'14''N	13°31'27''E	JQ820685	JQ821092

	Vest12	Mainland (Italy)	Italy	Pavia	T. Lecocq & S. Dellicour	45°12'40"N	09°10'13"E	JQ820686	JQ821093
	Vest13	Mainland (Italy)	Italy	Pavia	T. Lecocq & S. Dellicour	45°12'40"N	09°10'13"E	JQ820687	JQ821094
	Vest14	Mainland (Germany)	Germany	Eichenbarleben	T. Lecocq & S. Lambert	52°09'60"N	11°25'02"E	JQ820688	JQ821095
Bombus vestalis	**Vest15**	Mainland (Germany)	Germany	Eichenbarleben	T. Lecocq & S. Lambert	52°09'60"N	11°25'02"E	JQ820689	JQ821096
	Vest16	Mainland (Belgium)	Belgium	Mons	P. Lhomme	50°27'42"N	03°57'10"E	JQ820690	JQ821097
	Vest17	Mainland (Roumania)	Romania	Praid	T. Lecocq & S. Dellicour	46°39'46"N	25°18'13"E	JQ820691	JQ821098
	Vest18	Mainland (Roumania)	Romania	Praid	T. Lecocq & S. Dellicour	46°39'46"N	25°18'13"E	JQ820692	JQ821099
	Vest19	Mainland (Roumania)	Romania	Praid	T. Lecocq & S. Dellicour	46°39'46"N	25°18'13"E	JQ820693	JQ821100
	Vest20	Mainland (France)	France	Gavarnie	T. Lecocq & S. Dellicour	42°42'43"N	-00°00'27"E	JQ820694	JQ821101
	Vest21	Mainland (France)	France	Gavarnie	T. Lecocq & S. Dellicour	42°42'43"N	-00°00'27"E	JQ820695	JQ821102
	Vest22	Mainland (Poland)	Poland	Kwiedzina	T. Lecocq & S. Lambert	54°03'12"N	21°27'14"E	JQ820696	JQ821103
	Vest23	Mainland (Poland)	Poland	Kwiedzina	T. Lecocq & S. Lambert	54°03'12"N	21°27'14"E	JQ820697	JQ821104
	Vest24	Mainland (Netherlands)	Netherlands	Leiden	T. Lecocq	52°16'49"N	04°34'27"E	JQ820698	JQ821105
	Vest25	Mainland (Belgium)	Belgium	Mons	P. Lhomme	50°27'42"N	03°57'10"E	JQ820699	JQ821106
	Vest26	Mainland (France)	France	Ablon	P. Lhomme	49°24'48"N	00°16'23"E	JQ820700	JQ821107
	Vest27	Mainland (Belgium)	Belgium	Mons	P. Lhomme	50°27'42"N	03°57'10"E	JQ820701	JQ821108
	Vest28	Mainland (Belgium)	Belgium	Mons	P. Lhomme	50°27'42"N	03°57'10"E	JQ820702	JQ821109
	Vest29	Mainland (Belgium)	Belgium	Mons	P. Lhomme	50°27'42"N	03°57'10"E	JQ820703	JQ821110
	Bohe01	Outgroup	France	Nyer	P. Lhomme	42°30'06"N	02°19'00"E	JQ820504	JQ820908
	Bohe02	Outgroup	Belgium	Fraiture	P. Lhomme	50°14'58"N	5°44'26"E	JQ820504	JF699173
Bombus bohemicus	Bohe03	Outgroup	Belgium	Fraiture	P. Lhomme	50°14'58"N	5°44'26"E	JQ820504	JQ820908
	Bohe04	Outgroup	Belgium	Houffalize	P. Lhomme	50°07'41"N	5°47'59"E	JQ820504	JQ820908
	Bohe05	Outgroup	Belgium	Houffalize	P. Lhomme	50°07'41"N	5°47'59"E	KF468687	JF699173
	Barb01	Corsica	France	Evisa	T. Lecocq & A. Coppée	42°17'25"N	08°52'40"E	JF699189	JF699175
	Barb02	Corsica	France	Evisa	T. Lecocq & A. Coppée	42°17'25"N	08°52'40"E	JF699189	JF699175
	Barb03	Corsica	France	Evisa	T. Lecocq & A. Coppée	42°17'25"N	08°52'40"E	JF699189	JF699175
	Barb04	Mainland (Turkey)	Turkey	Kayseri	M. Terzo	38°28'36"N	35°30'06"E	JF699190	JF699176
Bombus barbutellus	Barb05	Mainland (Turkey)	Turkey	Erzincan	T. De Meulemeester	39°52'06"N	39°33'56"E	JF699193	JF699179
	Barb06	Mainland (Turkey)	Turkey	Erzincan	T. De Meulemeester	39°52'06"N	39°33'56"E	JF699193	JF699179
	Barb07	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JF699192	JF699178
	Barb08	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JF699192	JF699178
	Barb09	Mainland (Sweden)	Sweden	Uppsala	P. Rasmont	59°51'15"N	17°39'14"E	JF699185	JF699171
Bombus ashtoni	Asht01	Outgroup	-	-	-	-	-	-	AF492924
	Perl01	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468695	KF468702
	Perl02	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468695	KF468702
	Perl03	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468695	KF468702
	Perl04	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468695	KF468702
Bombus pereziellus	**Perl05**	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468695	KF468702
	Perl06	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468695	KF468702
	Perl07	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	KF468695	KF468702
	Perl08	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	-	-
	Perl09	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	-	-
	Perl10	Corsica	France	Palneca	T. Lecocq & R. de Jonghe	42°42'42"N	9°11'27"E	-	-
	MusM01	Mainland (France)	France	Corbère	M. Terzo	42°39'34"N	02°40'07"E	KF468691	KF468699
	MusM02	Mainland (Sweden)	Sweden	Mossbystrand	P. Rasmont	55°25'10"N	13°38'55"E	KF468692	KF468699
Bombus muscorum muscorum	**MusM03**	Mainland (Poland)	Poland	Wójtowo	T. Lecocq & S. Lambert	53°47'11"N	20°35'33"E	KF468691	KF468699
	MusM04	Mainland (Siberia)	Russia	Ust'-Ordinskiy	T. De Meulemeester & D. Michez	52.91444°N	105.07499°E	KF468692	KF468699
	MusM05	Ireland	Ireland	Ennis	T. De Meulemeester	52°51'37"N	-9°02'12"E	KF468691	KF468699
	MusM06	Mainland (Sweden)	Sweden	Mossbystrand	P. Rasmont	55°25'10"N		KF468692	KF468699
	MusL01	Mainland (Norway)	Norway	Flatanger	P. Rasmont	64°28'11"N	10°43'16"E	KF468685	KF468696
	MusL02	Mainland (Norway)	Norway	Flatanger	P. Rasmont	64°28'11"N	10°43'16"E	KF468685	KF468696
Bombus muscorum liepetterseni	**MusL03**	Mainland (Norway)	Norway	Flatanger	P. Rasmont	64°28'11"N	10°43'16"E	KF468685	KF468696
	MusL04	Mainland (Norway)	Norway	Flatanger	P. Rasmont	64°28'11"N	10°43'16"E	KF468685	KF468696
	MusL05	Mainland (Norway)	Norway	Flatanger	P. Rasmont	64°28'11"N	10°43'16"E	KF468685	KF468696
	MusL06	Mainland (Norway)	Norway	Flatanger	P. Rasmont	64°28'11"N	10°43'16"E	KF468685	KF468696
Bombus muscorum allenellus	**MusA01**	Aran island	Ireland	Inishmore	T. De Meulemeester	53°7'42"N	-9°43'54"E	KF468686	KF468697
Bombus filchnerae	Filc01	Outgroup	Russia	Mondy	T. De Meulemeester & D. Michez	51.68416°N	100.99333°E	KF468688	KF468698
	PasM01	Corsica	France	Muraccio	T. Lecocq & A. Roelandts	45°25'27"N	9°15'16"E	KF468693	KF468701
	PasM02	Corsica	France	Muraccio	T. Lecocq & A. Roelandts	45°25'27"N	9°15'16"E	KF468693	KF468701
Bombus pascuorum melleofacies	PasM03	Corsica	France	Muraccio	T. Lecocq & A. Roelandts	45°25'27"N	9°15'16"E	KF468693	KF468701
	PasM04	Corsica	France	Muraccio	T. Lecocq & A. Roelandts	45°25'27"N	9°15'16"E	KF468693	KF468701
	PasM05	Corsica	France	Muraccio	T. Lecocq & A. Roelandts	45°25'27"N	9°15'16"E	KF468693	KF468701
	PasI01	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	6°18'33"E	KF468694	KF468701
Bombus pascuorum intermedius	PasI02	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	6°18'33"E	KF468693	KF468701

	Pasl03	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	6°18'33"E	KF468694	KF468701
	PasM06	Mainland (Italy)	Italy	Torre d'Isola	M. Cornalba	45°13'37"N	9°02'56"E	KF468694	KF468701
	PasM07	Mainland (Italy)	Italy	Torre d'Isola	M. Cornalba	45°13'37"N	9°02'56"E	KF468693	KF468701
	PasM08	Mainland (Italy)	Italy	Torre d'Isola	M. Cornalba	45°13'37"N	9°02'56"E	KF468693	KF468701
Bombus pascuorum melleofacies	PasM09	Mainland (Italy)	Italy	Torre d'Isola	M. Cornalba	45°13'37"N	9°02'56"E	KF468693	KF468701
	PasM10	Mainland (Italy)	Italy	Cellara	T. Lecocq & S. Lambert	39°13'06"N	16°20'24"E	KF468693	KF468701
	PasM11	Mainland (Italy)	Italy	Cellara	T. Lecocq & S. Lambert	39°13'06"N	16°20'24"E	KF468693	KF468701
	PasM12	Mainland (Italy)	Italy	Cellara	T. Lecocq & S. Lambert	39°13'06"N	16°20'24"E	KF468693	KF468701
	LucR01	Corsica	France	Venaco	T. Lecocq & A. Coppée	42°06'53"N	09°04'20"E	JQ820533	JQ820939
	LucR02	Corsica	France	Zicavo	T. Lecocq & A. Coppée	41°31'18"N	09°04'17"E	JQ820534	JQ820940
	LucR03	Corsica	France	Zicavo	T. Lecocq & A. Coppée	41°31'27"N	09°05'07"E	JQ820535	JQ820941
	LucR04	Corsica	France	Corte	T. Lecocq & A. Coppée	42°10'54"N	09°05'06"E	JQ820536	JQ820942
	LucR05	Corsica	France	Venaco	T. Lecocq & A. Coppée	42°06'53"N	09°04'20"E	JQ820537	JQ820943
	LucR06	Corsica	France	Muraccio	T. Lecocq & A. Coppée	42°06'05"N	09°06'37"E	JQ820538	JQ820944
	LucR07	Corsica	France	Venaco	T. Lecocq & A. Coppée	42°06'58"N	09°03'54"E	JQ820539	JQ820945
	LucR08	Corsica	France	Zicavo	T. Lecocq & A. Coppée	41°31'27"N	09°05'07"E	JQ820540	JQ820946
Bombus renardi	**LucR09**	Corsica	France	Muraccio	T. Lecocq & A. Coppée	42°06'05"N	09°06'37"E	JQ820541	JQ820947
	LucR10	Corsica	France	Zicavo	T. Lecocq & A. Coppée	42°58'28"N	09°11'03"E	JQ820542	JQ820948
	LucR11	Corsica	France	Venaco	T. Lecocq & A. Coppée	42°06'53"N	09°04'20"E	JQ820543	JQ820949
	LucR12	Corsica	France	Morosaglia	T. Lecocq & A. Coppée	42°25'15"N	09°19'25"E	JQ820544	JQ820950
	LucR13	Corsica	France	Morosaglia	T. Lecocq & A. Coppée	42°25'15"N	09°19'25"E	JQ820545	JQ820951
	LucR14	Corsica	France	L'Ospédale	T. Lecocq & A. Coppée	41°40'21"N	09°12'28"E	JQ820546	JQ820952
	LucR15	Corsica	France	Haut Asco	T. Lecocq & A. Coppée	42°24'17"N	08°55'57"E	JQ820547	JQ820953
	LucR16	Corsica	France	Haut Asco	T. Lecocq & A. Coppée	42°24'17"N	08°55'57"E	JQ820548	JQ820954
	LucR17	Corsica	France	Morosaglia	T. Lecocq & A. Coppée	42°25'15"N	09°19'25"E	JQ820549	JQ820955
	LucR18	Corsica	France	Muraccio	T. Lecocq & A. Coppée	42°06'05"N	09°06'37"E	JQ820550	JQ820956
	LucL01	Mainland (Belgium)	Belgium	Mesvin	T. Lecocq & S. Lambert	50°25'45"N	03°58'04"E	JQ820509	JQ820915
	LucL02	Mainland (Poland)	Poland	Wójtowo	T. Lecocq & S. Lambert	53°47'11"N	20°35'34"E	JQ820510	JQ820916
	LucL03	Mainland (Sweden)	Sweden	Uppsala	P. Rasmont	59°51'44"N	17°38'01"E	JQ820511	JQ820917
	LucL04	Mainland (Czech R	Czech Republic	Karlàtijn	T. Lecocq & S. Dellicour	49°50'03"N	14°12'25"E	JQ820512	JQ820918
	LucL05	Mainland (Czech R)	Czech Republic	Karlàtijn	T. Lecocq & S. Dellicour	49°50'03"N	14°12'25"E	JQ820513	JQ820919
	LucL06	Mainland (Hungary)	Hungary	Pilisszentlászló	T. Lecocq & S. Dellicour	47°43'40"N	18°58'06"E	JQ820514	JQ820920
	LucL07	Mainland (Roumania)	Romania	Curtea de Arges	T. Lecocq & S. Dellicour	45°27'09"N	24°37'24"E	JQ820515	JQ820921
	LucL08	Mainland (Poland)	Poland	Wójtowo	T. Lecocq & S. Lambert	53°47'11"N	20°35'34"E	JQ820516	JQ820922
	LucL09	Mainland (Italy)	Italy	Portogruaro	T. Lecocq & S. Dellicour	45°46'32"N	12°51'22"E	JQ820517	JQ820923
	LucL10	Mainland (Slovakia)	Slovakia	Burda	T. Lecocq & S. Dellicour	47°49'57"N	18°44'26"E	JQ820518	JQ820924
	LucL11	Mainland (France)	France	EgAustria	D. Michez & S. Dellicour	42°30'26"N	02°01'07"E	JQ820519	JQ820925
Bombus lucorum	**LucL12**	Mainland (France)	France	EgAustria	D. Michez & S. Dellicour	42°30'26"N	02°01'07"E	JQ820520	JQ820926
	LucL13	Mainland (France)	France	Escalles	T. Lecocq & S. Lambert	50°55'36"N	01°42'45"E	JQ820521	JQ820927
	LucL14	Mainland (Germany)	Germany	Münster	P. Rasmont	51°56'27"N	07°33'03"E	JQ820522	JQ820928
	LucL15	Mainland (Denmark)	Denmark	Stensved	P. Rasmont	54°58'25"N	12°01'21"E	JQ820523	JQ820929
	LucL16	Mainland (Sweden)	Sweden	Uppsala	P. Rasmont	59°51'44"N	17°38'01"E	JQ820524	JQ820930
	LucL17	Mainland (Sweden)	Sweden	Uppsala	P. Rasmont	59°51'05"N	17°37'40"E	JQ820525	JQ820931
	LucL18	Mainland (Netherlands)	Netherlands	Leiden	T. Lecocq	52°16'49"N	4°34'27"E	JQ820526	JQ820932
	LucL19	Mainland (Italy)	Italy	Castelnuovo di Garfagnana	T. Lecocq & S. Dellicour	44°05'35"N	10°26'49"E	JQ820527	JQ820933
	LucL20	Mainland (Roumania)	Romania	Curtea de Arges	T. Lecocq & S. Dellicour	45°27'09"N	24°37'24"E	JQ820528	JQ820934
	LucL21	Mainland (Belgium)	Belgium	Mesvin	T. Lecocq & S. Lambert	50°25'45"N	03°58'04"E	JQ820529	JQ820935
	LucL22	Mainland (Belgium)	Belgium	Berismenil	T. Lecocq & S. Lambert	50°10'44"N	05°38'10"E	JQ820530	JQ820936
	LucL23	Mainland (France)	France	Escalles	T. Lecocq & S. Lambert	50°55'36"N	01°42'45"E	JQ820531	JQ820937
	LucL24	Mainland (Belgium)	Belgium	Regnié	T. Lecocq	50°15'02"N	05°46'57"E	JQ820532	JQ820938
Bombus affinis	Affi01	Outgroup	-	-	-	-	-	-	JQ820906
Bombus hypocrita	Hypo01	Outgroup	XX	Commercial samples from Biobest	T. De Meulemeester	-	-	JQ820507	JQ820913
	TerX01	Corsica	France	Ghisoni	T. Lecocq & A. Coppée	42°03'02"N	09°06'55"E	JQ820656	JQ821063
	TerX02	Corsica	France	Morosaglia	T. Lecocq & A. Coppée	42°15'10"N	09°11'41"E	JQ820657	JQ821064
	TerX03	Corsica	France	Zolena	T. Lecocq & A. Coppée	42°08'37"N	09°14'08"E	JQ820658	JQ821065
	TerX04	Corsica	France	Evisa	T. Lecocq & A. Coppée	42°10'21"N	08°31'26"E	JQ820659	JQ821066
	TerX05	Corsica	France	Evisa	T. Lecocq & A. Coppée	42°10'21"N	08°31'26"E	JQ820660	JQ821067
	TerX06	Corsica	France	Venaco	T. Lecocq & A. Coppée	42°06' 53"N	09°04'20"E	JQ820661	JQ821068
	TerX07	Corsica	France	Zicavo	T. Lecocq & A. Coppée	41°31'18"N	09°04'18"E	JQ820662	JQ821069
	TerX08	Corsica	France	Muraccio	T. Lecocq & A. Coppée	42°06'05"N	09°06'37"E	JQ820663	JQ821070
	TerX09	Corsica	France	Venaco	T. Lecocq & A. Coppée	42°06'58"N	09°03'54"E	JQ820664	JQ821071
Bombus xanthopus	**TerX10**	Corsica	France	Evisa	T. Lecocq & A. Coppée	42°10'21"N	08°31'26"E	JQ820665	JQ821072
	TerX11	Corsica	France	Evisa	T. Lecocq & A. Coppée	42°10'21"N	08°31'26"E	JQ820666	JQ821073
	TerX12	Corsica	France	Venaco	T. Lecocq & A. Coppée	42°06'53"N	09°04'20"E	JQ820667	JQ821074
	TerX13	Corsica	France	Zicavo	T. Lecocq & A. Coppée	41°31'18"N	09°04'18"E	JQ820668	JQ821075

	TerX14	Corsica	France	Muraccio	T. Lecocq & A. Coppée	42°06'05"N	09°06'37"E	JQ820669	JQ821076
	TerX15	Corsica	France	Venaco	T. Lecocq & A. Coppée	42°06'58"N	09°03'54"E	JQ820670	JQ821077
	TerX16	Corsica	France	Ghisoni	T. Lecocq & A. Coppée	42°03'02"N	09°06'55"E	JQ820671	JQ821078
	TerX17	Corsica	France	Evisa	T. Lecocq & A. Coppée	42°10'21"N	08°31'26"E	JQ820672	JQ821079
	TerX18	Corsica	France	Zolena	T. Lecocq & A. Coppée	42°08'37"N	09°14'08"E	JQ820673	JQ821080
	TerX19	Corsica	France	Evisa	T. Lecocq & A. Coppée	42°10'21"N	08°31'26"E	JQ820674	JQ821081
	TerD01	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JQ820618	JQ821025
	TerD02	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JQ820619	JQ821026
	TerD03	Mainland (Greece)	Greece	Rhodes	M. Terzo	36°11'09"N	27°52'45"E	JQ820620	JQ821027
	TerD04	Mainland (Greece)	Greece	Rhodes	M. Terzo	36°11'09"N	27°52'45"E	JQ820621	JQ821028
	TerD05	Mainland (Greece)	Greece	Rhodes	M. Terzo	36°11'09"N	27°52'45"E	JQ820622	JQ821029
Bombus terrestris dalmatinus	**TerD06**	Mainland (Greece)	Greece	Rhodes	M. Terzo	36°11'09"N	27°52'45"E	JQ820623	JQ821030
	TerD07	Commercial C.	XX	Commercial samples from Biobest	A. Coppée	-	-	JQ820624	JQ821031
	TerD08	Commercial C.	XX	Commercial samples from Biobest	A. Coppée	-	-	JQ820625	JQ821032
	TerD09	Commercial C.	XX	Commercial samples from Biobest	A. Coppée	-	-	JQ820626	JQ821033
	TerD10	Mainland (Roumania)	Romania	Praid	T. Lecocq & S. Dellicour	46°34'16"N	25°11'10"E	JQ820627	JQ821034
	TerD11	Mainland (Roumania)	Romania	Praid	T. Lecocq & S. Dellicour	46°34'16"N	25°11'10"E	JQ820628	JQ821035
	TerL01	Mainland (France)	France	Dorres	A. Coppée	42°28'51"N	01°55'25"E	JQ820629	JQ821036
	TerL02	Mainland (France)	France	Dorres	A. Coppée	42°28'51"N	01°55'25"E	JQ820630	JQ821037
	TerL03	Mainland (France)	France	Dorres	A. Coppée	42°28'51"N	01°55'25"E	JQ820631	JQ821038
	TerL04	Mainland (France)	France	Nohèdes	A. Coppée	42°37'53"N	02°13'46"E	JQ820632	JQ821039
Bombus terrestris lusitanicus	**TerL05**	Mainland (France)	France	Eyne	M. Terzo	42°29'18"N	02°05'05"E	JQ820633	JQ821040
	TerL06	Mainland (France)	France	Dorres	T. De Meulemeester	42°28'51"N	01°55'25"E	JQ820634	JQ821041
	TerL07	Mainland (France)	France	Dorres	T. De Meulemeester	42°28'51"N	01°55'25"E	JQ820635	JQ821042
	TerL08	Mainland (France)	France	Dorres	T. De Meulemeester	42°28'51"N	01°55'25"E	JQ820636	JQ821043
	TerL09	Mainland (France)	France	Err	M. Terzo	42°15'03"N	02°01'52"E	JQ820637	JQ821044
	TerS01	Sardinia	Italy	Luogo Santo	N. Rain	41°01'00"N	09°12'00"E	JQ820638	JQ821045
	TerS02	Sardinia	Italy	Biancareddu	N. Rain	40°48'07"N	08°11'47"E	JQ820639	JQ821046
	TerS03	Sardinia	Italy	Luogo Santo	N. Rain	41°01'00"N	09°12'00"E	JQ820640	JQ821047
Bombus terrestris sassaricus	**TerS04**	Sardinia	Italy	Luogo Santo	N. Rain	41°01'00"N	09°12'00"E	JQ820641	JQ821048
	TerS05	Sardinia	Italy	Luogo Santo	N. Rain	41°01'00"N	09°12'00"E	JQ820642	JQ821049
	TerS06	Sardinia	Italy	Biancareddu	N. Rain	40°48'07"N	08°11'47"E	JQ820643	JQ821050
	TerS07	Sardinia	Italy	Biancareddu	N. Rain	40°48'07"N	08°11'47"E	JQ820644	JQ821051
	TerS08	Sardinia	Italy	Biancareddu	N. Rain	40°48'07"N	08°11'47"E	JQ820645	JQ821052
	TerT01	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JQ820646	JQ821053
	TerT02	Mainland (France)	France	Gonfaron	P. Rasmont	43°18'28"N	06°18'33"E	JQ820647	JQ821054
	TerT03	Mainland (Belgium)	Belgium	Regnié	T. Lecocq	50°15'02"N	05°46'57"E	JQ820648	JQ821055
	TerT04	Mainland (Belgium)	Belgium	Mons	T. Lecocq & S. Lambert	50°26'02"N	03°56'34"E	JQ820649	JQ821056
Bombus terrestris terrestris	**TerT05**	Mainland (Sweden)	SweGermanyn	Uppsala	P. Rasmont	59°51'44"N	17°38'01"E	JQ820650	JQ821057
	TerT06	Mainland (France)	France	Corbère	A. Coppée	42°39'34"N	02°40'07"E	JQ820651	JQ821058
	TerT07	Mainland (France)	France	Corbère	A. Coppée	42°39'34"N	02°40'07"E	JQ820652	JQ821059
	TerT08	Mainland (Germany)	Germany	Eichenbarleben	T. Lecocq & S. Lambert	52°09'60"N	11°25'02"E	JQ820653	JQ821060
	TerT09	Mainland (Germany)	Germany	Eichenbarleben	T. Lecocq & S. Lambert	52°09'60"N	11°25'02"E	JQ820654	JQ821061
	TerT10	Mainland (France)	France	Escalles	T. Lecocq & S. Lambert	50°55'36"N	01°42'45"E	JQ820655	JQ821062
	Igni01	Outgroup	XX	Commercial samples from Biobest	T. De Meulemeester	-	-	JQ820508	JQ820914
	Igni02	Outgroup	XX	Commercial samples from Biobest	T. De Meulemeester	-	-	JQ820508	JQ820914
	Igni03	Outgroup	XX	Commercial samples from Biobest	T. De Meulemeester	-	-	JQ820508	JQ820914
Bombus ignitus	Igni04	Outgroup	XX	Commercial samples from Biobest	T. De Meulemeester	-	-	JQ820508	JQ820914
	Igni05	Outgroup	XX	Commercial samples from Biobest	T. De Meulemeester	-	-	JQ820508	JQ820914
	Igni06	Outgroup	XX	Commercial samples from Biobest	T. De Meulemeester	-	-	JQ820508	JQ820914
	Igni07	Outgroup	XX	Commercial samples from Biobest	T. De Meulemeester	-	-	JQ820508	JQ820914
Bombus sporadicus	Spor01	Outgroup	Sweden	Sven-Jakobs	P. Rasmont	62°48'43"N	13°36'39"E	-	JQ821024
Bombus mendax	Mend01	Outgroup	France	Eyne	T. De Meulemeester	42°25'27"N	02°09'07"E	JQ820551	JQ820957
	Mend02	Outgroup	France	Eyne	T. De Meulemeester	42°25'30"N	02°08'57"E	JQ820552	JQ820958
Bombus shaposhnikovi	Shap01	Outgroup	Turkey	Artvin	T. De Meulemeester	41°12'21"N	42°30'05"E	JQ820616	JQ821022
	Shap02	Outgroup	Turkey	Artvin	T. De Meulemeester	41°12'21"N	42°30'05"E	JQ820617	JQ821023

Table S2. Results of the bGMYC analysis. Pairwise table of bGMYC results. Values are probability to be conspecific (1 = 100% of chance to be conspecific).

Subgenus	Clades	cor.	B. rud.	B. arg.	jon.	B. hor. h.	per.	B. ves.	B. boh.	B. bar. C.	B. bar. T.	B. bar. E.	ren.	B. luc.	B. hyp.	xan.	B. ter. d. I	B. ter. d. II	B. ter. l.	B. ter. s.	B. ter. t. I	B. ter. t. II	B. ter. t. III	B. ign.	perz.	B. mus. l.	B. mus. m.	B. fil.	B. pas.
Megabombus	*corsicola*	1.00																											
	B. ruderatus	0.85	0.98-1																										
	B. argillaceus	0.30	0.30	1.00																									
	jonghei	0	0	0	1.00																								
	B. hortorum hortorum	0	0	0	0.81	0.99-1																							
Psithyrus	*perezi*	0	0	0	0	0	0.99-1																						
	B. vestalis	0	0	0	0	0	0.70	0.96-1																					
	B. bohemicus	0	0	0	0	0	0.01	0.01	0.97-1																				
	B. barbutellus Corsica	0	0	0	0	0	<0.01	<0.01	<0.01	0.98-1																			
	B. barbutellus Turkey	0	0	0	0	0	0	0	0	0.09	0.97-1																		
	B. barbutellus Europe	0	0	0	0	0	0	0	0	0.23	0.09	0.81-1																	
Bombus s.s.	*renardi*	0	0	0	0	0	0	0	0	0	0	0	0.96-1																
	B. lucorum	0	0	0	0	0	0	0	0	0	0	0	0.54	0.97-1															
	B. hypocrita	0	0	0	0	0	0	0	0	0	0	0	0.11	0.11	1.00														
	xanthopus	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.02	0.92-1													
	B. terrestris dalmatinus I	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.02	0.20	0.99-1												
	B. terrestris dalmatinus II	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.02	0.20	0.57	1.00											
	B. terrestris lusitanicus	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.02	0.20	0.56	0.85	1.00										
	B. terrestris sassaricus	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.02	0.20	0.59	0.66	0.66	0.98-1									
	B. terrestris terrestris I	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.02	0.20	0.27	0.27	0.27	0.27	0.93-1								
	B. terrestris terrestris III	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.02	0.20	0.36	0.36	0.36	0.35	0.27	1.00							
	B. terrestris terrestris III	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.02	0.20	0.50	0.49	0.50	0.50	0.27	0.36	0.84-1						
	B. ignitus	0	0	0	0	0	0	0	0	0	0	0	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.99-1					
Thoracobombus	*pereziellus*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.96-1				
	B. muscorum liepetterseni & allenellus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.39	0.98-1			
	B. muscorum muscorum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.39	0.54	0.82-1		
	B. filchnerae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.10	0.10	0.10	1.00	
	B. pascuorum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<0.01	<0.01	<0.01	<0.01	0.90-1

Table S3. List of the identified compounds in cephalic labial glands secretion (CLGS) and CLGS data matrix (relative amounts of each compound) of in corsicola in jonghei, in perezi, in pereziellus, in renardi, in xanthopus, in Corsican barbutellus, in Corsican pascuorum, and their closely related allopatric parents. Unknown x: undetermined compounds. MW: molecular weight of compounds. IndVal Results: indicator value of each compounds revealed by IndVal methods.

Compounds	MW	IndVal Results B. terrestris d	B. terrestris lus	B. terrestris sa	B. xanthopus	B. terrestris dalmatinus TerD01 SE France	B. terrestris dalmatinus TerD02 SE France	B. terrestris dalmatinus TerD03 Greece	B. terrestris dalmatinus TerD04 Greece
Unknown Terrestris 1	?	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Tetradecane	196	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.00
Dodecanoic acid	200	0.00	0.79	0.00	0.00	0.00	0.00	0.00	0.00
Tetradecanal	212	0.48	0.25	0.00	0.00	0.85	1.37	1.74	2.05
Methyl dodecanoate	214	0.00	0.79	0.00	0.00	0.00	0.00	0.00	0.00
Farnesol	222	0.00	0.07	0.01	0.69	0.00	0.00	0.00	0.00
2.3-Dihydrofarnesal	222	1.00	0.00	0.00	0.00	1.28	2.94	1.93	2.87
2.3-Dihydrofarnesol	224	0.69	0.01	0.24	0.00	84.72	88.65	83.66	79.28
2.3-Dihydrofarnesyl acetate	226	0.18	0.00	0.65	0.00	0.06	0.08	0.00	0.12
Tetradecenoic acid	226	0.00	0.61	0.03	0.03	0.00	0.00	0.00	0.00
Ethyl dodecanoate	228	0.00	1.00	0.00	0.00	0.73	0.32	0.18	0.19
Dodecyl acetate	228	1.00	0.00	0.00	0.00	0.12	0.18	0.13	0.12
Tetradecanoic acid	228	0.03	0.76	0.00	0.00	0.10	0.00	0.32	0.19
Hexadecenal	238	0.00	0.00	0.00	0.84	0.06	0.54	0.11	0.27
Hexadecatrienol	238	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7-Methylhexadecane	240	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Terrestris 2	?	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00
Unknown Terrestris 3	?	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Hexadecanal	240	0.00	0.00	0.00	0.91	0.06	0.13	0.15	0.15
Hexadecenol	240	0.05	0.00	0.74	0.00	0.00	0.00	0.00	0.00
Heptadecane	240	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Isopropyl dodecanoate	242	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00
Hexadecanol	242	0.25	0.00	0.60	0.05	3.03	2.49	3.41	4.72
Ethyl tetradec-9-enoate	254	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00
Hexadecenoic acid (isomer I)	254	0.00	0.07	0.43	0.10	0.00	0.00	0.00	0.00
Hexadecenoic acid (isomer II)	254	0.00	0.58	0.19	0.00	0.00	0.00	0.00	0.00
Ethyl tetradecanoate	256	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Hexadecanoic acid	256	0.00	0.28	0.30	0.00	0.00	0.00	0.09	0.00
Octadecadienal	264	0.00	0.00	0.14	0.60	0.00	0.00	0.07	0.05
9,12,15-Octadecatrien-1-ol	264	0.00	0.00	0.96	0.00	0.00	0.00	0.00	0.00
Dihydrofarnesyl acetate	266	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00
Octadec-13-enal	266	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00
9,12-Octadecadienol	266	0.22	0.00	0.71	0.00	0.56	0.41	2.11	1.96
Pentyl dodecanoate	270	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Hexadecenyl acetate	276	0.90	0.00	0.00	0.00	0.00	0.05	0.07	0.15
Unknown Terrestris 4	?	0.50	0.00	0.00	0.00	0.00	0.06	0.00	0.00
Octadecatrienal	278	0.00	0.00	0.01	0.93	0.00	0.00	0.08	0.08
Nonadecadienal	278	0.80	0.00	0.00	0.00	0.00	0.00	0.06	0.14
Icosane	282	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00
Hexadecyl acetate	284	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00
Geranylgeraniol	290	0.00	0.00	0.01	0.84	0.00	0.00	0.00	0.00
Geranylcitronellal	290	0.31	0.44	0.09	0.00	0.79	0.35	1.44	1.18
Geranylcitronellol	292	0.10	0.27	0.35	0.05	2.02	0.69	1.82	2.73
Icos-1-enal	294	0.00	0.00	0.00	0.95	0.00	0.00	0.00	0.00
Icos-13-enal	294	0.00	0.00	0.00	0.95	0.00	0.00	0.00	0.00
Icos-15-enal	294	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
Henicosane	296	0.12	0.01	0.33	0.20	0.75	0.66	1.02	1.26
3-Methylicosane	296	0.00	0.74	0.00	0.00	0.00	0.00	0.00	0.00
Icosadienol	296	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00
Octadecatrienyl acetate	306	0.00	0.81	0.09	0.00	0.00	0.00	0.00	0.00
Octadecadienyl acetate	308	0.00	0.65	0.28	0.00	0.00	0.00	0.00	0.00
Octadecadienyl acetate	308	0.50	0.00	0.00	0.00	3.32	0.28	0.06	0.00
Ethyl octadec-7-noate	310	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Docosane	310	0.00	0.17	0.01	0.57	0.00	0.00	0.00	0.00

Icosene	310	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.00
Octadecyl acetate	312	0.00	0.28	0.19	0.00	0.00	0.00	0.00	0.00
Tricos-9-ene	322	0.03	0.00	0.59	0.23	0.13	0.00	0.17	0.11
Tricos-5-ene	322	0.00	0.03	0.92	0.00	0.00	0.00	0.00	0.00
Unknown Terrestris 5	?	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.00
Docosenal	322	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.00
Tricosane	324	0.20	0.01	0.06	0.29	0.82	0.23	0.95	1.03
Unknown Terrestris 6	?	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.00
Docos-17-enol	324	0.00	0.00	0.96	0.00	0.00	0.00	0.00	0.00
Geranylcitronellyl acetate	335	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00
Tetracosene	336	0.12	0.00	0.00	0.36	0.00	0.00	0.00	0.00
Tetracosane	338	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
Icosyl acetate	340	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00
Pentacos-9-ene	350	0.16	0.54	0.01	0.02	0.00	0.00	0.00	0.00
Pentacosane	352	0.11	0.38	0.16	0.06	0.05	0.00	0.05	0.08
Hexacosene	364	0.15	0.02	0.32	0.07	0.00	0.00	0.00	0.00
Methylpentacosane	366	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Docosenyl acetate (isomer I)	366	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Docos-15-enyl acetate	366	0.00	0.89	0.00	0.00	0.00	0.00	0.00	0.00
Hexacosane	366	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.00
Docosyl acetate	368	0.00	0.74	0.00	0.00	0.00	0.00	0.00	0.00
Heptacos-9-ene	378	0.13	0.09	0.40	0.08	0.10	0.09	0.08	0.10
Heptacosane	380	0.00	0.56	0.05	0.07	0.00	0.00	0.00	0.00
Octacosene	392	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00
Icosenyl acetate (isomer I)	396	0.00	0.38	0.00	0.37	0.00	0.00	0.00	0.00
Icos-11-enyl acetate	396	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2.3-Dihydrofarnesyl dodecanoate	406	0.09	0.82	0.00	0.00	0.28	0.32	0.17	0.66
Nonacos-9-ene	406	0.00	0.30	0.09	0.30	0.00	0.00	0.00	0.00
Unknown Terrestris 7	?	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00
Nonacosane	408	0.00	0.11	0.50	0.01	0.00	0.00	0.00	0.00
Squalene	411	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00
Unknown Terrestris 8	?	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00
Hexacosenyl acetate (isomer I)	422	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00
Hexacosenyl acetate (isomer II)	422	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00
Hexadecyl dodecanoate	424	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2.3-Dihydrofarnesyl tetradecenoate	432	0.23	0.00	0.00	0.46	0.16	0.14	0.08	0.35
2,3-Dihydrofarnesyl tetradecanoate	434	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Hentriacontene	434	0.00	0.00	0.27	0.06	0.00	0.00	0.00	0.00
Octadecatrienyl dodecanoate	446	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00
Octadecadienyl dodecanoate	448	0.00	0.89	0.00	0.00	0.00	0.00	0.00	0.00
2,3-Dihydrofarnesyl hexadecenoate (isomer I)	460	0.00	0.00	0.00	0.95	0.00	0.00	0.00	0.00
2.3-Dihydrofarnesyl hexadecenoate (isomer II)	460	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,3-Dihydrofarnesyl hexadecanoate	462	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00
Geranylcitronellyl dodecanoate	474	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00
Hexadecyl hexadecenoate	478	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.00
Hexadecyl hexadecanoate	480	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00
2.3-Dihydrofarnesyl octadecenoate	488	0.01	0.00	0.04	0.17	0.00	0.00	0.00	0.06
Geranylcitronellyl tetradecanoate	498	0.50	0.00	0.00	0.00	0.00	0.00	0.07	0.00
Hexadecyl octadecatrienoate	502	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00
Hexadecyl octadecenoate	504	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.00
Hexadecyl octadeaenoate	506	0.00	0.00	0.02	0.38	0.00	0.00	0.00	0.00

B. terrestris dalmatinus TerD05 Greece	B. terrestris dalmatinus TerD06 Greece	B. terrestris dalmatinus TerD07 Commercial C.	B. terrestris dalmatinus TerD08 Commercial C.	B. terrestris dalmatinus TerD09 Commercial C.	B. terrestris dalmatinus TerD10 Roumania I	B. terrestris lusitanicus TerL01 SW France I	B. terrestris lusitanicus TerL02 SW France I	B. terrestris lusitanicus TerL03 SW France I
0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.28	0.10
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	2.08	0.97	0.08
1.09	0.54	0.99	1.53	1.40	1.15	2.53	2.23	3.56
0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.21	0.06
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.31	1.37	2.23	1.78	1.45	1.33	0.00	0.00	0.00
37.72	30.24	46.71	79.84	39.12	33.07	2.99	3.34	6.45
0.02	0.03	0.12	0.17	0.11	0.07	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	1.22	0.42	0.40
0.21	0.24	0.05	0.25	0.45	0.36	5.59	1.54	5.19
0.14	0.13	0.08	0.17	0.10	0.18	0.00	0.00	0.00
0.25	0.16	0.21	0.60	0.22	0.17	0.57	1.75	0.20
0.18	0.26	0.19	0.19	0.24	0.14	0.00	0.00	0.00
0.12	0.30	0.09	0.05	0.15	0.14	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.14	0.18
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.09	0.09	0.22	0.10	0.15	0.22	0.21	0.74	0.53
0.00	0.00	0.00	0.09	0.34	0.11	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.43	2.03	3.03	2.95	3.31	4.70	0.14	0.49	0.54
0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.21	0.40
0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.49	0.21
0.00	0.00	0.00	0.00	0.00	0.00	1.11	1.10	0.40
0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.38	0.47
0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.38	0.10
0.06	0.00	0.07	0.09	0.07	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	2.23	0.71	4.53
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.08	6.39	3.49	1.76	3.21	3.59	0.00	0.00	0.00
0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
0.14	0.23	0.22	0.08	0.21	0.20	0.00	0.00	0.00
0.00	0.00	0.07	0.02	0.04	0.05	0.00	0.00	0.00
0.13	0.06	0.09	0.22	0.19	0.06	0.00	0.00	0.00
0.06	0.16	0.19	0.06	0.07	0.16	0.00	0.00	0.00
0.07	0.00	0.05	0.00	0.00	0.00	0.94	1.32	1.46
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.27	4.34	2.27	1.21	3.77	2.55	2.80	2.00	2.01
12.07	9.26	11.05	4.91	12.02	12.06	9.84	9.01	6.52
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.62	3.38	2.61	1.19	2.43	3.56	1.50	2.47	1.28
0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.10	0.07
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.82	0.97
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.55
0.83	1.27	0.72	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	3.07	1.19	1.49
0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.65	0.54

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.24	2.10	0.85	0.28	1.56	1.70	1.25	1.05	1.02
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13.72	10.21	9.79	1.14	13.99	15.38	5.61	6.23	4.34
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	1.11	0.11	1.16
0.39	0.45	0.00	0.00	0.40	0.35	0.09	0.05	0.04
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.21	0.00
1.69	1.80	0.66	0.06	1.38	1.17	1.27	1.08	1.37
2.73	1.77	1.65	0.06	3.82	2.68	1.58	2.22	1.67
0.35	0.41	0.19	0.01	0.59	0.29	0.18	0.14	0.15
0.00	0.00	0.32	0.00	0.00	0.34	0.00	0.00	0.00
0.12	0.25	0.05	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	1.55	2.08	2.61
0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.22	0.48
0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.15	0.24
3.25	5.55	1.91	0.21	3.13	2.88	2.29	1.86	2.01
0.20	0.30	0.18	0.00	0.00	0.32	0.39	1.00	0.63
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.44	0.98
0.00	0.00	0.00	0.00	0.00	0.00	1.88	1.38	4.88
4.77	12.14	6.48	0.47	4.71	8.44	24.93	27.20	28.71
0.37	0.71	0.22	0.04	0.38	0.45	0.89	1.75	1.16
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.18	0.19
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.27	0.30
0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16	0.25
0.00	0.00	0.00	0.00	0.00	0.00	3.16	6.73	2.44
0.90	3.19	2.65	0.38	0.92	1.80	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	3.66	4.72	3.21
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	2.29	3.96	1.49
0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.90	0.37
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.05	0.14	0.05	0.02	0.01	0.07	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	4.42	2.60	1.73
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.05	0.07	0.09	0.03	0.05	0.12	0.00	0.00	0.00
0.27	0.44	0.15	0.00	0.00	0.11	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B. terrestris lusitanicus TerL04 SW France I	B. terrestris lusitanicus TerL05 SW France I	B. terrestris lusitanicus TerL06 SW France I	B. terrestris lusitanicus TerL07 SW France I	B. terrestris lusitanicus TerL08 SW France I	B. terrestris lusitanicus TerL09 SW France I	B. terrestris sassaricus TerS08 Sardinia	B. terrestris terrestris TerT01 SE France	B. terrestris terrestris TerT02 SE France
0.16	0.26	0.17	0.15	0.12	0.11	0.00	0.17	0.11
0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
4.47	1.05	1.92	0.45	1.50	3.43	0.00	0.32	8.30
2.72	3.88	3.19	2.69	3.21	2.74	0.00	0.00	0.00
0.30	0.31	0.30	0.19	0.33	0.26	0.00	0.13	0.36
0.00	0.00	0.00	0.00	0.00	0.00	0.43	2.56	1.81
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.03	4.06	10.74	8.41	12.30	15.30	4.39	8.35	2.98
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.56	0.19	0.47	0.89	1.11	0.52	0.01	1.45	3.11
3.62	2.28	6.03	6.09	11.69	7.72	0.00	7.86	2.29
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.07	0.58	0.47	0.33	0.45	0.61	0.00	0.30	4.78
0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.08	0.10	0.17	0.23	0.31	0.24	0.00	0.27	0.14
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
0.37	0.57	0.43	0.29	0.38	0.29	1.30	0.48	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.07
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.15
0.08	0.56	1.37	0.36	0.75	1.56	7.91	1.87	0.10
0.23	0.12	0.36	1.12	1.54	0.24	0.00	1.91	0.42
0.78	0.08	0.52	0.25	0.35	0.47	0.06	0.47	1.61
0.49	0.10	0.39	0.28	0.26	0.35	0.00	0.41	2.08
0.50	0.50	0.65	0.69	0.86	0.69	0.00	0.92	0.53
1.20	0.15	0.25	0.07	0.15	0.58	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	3.13	0.00	0.00
3.77	5.81	4.72	3.98	1.67	1.32	0.00	4.15	1.74
0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	1.76	0.79	0.20
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.77	1.22	1.33	1.75	1.39	1.30	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.19
0.00	0.00	0.00	0.00	0.00	0.00	6.10	0.00	0.00
1.78	5.28	2.79	3.05	2.40	1.10	0.00	2.11	0.09
11.96	4.02	11.03	9.55	7.73	10.71	8.68	10.08	12.37
0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00
1.54	1.69	1.89	1.13	1.65	1.23	3.83	2.09	0.84
0.07	0.15	0.11	0.07	0.25	0.02	0.00	0.08	0.07
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.80	0.67	1.24	2.22	0.97	1.19	0.00	1.17	0.51
0.66	0.68	0.87	1.54	0.66	0.61	0.00	0.91	1.66
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.41	1.04	1.12	1.19	1.45	1.01	0.00	1.12	2.13
0.46	0.58	0.56	0.51	0.41	0.44	0.00	0.51	0.45

0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00
0.94	1.14	1.11	0.44	0.74	0.90	4.98	1.52	0.38
0.00	0.35	0.56	0.00	0.20	0.56	15.24	2.21	0.24
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00
4.90	6.84	6.41	4.58	5.54	4.92	17.38	5.95	4.70
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	7.38	0.00	0.00
0.90	2.34	1.54	1.16	0.29	0.18	0.00	1.57	0.13
0.00	0.04	0.10	0.00	0.09	0.00	0.09	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.04	0.00
0.37	0.50	0.44	0.85	0.39	0.00	0.00	0.22	0.00
0.67	1.16	1.69	0.65	0.80	1.67	1.07	2.08	0.49
1.62	2.42	2.66	2.40	2.14	2.37	3.45	2.02	2.77
0.10	0.16	0.18	0.09	0.07	0.12	0.40	0.31	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.88	1.73	1.67	2.38	1.42	1.56	0.00	1.07	0.26
0.00	0.32	0.00	0.00	0.24	0.00	0.03	0.15	0.11
0.19	0.18	0.12	0.46	0.11	0.09	0.00	0.05	0.00
1.54	1.66	2.25	1.83	1.74	2.12	2.60	2.82	1.40
0.57	0.84	0.77	0.91	0.49	1.17	1.30	0.47	0.83
0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00
0.28	0.52	0.36	0.55	0.35	0.37	0.01	0.29	0.00
1.34	2.05	1.30	2.53	2.16	1.96	0.00	1.69	0.59
25.25	26.58	19.86	21.32	19.50	17.96	0.00	14.19	28.88
1.03	0.97	0.98	1.35	0.86	1.75	1.31	0.58	0.91
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.08	0.19	0.06	0.12	0.04	0.19	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.18	0.20	0.10	0.12	0.31	0.10	0.00	0.09	0.00
0.12	0.21	0.00	0.08	0.00	0.00	0.00	0.00	0.00
4.11	2.89	2.48	2.05	2.23	3.27	0.00	2.76	2.52
0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00
3.05	5.45	2.26	3.56	2.14	1.72	0.00	2.61	5.16
0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
3.00	2.39	0.00	2.26	1.80	1.76	0.00	2.79	0.82
1.04	0.93	0.00	0.77	0.38	0.39	0.00	0.87	0.09
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.00
1.97	2.02	0.00	2.07	2.08	0.83	0.00	1.72	0.63
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00

B. terrestris terrestris TerT03 Belgium II	B. terrestris terrestris TerT04 Belgium I	B. terrestris terrestris TerT05 Sweden I	B. terrestris terrestris TerT06 SW France I	B. terrestris terrestris TerT07 SW France I	B. terrestris terrestris TerT08 E. Germany	B. terrestris terrestris TerT09 E. Germany	B. terrestris terrestris TerT10 N. France II	B. xanthopus TerX01 Corsica	B. xanthopus TerX02 Corsica
0.10	0.07	0.19	0.14	0.82	0.07	0.09	0.14	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.50
0.38	0.00	1.33	5.48	3.62	1.21	6.89	1.53	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.16	0.05	0.41	0.52	0.26	0.06	0.11	0.06	0.00	0.00
2.43	3.12	2.19	1.88	2.26	2.14	2.87	2.77	8.22	5.87
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.89	7.56	10.54	5.24	3.55	9.57	9.76	10.69	10.45	8.38
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.62	0.03	0.45	1.21	1.47	1.04	0.83	0.37	0.28	0.00
9.63	7.10	7.96	5.99	2.15	9.16	8.98	5.02	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.28	0.06	0.27	1.26	2.13	0.06	0.96	0.31	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45	0.37
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.20	0.12	0.26	0.13	0.12	0.06	0.07	0.06	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.10	0.05	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.26	0.46	0.29	0.08	0.58	0.24	0.47	0.39	2.67	1.41
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.04	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00
0.22	0.16	0.18	0.13	0.30	0.09	0.10	0.16	0.00	0.00
0.99	1.67	1.86	0.11	0.25	0.85	0.64	0.87	1.87	0.00
0.40	0.81	0.40	0.66	0.46	1.21	0.71	0.20	0.00	0.00
0.38	0.00	0.26	1.03	0.00	0.78	0.26	0.33	0.00	0.00
0.54	0.00	0.16	0.66	3.26	0.31	0.29	0.25	0.00	0.00
0.89	0.59	0.74	0.71	0.23	0.55	0.99	0.36	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.52
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.32	10.52	4.13	1.29	0.31	1.33	1.53	1.72	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.28
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.21	0.74	0.28	0.29	0.48	0.32	0.37	0.43	2.66	2.27
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.09	1.31	1.18	0.84	0.41	0.42	1.28	1.40	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.56	7.56
1.21	2.65	1.25	1.63	7.36	1.91	1.97	3.18	0.00	0.00
8.64	6.42	8.76	11.58	28.89	10.03	9.14	13.05	0.27	0.79
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.86
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	2.17
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.00
1.41	2.27	1.24	1.31	2.32	1.41	1.36	1.88	3.04	2.14
0.04	0.07	0.00	0.04	0.23	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.82	1.32	1.02	0.80	1.09	0.11	1.08	1.36	0.00	0.00
0.73	1.07	0.66	0.70	2.09	0.76	0.73	0.99	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.86	0.89	0.84	1.82	2.08	1.78	1.50	1.20	0.00	0.00
0.65	0.66	0.40	0.60	0.53	0.32	0.44	0.55	0.60	0.56

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.50
0.06	0.09	0.04	0.00	0.92	0.00	0.07	0.23	0.00	0.00
0.90	1.24	0.84	0.96	0.59	0.76	1.19	1.32	1.73	1.95
1.46	1.57	2.09	0.31	0.03	0.84	0.84	0.98	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	1.76
6.01	7.21	6.53	5.67	2.86	5.80	6.36	6.12	7.35	7.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.83	4.53	1.17	0.18	0.18	0.12	0.19	0.52	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.19
0.03	0.04	0.05	0.00	0.09	0.00	0.00	0.00	1.34	0.56
0.00	0.00	0.00	0.45	0.06	0.05	0.36	0.00	0.00	0.00
1.24	1.48	1.94	1.09	1.06	1.04	1.51	1.43	0.66	0.84
2.65	2.51	2.76	2.37	2.39	2.55	1.88	2.34	1.58	1.45
0.12	0.22	0.17	0.19	0.07	0.11	0.11	0.18	0.95	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.70	1.41	1.37	2.12	0.67	0.30	1.58	1.49	0.00	0.00
0.34	0.32	0.26	0.27	0.19	0.10	0.16	0.40	2.15	0.17
0.18	0.00	0.10	0.21	0.00	0.00	0.09	0.00	0.00	0.00
1.68	2.41	2.19	2.94	2.09	2.33	1.81	3.18	2.44	3.91
1.11	0.66	0.80	0.55	0.40	0.62	0.36	1.26	0.32	0.52
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.56	0.44	0.32	0.52	0.07	0.00	0.51	0.41	0.32	0.00
3.17	2.11	2.26	2.11	0.90	0.56	1.79	2.24	0.00	0.00
22.42	16.00	19.62	22.97	9.63	26.07	16.62	17.84	0.00	0.00
1.20	0.74	0.84	0.69	0.58	0.94	0.78	1.95	0.77	1.73
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.08	0.08	0.12	0.12	0.00	0.00	0.12	0.12	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.69	1.74	3.49	2.80	2.46	3.09	3.41	2.59	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	1.19
2.15	1.70	1.59	2.88	3.12	3.06	1.86	1.41	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.71	1.79	1.99	2.00	1.87	2.94	2.53	2.04	0.00	0.00
0.22	0.65	0.61	0.50	0.26	0.73	0.63	0.70	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	0.64
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.47	3.41
0.98	1.30	1.54	1.96	2.19	2.18	1.82	2.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.60	19.23
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.03	21.02
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B. xanthopus TerX03 Corsica	B. xanthopus TerX04 Corsica	B. xanthopus TerX05 Corsica	B. xanthopus TerX06 Corsica	B. xanthopus TerX07 Corsica	B. xanthopus TerX08 Corsica	B. xanthopus TerX09 Corsica	B. xanthopus TerX10 Corsica	B. xanthopus TerX11 Corsica	B. xanthopus TerX12 Corsica	B. xanthopus TerX13 Corsica	B. xanthopus TerX14 Corsica	B. xanthopus TerX15 Corsica	B. xanthopus TerX16 Corsica	B. xanthopus TerX17 Corsica
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.83	0.00	0.00	0.04	0.28	0.00	0.00	0.92	0.38	2.40	0.87	0.72	0.16	0.05	0.20
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.68	3.64	6.32	1.43	0.52	4.37	2.69	8.62	10.79	5.82	5.55	9.98	3.73	12.29	3.43
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2.14	2.97	3.93	0.60	4.44	3.92	0.00	8.29	4.05	3.61	7.78	4.37	19.01	4.05
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.36	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.16	0.00	0.00	0.00	0.14	0.06	0.27
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.10	1.44	0.67	0.27	4.14	0.27	0.71	9.36	2.91	4.80	4.78	1.84	1.74	5.33	1.39
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.24	2.79	4.73	5.07	2.37	2.20	2.19	0.26	4.33	2.30	2.09	1.78	2.59	7.24	3.11
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.73	0.00	11.90	0.00	2.61	0.00	0.00	1.38	4.33	4.64	0.44	2.54	8.24	0.73
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.47	0.52	0.00	0.00	3.87	0.00	0.00	1.85
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.88	0.00	0.59	0.00	0.59	0.53	0.61	1.85	0.92	1.21	0.00	1.26	0.00	0.00	1.16
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	2.22	0.31
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.55	0.00	0.71	0.48	1.07	0.42	0.00	0.88	0.65	3.18	0.00	1.18	0.00	0.00	0.61
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.76
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.84	3.55	1.44	1.14	8.63	0.83	2.01	7.43	2.26	1.59	4.92	3.38	4.53	9.45	1.78
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.29	5.22	6.91	5.03	3.23	7.69	6.33	0.77	11.04	5.76	4.83	4.86	6.15	9.43	8.04
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.82	1.47	0.57	0.18	3.93	4.17	1.96	8.54	2.34	10.06	12.96	16.96	12.18	5.40	5.67
0.46	0.50	0.62	1.13	0.88	0.58	0.57	1.31	0.69	1.29	1.02	2.06	2.94	0.22	1.53
0.94	1.35	1.95	2.10	2.94	2.56	2.67	0.55	9.39	1.85	3.09	4.37	7.51	2.49	3.01
0.50	0.66	0.65	1.06	0.00	4.77	0.00	0.00	0.00	1.62	0.92	0.00	0.00	0.00	1.70
2.51	1.71	2.12	1.04	1.74	2.62	3.65	1.35	3.50	1.63	1.88	1.89	1.00	2.75	3.46
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.44	0.87	0.35	0.33	1.06	0.00	0.68	5.50	0.00	0.73	1.24	0.72	0.80	0.00	0.72

0.76	1.27	0.68	1.85	2.77	0.59	1.45	10.06	0.54	5.51	1.26	1.25	0.89	0.40	1.43
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.83	1.70	1.46	0.82	0.76	2.43	3.77	3.26	3.29	1.60	0.00	1.79	3.71	0.76	2.89
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	1.82	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.27	0.00	0.47	0.43	0.41	0.85	0.74	0.00	0.84	0.00	0.00	0.50	0.99	0.20	1.37
15.08	6.03	6.59	18.67	9.26	4.28	10.42	2.65	6.89	4.91	6.08	5.36	6.92	8.50	15.41
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	4.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1.44	0.00	0.00	0.51	0.00	0.31	0.00	2.94	0.00	0.63	0.00	0.00	0.17	0.31
2.38	3.55	1.22	1.48	8.67	0.86	0.61	4.49	2.79	2.37	2.91	0.66	5.81	1.48	1.63
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.72	0.81	0.67	0.52	0.35	0.00	0.76	0.00	0.69	0.48	0.52	0.00	0.00	0.25	0.00
4.08	1.14	1.24	10.26	0.00	0.86	0.98	0.00	0.96	0.95	1.08	0.00	0.00	1.78	2.18
0.00	0.37	0.38	0.67	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.11	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.35	4.25	1.31	1.96	7.64	0.00	0.00	5.86	2.59	1.83	2.08	0.88	4.75	0.77	1.69
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.87	2.35	2.38	0.77	0.90	2.44	3.41	0.00	0.80	1.05	1.14	1.40	3.42	0.57	1.87
2.37	0.33	0.36	0.20	0.00	0.00	0.00	0.00	0.68	0.43	0.44	0.30	0.00	0.06	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.54	0.53	0.57	0.59	2.26	0.64	0.25	0.84	0.35	0.24	0.36	0.00	0.32	0.13	0.43
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.86	1.24	1.04	0.69	0.00	0.00	0.00	0.00	0.54	0.90	0.88	1.30	1.99	0.15	1.53
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00
0.58	0.33	0.00	1.92	0.00	0.00	0.00	0.25	0.20	0.43	0.70	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.87	0.82	1.15	1.24	0.00	2.74	0.85	1.25	0.44	2.22	1.99	1.68	0.73	0.00	0.94
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.79	0.87	0.88	0.53	0.22	2.07	1.31	0.26	0.23	1.03	0.82	0.78	0.36	0.24	0.40
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.57	3.74	4.40	2.33	2.19	3.77	3.00	1.20	0.91	2.63	3.06	3.07	1.22	0.25	1.81
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.76	17.19	15.25	5.77	9.16	22.34	12.35	7.17	0.21	8.66	7.92	6.63	5.10	0.00	8.84
0.00	0.00	0.21	0.79	1.38	0.00	3.39	0.00	0.00	0.00	1.25	0.11	0.46	0.00	1.03
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.43	0.30	0.16	0.30	0.37	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.22
13.88	25.97	28.72	10.31	16.65	18.07	26.95	9.83	10.66	11.75	11.82	10.69	11.22	0.00	12.06
0.00	0.00	0.42	2.42	0.33	0.00	1.46	0.29	0.00	0.00	0.26	0.21	1.36	0.00	0.18

B. xanthopus TerX18 Corsica	B. xanthopus TerX19 Corsica	B. terrestris sassaricus TerS01 Sardinia	B. terrestris sassaricus TerS02 Sardinia	B. terrestris sassaricus TerS03 Sardinia	B. terrestris sassaricus TerS04 Sardinia	B. terrestris sassaricus TerS05 Sardinia	B. terrestris sassaricus TerS06 Sardinia	B. terrestris sassaricus TerS07 Sardinia
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.63	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.08	14.38	1.05	1.01	1.42	1.25	2.72	1.02	1.20
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.82	4.94	20.64	19.71	19.36	25.40	26.47	20.78	21.72
0.00	0.00	0.15	0.15	0.14	0.12	0.34	0.30	0.19
1.24	0.00	0.15	0.16	0.17	0.45	0.33	0.98	0.26
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.20	5.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.25	0.26	0.14	0.27	0.63	0.73	0.21
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.49	4.75	0.19	0.13	0.26	0.26	0.24	0.14	0.15
0.00	0.00	0.30	0.37	0.21	0.32	0.15	0.54	0.22
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.69	0.00	9.09	7.68	8.44	5.81	4.38	5.65	7.82
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.17	0.34	0.94	0.62	1.10	1.30	0.77	1.69	1.05
0.00	0.00	0.18	0.53	0.21	0.24	0.54	0.79	0.16
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.13	0.13	0.14	0.16	0.28	0.00	0.15
2.55	0.72	0.14	0.26	0.40	0.11	0.33	0.36	0.29
0.00	0.54	3.91	4.32	3.32	5.14	7.57	4.67	4.26
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.86	4.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.44	0.96	9.11	11.65	10.40	11.27	11.29	15.31	11.08
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.84	1.64	0.33	0.59	0.66	0.25	0.68	0.26	0.59
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.54	12.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.75	1.71	1.67	1.21	0.63	1.61	1.46
15.68	4.73	10.95	10.43	9.79	9.58	13.92	11.57	10.95
1.67	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.58	6.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.03	4.45	2.61	2.58	2.70	2.97	2.53	1.91	2.44
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.05	0.07	0.11	0.04	0.16	0.07	0.09
0.00	0.00	0.35	0.38	0.23	0.30	0.56	0.63	0.44
0.00	0.00	0.40	0.47	0.57	0.39	0.74	0.86	0.49
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.17	0.68	0.43	0.50	0.45	0.40	0.30	0.37	0.39

5.10	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.04	0.06	0.06	0.02	0.06	0.06	0.06
4.89	1.91	2.60	2.90	2.59	2.93	2.87	3.09	2.33
0.00	0.00	9.42	7.96	9.39	9.51	6.48	7.57	8.66
0.00	0.00	1.83	2.09	2.09	0.00	1.40	1.40	1.60
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17.20	12.48	6.18	7.01	5.51	5.97	4.43	4.57	5.37
0.00	0.00	0.06	0.04	0.07	0.05	0.00	0.05	0.06
0.00	0.00	9.04	7.88	9.36	7.32	5.30	6.71	7.98
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.73	3.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	1.59	2.20	2.10	1.66	0.80	0.93	1.44
0.00	0.00	0.31	0.26	0.30	0.27	0.08	0.22	0.29
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.08	0.07	0.04	0.05	0.06	0.05	0.08
1.38	0.99	0.02	0.02	0.02	0.00	0.00	0.01	0.02
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.14	1.32	3.76	3.23	3.60	3.31	1.36	2.65	3.61
0.90	0.00	0.37	0.00	0.41	0.11	0.00	0.25	0.35
0.00	0.00	0.10	0.09	0.10	0.07	0.00	0.06	0.10
0.00	0.34	0.03	0.03	0.03	0.02	0.02	0.04	0.03
0.00	0.00	0.27	0.24	0.18	0.20	0.21	0.18	0.26
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.74	1.13	0.81	1.01	0.79	0.66	0.50	0.72	0.77
0.00	0.00	0.26	0.00	0.38	0.00	0.00	0.15	0.32
0.00	0.00	0.26	0.08	0.32	0.07	0.00	0.11	0.28
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.55	0.55	0.56	0.19	0.15	0.28	0.49
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.39	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.17	0.36	0.10	0.19	0.52	0.48	0.16
0.00	0.00	0.02	0.02	0.02	0.00	0.00	0.00	0.02
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.15	0.30	0.04	0.07	0.04	0.05	0.07	0.04	0.04
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.72	2.36	0.09	0.11	0.04	0.15	0.10	0.13	0.07
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Compounds	MW	IndVal Results B.renardi	B. lucorum	B. renardi LucR01 Corisca	B. renardi LucR02 Corisca	B. renardi LucR03 Corisca	B. renardi LucR04 Corisca	B. renardi LucR05 Corisca	B. renardi LucR06 Corisca	B. renardi LucR07 Corisca	B. renardi LucR08 Corisca	B. renardi LucR09 Corisca	B. renardi LucR10 Corisca	B. renardi LucR11 Corisca	B. renardi LucR12 Corisca
Dodecanoic acid	200	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.3-Dihydrofarnesol	224	0.00	0.59	0.06	0.08	0.02	0.01	0.00	0.00	0.03	0.02	0.08	0.00	0.02	0.01
Ethyl dodecenoate	226	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethyl dodecanoate	228	0.59	0.00	1.64	7.50	5.60	5.30	1.79	0.00	6.48	9.15	2.62	0.20	4.78	8.90
Unknown Lucorum 1	228	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hexadec-7-enal	238	0.02	0.60	3.95	2.27	1.77	0.53	0.55	0.71	2.49	1.54	0.97	1.35	2.72	1.43
Hexadecanal	240	0.76	0.00	1.79	1.50	1.96	0.42	3.77	3.30	1.48	2.15	1.81	1.87	2.80	1.42
Hexadecanol	242	0.00	0.82	3.31	0.99	1.05	2.13	1.15	1.01	0.77	0.55	1.82	0.01	0.96	0.16
Ethyl tetradec-9-enoate	254	0.05	0.81	18.64	26.70	25.41	42.00	10.48	20.85	24.42	36.14	32.71	6.55	19.19	27.50
Octadecatrienal	262	0.01	0.84	1.75	0.70	0.28	0.68	0.00	0.00	0.35	1.02	0.86	0.00	0.00	0.55
9,12,15-Octadecatrien-1-ol	264	0.02	0.47	1.87	0.08	0.01	0.43	0.01	0.01	0.50	0.16	0.00	0.28	0.01	0.01
9,12-Octadecadien-1-ol	266	0.00	0.88	0.27	0.13	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethyl hexadecatrienoate	278	0.00	0.82	1.03	1.65	0.82	0.47	0.00	0.00	0.73	0.24	0.62	0.00	0.00	0.32
Ethyl hexadecadienoate	280	0.50	0.00	0.17	0.18	0.21	0.04	0.00	0.00	0.38	0.00	0.08	0.00	0.00	0.11
Nonadecenal	280	0.28	0.00	0.00	0.00	0.30	0.01	0.00	0.04	0.02	0.00	0.01	0.00	0.00	0.07
Ethyl hexadec-9-enoate	282	0.04	0.29	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hexadecyl acetate	284	0.89	0.00	2.70	0.62	6.88	3.03	0.67	3.07	1.72	3.78	2.91	0.91	0.63	3.56
Henicosenal	294	0.94	0.00	5.00	3.35	0.98	3.76	2.56	4.51	3.27	3.23	6.11	1.44	2.63	4.28
Methyl octadecadienoate	294	0.17	0.00	0.05	0.01	0.00	0.32	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
Henicosane	296	0.07	0.49	0.92	1.11	1.28	0.61	1.56	0.63	1.03	0.37	2.84	1.10	0.43	0.20
Heneicoatrienol	306	0.51	0.01	1.15	1.69	0.23	0.45	1.34	0.00	1.94	0.46	2.77	0.00	0.00	0.39
Octadecatrienyl acetate	306	0.56	0.00	0.31	0.20	0.07	0.96	0.00	0.45	0.10	0.33	1.37	0.00	0.00	0.00
Ethyl octadecatrienoate	306	0.00	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethyl octadecadienoate	308	0.78	0.00	0.58	0.21	0.43	0.21	0.00	0.27	0.24	0.27	0.18	0.00	0.00	0.13
Octadecadienyl acetate	308	0.36	0.12	0.70	0.63	0.13	0.44	0.25	0.00	0.75	0.64	1.54	0.00	0.00	0.55
Ethyl octadec-9-enoate	310	1.00	0.00	8.66	6.39	5.70	4.05	5.13	11.25	7.38	3.22	2.19	2.89	2.96	4.00
Docosane	310	0.40	0.13	0.21	0.10	0.25	0.22	0.26	0.00	0.15	0.20	0.26	0.40	0.54	0.16
Octadecyl acetate	312	0.61	0.00	0.25	0.13	0.25	0.20	0.00	0.00	0.14	0.17	0.36	0.00	0.00	0.10
Ethyl octadecanoate	312	0.67	0.00	0.17	0.16	1.71	0.15	0.00	0.37	0.30	0.21	0.36	0.19	0.00	0.20
Tricos-9-ene	322	0.25	0.21	1.85	0.58	1.52	0.73	2.41	1.16	0.63	0.38	1.46	2.24	0.39	0.27
Tricosane	324	0.23	0.31	7.24	5.76	7.29	5.60	9.13	9.42	7.40	5.69	5.62	10.43	8.92	4.38
Tetracos-9-ene	336	0.07	0.15	0.17	0.06	0.27	0.10	0.12	0.10	0.53	0.04	0.11	0.09	0.07	0.03
Icosenyl acetate	338	0.67	0.00	0.19	0.08	0.05	0.38	0.17	0.39	0.18	0.24	0.40	0.00	0.00	0.23
Tetracosane	338	0.22	0.17	0.35	0.30	0.38	0.58	0.94	0.92	0.39	0.30	0.77	0.82	0.26	0.33
Octyl tetradecenoate	338	0.33	0.00	0.11	0.03	0.46	0.65	0.92	0.02	0.01	0.01	0.01	0.01	0.02	0.01
Icosyl acetate	340	0.72	0.00	0.76	1.11	0.00	1.40	0.00	0.70	1.04	0.92	2.20	0.00	1.78	0.74
Pentacos-9-ene	350	0.39	0.13	3.08	2.08	3.08	2.38	3.89	3.61	2.62	1.53	4.59	4.87	2.76	1.64
Pentacosane	352	0.60	0.04	2.42	3.50	3.19	3.36	3.73	6.74	4.73	3.20	2.85	6.80	5.43	2.89
Hexacos-9-ene	364	0.46	0.01	0.22	0.41	0.03	0.44	6.33	0.19	0.23	0.49	0.29	1.01	0.00	0.40
Hexacosane	366	0.21	0.23	0.10	0.28	0.10	0.08	0.28	0.34	0.30	0.15	0.00	0.18	0.26	0.44
Heptacos-9-ene	378	0.82	0.00	3.97	3.94	4.30	3.63	6.41	10.27	5.42	2.33	5.17	7.49	3.91	1.79
Heptacosane	380	0.55	0.00	0.44	0.90	0.55	0.58	1.71	2.22	1.28	0.44	0.24	2.04	1.08	0.44
Octacos-9-ene	392	0.50	0.05	0.13	0.13	0.17	0.19	0.15	0.19	0.19	0.04	0.07	0.19	0.06	0.03
Nonacos-9-ene	406	0.68	0.01	1.70	1.14	1.37	0.96	3.24	4.51	1.46	0.83	1.17	4.84	1.57	0.71
Nonacosane	408	0.72	0.00	0.08	0.16	0.11	0.10	0.23	0.39	0.15	0.10	0.05	0.33	0.38	0.10
Hexadecyl dodecanoate	424	0.69	0.01	1.70	1.52	2.16	1.49	5.03	0.96	1.61	1.93	1.42	3.84	4.41	3.27

Farnesyl tetradecanoate	432	0.89	0.00	0.50	0.24	0.23	0.24	0.46	0.66	0.15	0.56	0.28	0.45	0.40	0.24
Hentriacontan-1-ol	434	0.94	0.00	0.13	0.09	0.12	0.12	0.25	0.33	0.14	0.04	0.14	0.62	0.20	0.15
Octadecatrienyl dodecanoate	446	0.72	0.00	0.77	0.54	0.30	0.54	0.00	0.41	0.38	0.43	0.45	0.18	0.54	0.39
Octadecadienyl dodecanoate	448	0.52	0.04	0.87	0.82	1.82	0.45	1.39	0.37	0.54	0.54	0.34	0.81	1.64	1.47
Hexadecyl tetradecenoate	450	0.86	0.03	11.96	12.23	13.68	7.09	19.25	7.86	10.65	13.64	9.77	32.26	27.28	21.68
Octadecatrienyl tetradecenoate	472	0.07	0.38	3.30	4.12	1.81	1.44	1.30	0.35	3.14	1.12	0.00	1.69	0.17	1.19
Octadecadienyl tetradecenoate	474	0.38	0.16	2.40	2.83	1.72	0.99	1.21	0.34	1.86	1.05	0.00	1.27	0.45	2.98
Unknown Lucorum 2	?	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Lucorum 3	?	0.50	0.00	0.33	0.72	0.01	0.01	1.92	1.08	0.30	0.14	0.03	0.39	0.37	0.14

B. renardi LucR13 Corisca	B. renardi LucR14 Corisca	B. renardi LucR15 Corisca	B. renardi LucR16 Corisca	B. renardi LucR17 Corisca	B. renardi LucR18 Corisca	B. lucorum LucL01 Belgium I	B. lucorum LucL02 Poland	B. lucorum LucL03 Sweden I	B. lucorum LucL04 Czech R.	B. lucorum LucL05 Czech R.	B. lucorum LucL06 Hungary	B. lucorum LucL07 Roumania II	B. lucorum LucL08 Poland	B. lucorum LucL09 NE. Italy	B. lucorum LucL10 Slovakia
0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.20	0.01	0.02	0.01	0.00	0.59	0.38	0.18	0.24	0.04	0.26	0.17	0.25	0.15	0.32
0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.17	0.12	0.16	0.14	0.14	0.13	0.17	0.16	0.23
6.27	0.00	6.95	1.61	0.00	2.65	1.94	2.05	1.29	1.55	2.09	2.43	0.99	2.29	1.97	1.49
0.00	0.00	0.00	0.00	0.00	0.00	1.23	2.12	1.50	0.14	0.52	0.36	1.58	2.15	1.56	1.84
0.15	1.94	1.66	2.59	0.18	0.00	5.15	2.16	2.79	3.33	2.30	4.52	4.54	44.11	1.99	1.35
1.81	0.80	1.83	2.66	0.08	0.28	1.13	0.64	0.64	0.68	0.78	0.94	0.74	0.71	0.73	0.42
1.28	0.37	2.61	0.04	0.04	0.00	12.69	7.10	0.11	10.87	3.16	11.40	10.31	8.98	0.07	5.55
30.44	0.53	38.33	19.34	14.99	34.04	44.40	37.15	48.66	38.37	30.52	35.02	33.14	2.75	50.41	60.57
0.82	0.00	0.73	0.13	0.08	3.68	2.64	2.16	1.58	3.09	2.48	2.58	2.74	1.73	5.37	0.90
0.02	0.03	0.12	0.00	0.00	0.00	3.66	0.37	2.25	0.00	0.49	0.00	2.98	0.00	1.78	2.14
0.00	0.00	0.00	0.00	0.00	0.00	3.51	3.24	2.73	5.37	0.60	4.48	2.40	2.64	1.49	2.07
0.13	0.00	0.43	0.11	0.16	0.00	3.26	2.28	7.84	2.21	1.66	3.64	2.35	2.63	6.45	1.92
0.13	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.05	1.78	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	1.04	0.10	0.08	0.08	0.00	0.00	0.11	0.07	0.08	0.11	0.07
4.08	0.57	4.34	1.44	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.87	3.16	3.42	2.87	4.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.01	0.89	0.28	1.21	1.42	0.60	1.78	0.62	1.39	1.75	1.43	1.79	1.95	1.26	1.20	1.16
1.03	0.00	0.47	0.19	0.54	0.36	0.25	0.21	0.38	0.40	0.10	0.29	0.26	0.20	0.35	0.36
0.86	0.00	0.39	0.22	0.14	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.43	0.32	0.41	0.13	0.42	0.35	0.32	0.11	0.05
0.34	0.00	0.26	0.09	0.28	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.90	2.41	0.41	0.07	0.68	0.18	0.28	0.30	0.41	0.51	0.15	0.37	0.90	0.25	0.45	0.47
6.17	5.96	4.67	5.11	7.91	5.42	0.66	0.67	0.69	0.60	0.46	0.94	0.55	0.70	0.98	0.46
0.37	0.00	0.18	0.07	0.06	0.00	0.17	0.22	0.20	0.22	0.28	0.22	0.12	0.19	0.22	0.18
0.37	0.00	0.09	0.05	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.40	0.00	0.16	0.06	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.32	2.76	0.41	1.06	0.41	0.64	1.47	3.29	1.47	0.64	0.36	1.68	0.75	1.68	1.22	1.02
6.10	15.77	5.03	6.56	5.01	9.46	6.36	6.58	7.38	11.33	12.05	8.18	11.81	8.38	6.54	5.11
0.62	0.38	0.11	0.12	0.05	0.00	0.09	0.11	0.12	0.16	0.18	0.15	0.18	0.15	0.12	0.11
0.40	0.00	0.13	0.13	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.56	0.00	0.24	0.13	0.63	0.00	0.23	0.42	0.26	0.37	0.66	0.54	0.55	0.41	0.66	0.37
0.00	0.08	0.01	0.01	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.58	0.50	1.47	0.56	0.10	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.52	6.49	2.50	3.37	2.35	2.39	1.83	3.39	3.15	3.13	3.95	2.14	3.30	3.17	1.84	2.01
3.15	7.41	3.48	2.39	2.94	4.02	2.07	2.66	2.21	3.73	4.06	3.23	3.78	2.72	2.34	1.75
0.53	0.00	0.49	0.00	0.21	0.00	0.39	0.19	0.16	0.16	0.06	0.18	0.14	0.20	0.33	0.18
0.14	0.49	0.12	0.00	0.00	0.05	0.07	0.20	0.17	0.25	0.30	0.18	0.21	0.21	0.20	0.10
4.19	8.45	6.53	3.71	2.52	4.21	1.53	2.54	1.97	2.31	3.74	2.20	2.40	2.27	1.74	1.20
0.63	3.19	0.95	0.51	0.84	0.00	0.24	0.54	0.40	0.48	0.76	0.43	0.57	0.54	0.50	0.21
0.28	0.49	0.32	0.09	0.06	0.08	0.07	0.14	0.09	0.10	0.21	0.22	0.11	0.12	0.06	0.06
1.58	5.79	3.01	1.74	1.07	1.92	0.33	0.98	0.67	0.68	1.46	0.80	0.57	0.74	0.67	0.46
0.08	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.71	1.09	3.91	0.00	0.00	0.96	0.13	0.93	0.58	0.43	1.10	0.60	1.11	0.55	0.78	0.53

0.31	0.00	0.34	2.20	1.28	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.24	0.60	0.34	0.16	0.09	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.49	0.00	0.06	0.18	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.51	0.00	0.00	1.09	1.43	0.00	0.03	0.73	0.33	0.22	0.73	0.44	0.27	0.27	0.32	0.21
8.34	27.86	2.77	25.99	14.09	14.69	0.65	7.80	3.44	3.25	14.52	4.60	3.91	4.12	3.72	2.19
0.95	0.00	0.00	0.54	1.11	12.02	0.29	6.16	4.14	1.32	3.37	1.98	2.01	1.40	1.44	1.21
1.04	0.00	0.00	1.71	5.13	0.23	0.07	0.37	0.12	1.39	5.15	2.03	2.04	1.30	1.67	1.57
0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.56	0.18	0.15	0.01	0.51	0.02	0.36	0.30	0.16
0.20	0.00	0.00	9.88	27.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B. lucorum LucL11 SW France I	B. lucorum LucL12 SW France I	B. lucorum LucL13 N. France II	B. lucorum LucL14 W. Germany	B. lucorum LucL15 Denmark	B. lucorum LucL16 Sweden I	B. lucorum LucL17 Sweden I	B. lucorum LucL18 Netherlands	B. lucorum LucL19 NW. Italy II	B. lucorum LucL20 Roumania II	B. lucorum LucL21 Belgium I	B. lucorum LucL22 Belgium II	B. lucorum LucL23 N. France II	B. lucorum LucL24 Belgium II
0.00	0.50	0.03	0.00	0.04	0.00	0.22	0.00	0.12	0.13	0.14	0.06	0.07	0.09
0.15	0.00	0.01	0.07	0.17	0.08	0.05	0.16	0.09	0.07	0.09	0.19	0.21	0.25
0.15	0.00	0.00	0.12	0.16	0.12	0.11	0.00	0.16	0.15	0.46	1.36	1.36	0.56
1.00	2.67	1.82	1.51	1.12	1.48	1.30	1.70	1.25	2.09	2.04	1.44	1.52	1.65
1.42	0.89	0.78	0.69	1.24	1.99	1.58	1.47	0.28	0.57	1.24	1.84	1.74	1.54
1.92	4.25	2.33	1.96	2.63	1.89	2.97	4.94	2.85	2.55	2.15	3.17	5.47	5.65
0.54	0.89	0.80	0.75	0.71	0.57	0.60	0.92	0.20	0.70	1.20	1.13	1.06	0.71
6.22	12.69	6.20	7.40	7.52	0.05	5.74	12.87	10.66	5.50	12.69	6.22	0.25	5.64
42.44	33.87	59.84	39.95	42.51	41.48	55.70	29.15	38.09	56.69	44.39	43.79	43.89	48.54
1.43	4.53	3.77	2.12	1.67	3.73	3.62	3.54	2.05	5.49	2.24	2.94	4.64	4.35
0.00	0.00	0.70	0.00	0.75	0.88	0.00	0.00	0.00	0.00	1.66	2.68	1.21	0.42
3.05	0.00	1.60	2.35	4.73	2.57	3.66	6.68	4.90	3.36	4.51	3.87	5.71	0.51
1.77	0.30	0.10	2.08	2.19	5.37	0.60	1.99	2.36	0.00	3.26	3.26	3.26	3.26
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.07	0.24	0.07	0.07	0.07	0.07	0.11	0.09	0.06	0.07	0.02	0.03	0.05	0.06
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.37	3.90	0.40	0.67	0.61	0.39	0.78	1.73	0.82	1.06	1.98	1.35	1.99	1.89
0.20	0.21	0.10	0.23	0.32	0.17	0.22	0.58	0.35	0.54	0.26	0.42	0.74	0.12
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.19	0.28	0.04	0.26	0.20	0.14	0.20	0.55	0.09	0.22	0.35	0.13	0.42	0.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.55	0.27	0.17	0.85	0.42	0.53	0.29	0.71	0.38	0.70	0.28	0.29	0.85	0.55
0.40	1.09	0.69	0.51	0.48	0.59	0.50	0.50	0.63	1.00	0.66	0.52	0.41	0.84
0.08	0.25	0.10	0.13	0.17	0.06	0.16	0.32	0.13	0.18	0.17	0.10	0.13	0.16
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.16	6.00	0.52	0.63	0.55	0.62	0.44	0.92	1.84	0.48	0.88	1.28	0.52	0.36
7.98	0.35	6.57	9.32	7.63	6.56	5.69	11.37	7.69	3.41	7.98	12.55	6.36	7.17
0.16	0.95	0.15	0.19	0.15	0.20	0.15	0.36	0.23	1.15	0.15	0.19	2.07	0.12
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.42	0.45	0.49	0.29	0.36	0.25	0.28	1.24	0.29	0.22	0.43	0.33	0.84	0.83
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.57	3.76	2.41	2.87	2.27	2.69	1.63	2.83	2.50	1.46	1.42	1.38	1.34	1.30
2.82	2.98	2.33	2.98	2.28	2.14	1.79	2.34	2.31	1.43	2.02	2.07	3.97	4.07
0.17	0.11	0.13	0.15	0.17	0.11	0.11	0.20	0.17	0.21	0.06	0.18	0.39	0.49
0.28	0.09	0.09	0.43	0.09	0.09	0.21	0.47	0.39	0.28	0.07	0.09	0.05	0.12
2.21	1.84	2.69	2.66	2.36	2.61	1.32	1.88	2.09	0.99	1.21	1.43	2.53	2.78
0.35	0.52	0.58	0.59	0.39	0.51	0.30	0.31	0.49	0.34	0.24	0.59	0.27	0.43
0.09	0.00	0.15	0.11	0.09	0.13	0.05	0.10	0.07	0.05	0.15	0.07	0.17	0.09
0.69	0.50	1.16	0.86	0.75	1.17	0.47	0.39	0.62	0.46	0.53	0.83	1.93	0.63
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.43	0.65	1.13	1.48	1.12	0.55	0.46	0.75	0.71	0.21	1.05	0.56	0.13	1.18

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.50	0.63	0.93	0.41	0.53	0.65	0.24	0.27	0.50	0.33	0.03	0.24	0.44	0.73
8.29	7.30	0.00	8.30	5.84	9.44	3.57	3.82	7.25	3.13	3.65	2.67	2.34	1.25
7.91	3.19	0.00	6.78	7.36	9.86	4.59	4.31	6.58	1.69	0.21	0.29	1.29	1.12
0.00	3.37	0.34	0.20	0.34	0.25	0.13	0.33	0.41	3.08	0.08	0.32	0.13	0.12
0.02	0.48	0.78	0.03	0.01	0.01	0.16	0.21	0.39	0.01	0.05	0.14	0.25	0.17
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Compounds	MW	IndVal Results B.muscorum	B. pereziellus	B. muscorum muscorum MusM01 Sweden	B. muscorum muscorum MusM02 Poland	B. muscorum muscorum MusM03 Russia	B. muscorum muscorum MusM04 Ireland	B. muscorum muscorum MusM05 Sweden	B. muscorum allenellus MusA01 Aran Island
Hexadecanol	242	0.24	0.25	0.19	0.24	0.48	0.04	0.27	0.02
Unknow_muscorum1		0.55	0.00	0.01	0.19	0.03	0.03	0.03	0.19
Hexadecanoic acid	256	0.55	0.00	0.02	0.12	0.06	0.02	0.04	0.02
Octadec-9-enal	266	0.41	0.01	0.76	0.00	0.50	0.00	0.54	0.05
Octadec-9-en-1-ol	268	0.06	0.83	17.93	17.60	31.10	7.87	16.76	8.89
heneicosane	296	0.34	0.19	0.08	0.24	0.28	0.14	0.11	0.23
Octadecenoic acid	282	0.36	0.00	0.07	1.02	0.00	0.01	0.15	0.09
Octadecadienoic acid	280	0.09	0.31	0.07	0.06	0.55	0.03	0.04	0.00
Octadec-9-en-1-yl acetate	310	0.52	0.01	57.52	63.82	54.93	72.81	51.85	65.25
tricos-9-ene	322	0.45	0.00	0.18	0.27	0.04	0.08	0.23	0.38
tricos-7-ene	322	0.11	0.54	0.09	0.10	0.04	0.29	0.44	0.32
docos-15-en-1-ol	324	0.27	0.00	0.00	0.00	0.08	0.15	0.06	0.00
Tricosane	324	0.36	0.14	4.03	4.08	3.79	4.67	3.57	4.97
octadec-9-enyl butyrate	338	0.17	0.04	0.06	1.02	0.05	0.13	0.05	0.05
Tetracosane	338	0.91	0.00	0.19	0.12	0.18	0.40	0.18	0.20
Pentacos-9-ene	350	0.32	0.11	1.32	1.79	0.60	1.41	4.17	3.11
Pentacos-7-ene	350	0.25	0.32	0.86	0.57	0.61	0.84	0.13	1.23
Pentacosane	352	0.73	0.00	2.97	2.16	2.72	4.67	3.63	3.87
Docosenyl acetate	366	0.91	0.00	0.19	0.08	0.04	0.21	0.15	0.09
Hexacosane	366	0.55	0.00	0.07	0.06	0.04	0.09	0.11	0.10
Heptacos-9-ene	378	0.55	0.00	0.54	1.02	0.35	1.70	1.03	1.46
Heptacos-7-ene	378	0.36	0.00	0.20	0.30	0.10	1.01	0.56	0.62
Heptacosane	380	0.45	0.00	0.83	0.63	0.36	0.11	1.82	1.24
Nonacos-9-ene	406	0.45	0.00	0.28	0.46	0.13	0.38	0.82	1.03
Nonacos-7-ene	406	0.45	0.00	0.08	0.09	0.03	0.15	0.26	0.29
Nonacosane	408	0.55	0.00	0.27	0.13	0.10	0.41	0.91	0.51
Triacontene	420	0.36	0.00	0.14	0.01	0.02	0.01	0.00	0.00
Triacontane	422	0.27	0.00	0.19	0.02	0.01	0.00	0.00	0.00
Hentriacontene	434	0.45	0.00	0.16	0.13	0.07	0.24	0.57	0.68
Hentriacontane	436	0.45	0.00	0.10	0.03	0.02	0.06	0.16	0.08
sterole		0.45	0.00	0.15	0.11	0.00	0.13	0.89	0.94
Unknow_muscorum14		0.45	0.00	0.12	0.14	0.12	0.01	0.35	0.10
octadecenyl hexadecanoate	506	0.55	0.00	0.61	0.44	0.32	0.15	1.16	0.36
Octadecenyl octadecenoate	532	0.64	0.00	6.50	2.27	1.49	1.53	6.15	2.32
Octadecenyl octadecanoate	534	0.45	0.00	3.21	0.68	0.78	0.22	2.82	1.32

B. muscorum liepetterseni MusL01 Sweden	B. muscorum liepetterseni MusL02 Sweden	B. muscorum liepetterseni MusL03 Sweden	B. muscorum liepetterseni MusL04 Sweden	B. muscorum liepetterseni MusL05 Sweden	B.pereziellus Perz01 Corsica	B.pereziellus Perz02 Corsica	B.pereziellus Perz03 Corsica	B.pereziellus Perz04 Corsica	B.pereziellus Perz05 Corsica	B.pereziellus Perz06 Corsica	B.pereziellus Perz07 Corsica
0.00	0.00	0.00	0.00	0.00	0.17	0.16	0.07	0.18	0.09	0.17	0.13
0.02	0.01	0.03	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.04	0.04	0.13	0.11	0.13	0.02	0.04	0.24	0.03	0.09	0.06	0.02
2.70	2.84	4.14	4.43	4.66	31.16	27.49	20.30	28.86	23.07	27.75	27.54
0.16	0.20	0.19	0.20	0.11	0.13	0.23	0.15	0.21	0.15	0.20	0.17
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.05	0.13	0.22	0.01	0.06	0.12	0.10	0.47	0.14	0.12	0.13	0.18
88.83	87.34	88.19	87.62	88.38	58.42	66.04	71.63	62.26	69.46	63.58	65.22
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.33	0.21	0.09	0.27	0.20	0.22	0.22
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.03	3.20	2.48	2.63	1.85	4.99	2.33	3.24	3.61	2.94	3.61	2.67
0.00	0.00	0.00	0.00	0.00	0.11	0.06	0.04	0.09	0.07	0.11	0.10
0.22	0.25	0.20	0.21	0.19	0.17	0.13	0.13	0.15	0.14	0.16	0.13
0.58	0.66	0.43	0.47	0.27	1.58	1.19	0.63	1.43	0.33	0.42	0.33
0.41	0.52	0.32	0.36	0.18	0.00	0.00	0.60	0.00	0.81	0.90	0.84
2.04	2.33	1.68	1.78	1.72	1.78	1.12	1.31	1.68	1.53	1.65	1.42
0.13	0.21	0.14	0.19	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.37	0.48	0.32	0.29	0.18	0.17	0.19	0.22	0.19	0.16	0.21	0.19
0.14	0.18	0.13	0.11	0.09	0.14	0.11	0.12	0.15	0.12	0.13	0.12
0.39	0.51	0.36	0.34	0.34	0.27	0.21	0.29	0.37	0.22	0.30	0.24
0.12	0.19	0.13	0.11	0.09	0.07	0.08	0.10	0.09	0.07	0.09	0.09
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.08	0.14	0.07	0.06	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.02	0.01	0.01	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.11	0.05	0.06	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.39	0.54	0.57	0.74	0.95	0.26	0.21	0.26	0.21	0.35	0.24	0.28
0.15	0.15	0.20	0.26	0.35	0.11	0.10	0.10	0.08	0.09	0.08	0.10

B.pereziellus Perz08 Corsica	B.pereziellus Perz09 Corsica	B.pereziellus Perz10 Corsica
0.20	0.16	0.11
0.00	0.00	0.00
0.00	0.00	0.00
0.03	0.10	0.03
25.99	27.80	26.34
0.21	0.15	0.19
0.00	0.00	0.00
0.15	0.17	0.15
65.05	64.10	67.56
0.00	0.00	0.00
0.35	0.22	0.18
0.00	0.00	0.00
3.52	3.11	2.22
0.10	0.10	0.08
0.15	0.14	0.11
1.58	0.58	0.43
0.00	0.84	0.67
1.59	1.38	0.98
0.00	0.00	0.00
0.00	0.00	0.00
0.23	0.26	0.19
0.15	0.14	0.11
0.24	0.27	0.20
0.10	0.10	0.08
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.26	0.28	0.28
0.10	0.10	0.09

Compounds	MW	IndVal Results B.vestalis	IndVal Results B. perezi	B. vestalis vestalis Vest01 N. France I	B. vestalis vestalis Vest02 N. France I	B. vestalis vestalis Vest03 N. France I	B. vestalis vestalis Vest04 N. France I	B. vestalis vestalis Vest05 N. France I	B. vestalis vestalis Vest06 N. France II	B. vestalis vestalis Vest07 Czech R.	B. vestalis vestalis Vest08 Czech R.
Farnesol	222	0.00	0.31	0.04	0.00	0.00	0.00	0.00	0.06	0.00	0.00
Hexadecen-1-ol	240	0.59	0.00	0.20	0.52	0.43	0.51	0.07	0.25	0.01	0.00
Tetradecyl acetate	256	0.45	0.00	0.20	0.89	0.81	0.70	0.00	0.08	0.00	0.00
Unknown Vestalis 1	?	0.52	0.00	0.00	0.76	0.58	0.61	0.29	0.09	0.06	0.12
Hexadecanoic acid	256	0.21	0.00	0.00	0.75	0.44	0.45	0.00	0.37	0.00	0.00
Octadec-11-enal	266	0.72	0.00	1.02	0.37	0.27	0.33	2.10	1.04	1.77	2.11
Octadec-13-enal	266	0.69	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Octadecadien-1-ol	266	0.62	0.00	0.30	0.00	0.00	0.00	0.27	0.37	0.00	0.00
Nonadecane	268	0.48	0.00	0.03	0.11	0.06	0.06	0.02	0.01	0.00	0.03
Octadecanal	268	0.48	0.00	0.12	2.65	2.54	3.01	0.16	0.11	0.23	0.39
Octadec-11-en-1-ol	268	0.66	0.00	0.96	0.00	0.00	0.00	0.82	0.87	0.06	0.26
Hexadec-9-enyl acetate	282	0.93	0.00	3.96	1.54	1.66	1.93	5.01	3.17	2.94	2.85
Hexadec-11-enyl acetate	282	0.47	0.06	0.43	0.46	0.57	0.67	0.62	0.28	0.82	0.48
Geranylgeraniol	290	0.03	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.30
Geranylcitronellol	292	0.50	0.21	23.59	21.99	38.51	29.17	33.78	36.37	35.33	45.96
Unknown Vestalis 2	?	0.52	0.00	0.00	0.00	0.00	0.00	0.00	7.90	0.00	0.00
Icosadienal	292	0.62	0.13	16.96	12.37	12.47	14.69	15.93	12.16	12.20	12.78
Icosatrienol	292	0.62	0.00	0.00	0.00	0.00	0.00	2.19	1.86	0.00	0.36
Icos-15-enal	294	0.66	0.00	2.77	0.00	0.00	0.00	1.64	2.07	2.30	0.47
Icosadienol	294	0.31	0.00	3.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Henicosane	296	0.26	0.02	0.50	6.51	5.41	7.18	0.53	0.50	0.35	1.00
Icos-15-en-1-ol	296	0.55	0.01	8.33	1.71	1.28	1.81	5.17	5.23	1.42	1.15
Octadecadienyl acetate	308	0.72	0.00	2.57	0.00	0.00	0.00	2.69	3.29	4.81	0.00
Octadec-13-enyl acetate	310	0.03	0.00	0.00	0.00	0.00	0.00	1.81	0.00	0.00	0.00
Docosenal	322	0.48	0.00	0.00	0.00	0.00	0.00	0.06	0.09	0.00	0.04
Tricosane	324	0.01	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Vestalis 3	?	1.00	0.00	2.45	14.02	8.54	9.67	1.80	1.89	4.17	3.16
Geranylcitronellyl acetate	334	0.23	0.34	22.71	2.66	3.12	4.20	18.84	17.99	25.37	19.02
Icos-11,15-adienyl acetate	336	0.05	0.58	1.69	0.00	0.00	0.00	0.52	0.52	0.31	0.14
Icos-15-enyl acetate	338	0.00	0.87	0.67	0.12	0.08	0.08	0.33	0.14	0.12	0.06
Pentacos-9-ene	350	0.24	0.00	0.01	0.82	0.54	0.69	0.05	0.01	0.01	0.05
Pentacos-7-ene	350	0.02	0.29	0.02	0.00	0.00	0.00	0.02	0.01	0.03	0.03
Pentacosane	352	0.02	0.83	1.27	5.97	3.40	3.44	0.86	0.57	1.05	1.31
Docosadienyl acetate	364	0.72	0.00	0.06	0.12	0.06	0.09	0.02	0.02	0.02	0.04
Hexacosene	364	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hexacosane	366	0.00	0.63	0.07	0.17	0.09	0.10	0.05	0.02	0.04	0.06
Heptacos-9-ene	378	0.59	0.00	0.05	0.00	0.00	0.00	0.11	0.03	0.07	0.15
Heptacos-7-ene	378	0.07	0.33	0.31	1.93	1.26	1.47	0.22	0.11	0.19	0.23
Heptacosane	380	0.03	0.59	1.56	5.04	2.93	3.08	1.28	0.59	1.80	1.80
Octacosene	392	0.01	0.66	0.02	0.13	0.08	0.10	0.01	0.01	0.01	0.02
Octacosane	394	0.00	0.47	0.05	0.15	0.06	0.09	0.04	0.02	0.03	0.04
Nonacos-9-ene	406	0.62	0.00	0.20	0.00	0.00	0.00	0.19	0.11	0.13	0.20
Nonacos-7-ene	406	0.07	0.33	0.64	2.78	2.24	2.32	0.38	0.26	0.35	0.45
Nonacosane	408	0.10	0.27	0.77	5.34	2.74	3.37	0.98	0.48	1.39	1.26
13-Methylnonacosane	422	0.45	0.00	0.17	1.42	0.56	0.75	0.18	0.11	0.29	0.16
Unknown Vestalis 4	?	0.00	0.21	0.02	0.33	0.12	0.17	0.01	0.01	0.00	0.01
Hentriacontene	434	0.41	0.00	0.21	1.26	0.91	0.76	0.09	0.06	0.08	0.17
Hentriacontane	436	0.31	0.00	0.05	0.65	0.25	0.32	0.03	0.02	0.05	0.05
Tetradecyl hexadecanoate	452	0.01	0.35	0.01	0.25	0.13	0.22	0.00	0.01	0.00	0.01
Unknown Vestalis 5	?	0.04	0.33	0.32	1.50	1.65	1.97	0.19	0.35	0.00	0.56
Tetradecyl octadecenoate	478	0.08	0.32	0.38	1.99	1.52	1.76	0.18	0.19	0.83	0.54
Geranylcitronellyl tetradecenoate	500	0.07	0.41	0.27	1.62	1.94	2.21	0.24	0.20	0.65	0.83
Octadecadienyl hexadecenoate	502	0.00	0.37	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Icosenyl tetradecanoate	504	0.00	0.42	0.11	0.38	0.39	0.44	0.09	0.03	0.24	0.16

Geranylcitronellyl hexadecenoate	528	0.00	0.58	0.09	0.22	0.52	0.36	0.05	0.03	0.04	0.35
Geranylcitronelly hexadecanoate	530	0.38	0.00	0.12	0.51	1.84	1.22	0.09	0.04	0.07	0.85

27.42	29380.678
27.82	34197.953
28.5	62771.077
30.05	41811.763
31.35	8348.783
31.87	14622.209

B. vestalis vestalis Vest09 Slovenia	B. vestalis vestalis Vest10 Denmark	B. vestalis vestalis Vest11 Sweden II	B. vestalis vestalis Vest12 NW. Italy I	B. vestalis vestalis Vest13 NW. Italy I	B. vestalis vestalis Vest14 E. Germany	B. vestalis vestalis Vest15 E. Germany	B. vestalis vestalis Vest16 Belgium I	B. vestalis vestalis Vest17 Roumania I	B. vestalis vestalis Vest18 Roumania I	B. vestalis vestalis Vest19 Roumania I
0.00	0.08	0.01	0.01	0.00	0.00	0.05	0.01	0.02	0.02	0.00
0.00	0.04	0.07	0.29	0.00	0.30	0.16	0.14	0.10	0.11	0.06
0.00	0.28	0.27	0.27	0.11	0.13	0.19	0.16	0.09	0.15	0.00
0.35	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
0.00	1.50	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.01	1.55	1.82	1.50	1.44	1.27	0.88	0.70	0.65	0.86	1.19
0.00	0.00	0.24	0.19	0.23	0.22	0.20	0.20	0.15	0.19	0.37
0.00	0.17	0.24	0.61	0.04	0.34	0.65	0.26	0.33	0.31	0.49
0.04	0.02	0.02	0.05	0.01	0.07	0.02	0.01	0.00	0.01	0.01
0.37	0.24	0.16	0.11	0.29	0.13	0.13	0.10	0.06	0.08	0.31
0.30	0.67	0.81	1.41	0.10	1.10	1.23	0.61	0.72	0.65	1.10
0.87	4.71	5.21	4.26	3.56	5.17	5.39	2.97	2.79	3.36	5.37
0.39	0.00	0.86	0.76	0.91	0.69	0.89	0.49	0.44	0.50	0.64
0.00	0.00	0.00	0.26	0.12	0.00	0.00	0.00	0.00	0.00	0.00
47.01	30.85	24.22	26.66	18.99	31.61	21.62	15.53	22.19	19.55	24.60
0.00	19.82	3.11	0.00	0.00	0.00	2.82	0.00	0.00	0.00	3.80
10.64	10.25	16.68	16.81	16.41	15.84	18.61	20.46	20.61	19.32	18.87
0.00	0.39	2.02	0.00	0.00	0.00	0.94	0.72	2.47	0.76	1.69
0.27	0.40	1.79	1.88	2.19	1.93	2.47	3.55	2.51	3.54	4.31
0.00	0.00	0.00	4.31	0.00	1.79	2.61	1.83	0.00	1.70	0.00
1.25	0.76	0.46	0.24	0.45	1.04	0.38	0.16	0.07	0.10	0.63
0.29	1.55	5.47	11.94	0.73	4.46	7.87	7.64	6.29	8.76	1.13
0.00	4.52	3.16	1.66	1.93	3.23	3.59	4.16	4.45	3.48	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.03	0.05	0.00	0.00	0.00	0.00	0.16	0.00	0.06	0.19	0.20
0.00	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00	0.00	7.56
4.52	2.65	2.18	2.28	3.21	2.76	1.87	1.71	1.45	1.99	4.21
14.95	13.83	23.81	18.21	29.42	19.64	20.46	30.96	27.73	27.58	17.33
0.00	0.16	1.20	1.06	1.01	0.62	1.46	2.73	1.93	1.80	0.71
0.00	0.06	0.38	0.55	0.36	0.33	0.48	1.13	0.56	0.68	0.34
0.16	0.04	0.02	0.01	0.07	0.03	0.01	0.01	0.01	0.01	0.03
0.05	0.02	0.02	0.03	0.04	0.01	0.01	0.02	0.01	0.01	0.01
2.34	0.85	1.11	1.17	1.57	0.90	1.04	0.97	1.29	1.08	1.59
0.07	0.03	0.03	0.02	0.05	0.05	0.02	0.02	0.01	0.01	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.10	0.05	0.06	0.05	0.08	0.05	0.06	0.04	0.05	0.04	0.05
0.41	0.08	0.05	0.05	0.14	0.10	0.07	0.04	0.05	0.04	0.03
0.32	0.14	0.28	1.10	0.39	0.29	0.15	0.20	0.18	0.14	0.11
2.59	1.03	1.36	0.11	2.53	1.33	1.25	0.95	1.15	0.97	1.55
0.02	0.02	0.02	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.00
0.07	0.03	0.04	0.03	0.07	0.03	0.04	0.06	0.05	0.05	0.03
0.64	0.18	0.16	0.09	0.39	0.20	0.24	0.07	0.10	0.10	0.09
0.68	0.31	0.42	0.39	0.80	0.62	0.36	0.32	0.27	0.24	0.18
2.11	0.81	0.79	0.47	1.79	0.84	0.71	0.46	0.54	0.45	0.52
0.34	0.13	0.12	0.07	0.29	0.17	0.08	0.05	0.03	0.04	0.03
0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.37	0.11	0.09	0.06	0.33	0.12	0.16	0.09	0.07	0.18	0.08
0.12	0.03	0.02	0.01	0.23	0.03	0.04	0.02	0.01	0.01	0.01
0.02	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
1.53	0.39	0.33	0.18	6.54	0.50	0.20	0.07	0.12	0.25	0.27
1.19	0.32	0.09	0.12	0.21	0.47	0.16	0.14	0.07	0.27	0.13
1.87	0.37	0.26	0.26	0.83	0.50	0.15	0.12	0.14	0.21	0.14
0.00	0.00	0.03	0.09	0.07	0.22	0.02	0.03	0.03	0.04	0.02
0.21	0.07	0.06	0.12	0.06	0.18	0.02	0.03	0.03	0.03	0.03

0.57	0.09	0.06	0.10	0.09	0.20	0.02	0.03	0.04	0.06	0.02
1.91	0.23	0.18	0.16	0.34	0.44	0.05	0.03	0.05	0.07	0.03

B. vestalis vestalis Vest20 SW France II	B. vestalis vestalis Vest21 SW France II	B. vestalis vestalis Vest22 Poland	B. vestalis vestalis Vest23 Poland	B. vestalis vestalis Vest24 Netherlands	B. vestalis vestalis Vest25 Belgium I	B. vestalis vestalis Vest26 W France	B. vestalis vestalis Vest27 Poland	B. vestalis vestalis Vest28 Netherlands	B. vestalis vestalis Vest29 Belgium I	B.perezi Pere01 Corsica
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.08	0.10	0.13	0.17	0.22	0.03	0.04	0.02	0.15	0.13	0.00
0.00	0.00	0.07	0.00	0.00	0.03	0.04	0.03	0.02	0.04	0.00
0.07	0.17	0.20	0.27	0.26	0.04	0.05	0.04	0.10	0.17	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.97	0.52	1.27	0.85	0.64	0.43	0.60	0.53	0.64	0.16
0.25	0.18	0.16	0.22	0.17	0.21	0.18	0.19	0.24	0.26	0.00
0.33	0.20	0.08	0.11	0.14	0.04	0.04	0.02	0.12	0.14	0.00
0.02	0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
0.24	0.21	0.10	0.28	0.17	0.20	0.14	0.28	0.13	0.14	0.00
0.67	0.70	0.21	0.62	0.47	0.24	0.21	0.14	0.62	0.86	0.00
2.81	3.17	2.67	3.02	3.35	2.33	3.17	2.45	2.98	3.72	0.91
0.35	0.43	0.35	0.40	0.36	0.25	0.28	0.23	0.43	0.47	1.19
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
31.05	23.45	8.47	19.62	17.41	14.19	13.28	10.58	9.68	9.15	0.82
3.17	2.95	3.94	2.51	3.77	3.17	2.77	2.17	4.49	5.52	0.00
17.53	13.87	21.99	15.40	3.66	6.22	6.65	8.78	6.14	4.86	11.30
1.45	0.00	1.20	1.16	0.78	1.84	1.90	1.18	0.86	0.93	0.00
3.58	1.57	4.57	3.83	0.38	0.82	0.50	0.81	0.00	0.00	0.00
0.00	0.00	0.00	0.00	1.38	0.00	0.00	0.00	1.57	1.70	0.00
0.58	0.38	0.13	0.51	0.33	0.17	0.20	0.27	0.13	0.09	0.32
1.20	2.05	4.04	4.48	6.39	5.92	5.99	5.28	5.00	2.44	0.92
0.00	1.46	0.00	1.50	15.24	21.14	24.49	22.81	22.54	22.32	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.24	0.00	0.00	0.00	0.00	0.14	0.28	0.13	0.16	0.13	0.00
5.53	3.03	2.53	2.34	1.61	0.00	0.00	0.00	1.48	6.20	6.58
3.28	2.68	1.72	3.82	2.52	2.49	2.28	2.88	2.29	1.98	0.00
20.46	35.25	36.65	30.74	32.64	34.21	28.82	33.21	31.39	27.94	39.46
0.67	1.57	5.75	2.67	3.45	1.15	2.69	2.56	4.15	4.71	18.45
0.28	0.57	1.61	0.96	1.15	0.49	0.79	1.11	0.84	1.13	6.89
0.04	0.04	0.00	0.02	0.01	0.00	0.01	0.01	0.01	0.01	0.00
0.01	0.01	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00
1.12	1.05	0.79	1.04	0.82	1.35	1.35	1.42	1.18	1.35	2.84
0.02	0.01	0.04	0.01	0.01	0.01	0.02	0.01	0.02	0.03	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.03	0.03	0.02	0.03	0.04	0.05	0.06	0.05	0.04	0.05	0.55
0.06	0.06	0.02	0.05	0.03	0.02	0.03	0.02	0.03	0.03	0.00
0.13	0.11	0.11	0.19	0.17	0.13	0.16	0.11	0.12	0.11	0.24
1.27	1.32	0.94	1.21	0.96	1.26	1.48	1.28	1.28	1.31	3.14
0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.15
0.04	0.02	0.03	0.02	0.02	0.06	0.07	0.06	0.06	0.05	0.24
0.13	0.12	0.05	0.07	0.05	0.04	0.09	0.04	0.07	0.07	0.00
0.29	0.22	0.17	0.20	0.20	0.24	0.34	0.19	0.23	0.19	0.49
0.57	0.37	0.33	0.33	0.28	0.54	0.65	0.59	0.58	0.66	0.96
0.05	0.03	0.01	0.03	0.03	0.02	0.03	0.01	0.02	0.02	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
0.18	0.10	0.06	0.05	0.05	0.05	0.10	0.06	0.07	0.07	0.00
0.01	0.01	0.00	0.01	0.00	0.01	0.02	0.02	0.02	0.02	0.00
0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
0.50	0.43	0.08	0.25	0.20	0.05	0.08	0.12	0.04	0.13	0.02
0.21	0.32	0.10	0.17	0.14	0.04	0.11	0.08	0.07	0.09	0.51
0.31	0.43	0.08	0.22	0.13	0.09	0.10	0.08	0.06	0.07	0.67
0.02	0.04	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.09
0.03	0.06	0.01	0.05	0.02	0.01	0.01	0.01	0.01	0.02	0.81

0.04	0.09	0.01	0.04	0.03	0.02	0.02	0.02	0.01	0.02	1.90
0.06	0.14	0.01	0.06	0.05	0.01	0.01	0.01	0.01	0.01	0.00

B.perezi Pere02 Corsica	B.perezi Pere03 Corsica	B.perezi Pere04 Corsica	B.perezi Pere05 Corsica	B.perezi Pere06 Corsica	B.perezi Pere07 Corsica	B.perezi Pere08 Corsica	B.perezi Pere09 Corsica	B.perezi Pere10 Corsica	B.perezi Pere11 Corsica	B.perezi Pere12 Corsica	B.perezi Pere13 Corsica	B.perezi Pere14 Corsica	B.perezi Pere15 Corsica	B.perezi Pere16 Corsica
0.00	0.04	0.11	0.04	0.09	0.04	0.22	0.06	0.03	0.00	4.01	0.00	0.30	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.34	0.10	0.11	0.16	0.13	0.05	0.09	0.03	0.07	0.00	1.51	0.10	0.15	0.23	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.48	0.00	0.00	0.00	0.00	1.03	0.40	0.09	0.21	1.48	0.80	0.09	0.52	0.75	0.00
0.11	0.44	0.20	0.06	0.17	0.06	0.17	0.00	0.00	0.19	0.00	0.00	1.83	0.04	0.00
0.31	0.05	0.00	0.48	0.00	0.00	0.09	0.06	0.52	0.13	0.11	0.18	0.17	0.08	0.10
19.27	6.65	18.76	24.30	21.79	23.47	0.35	32.54	24.62	16.63	0.26	19.41	30.97	1.33	0.37
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8.76	7.99	4.13	10.77	0.00	0.56	0.00	0.86	9.73	17.22	5.08	12.14	11.25	9.04	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.79	0.27	0.50	0.46	0.28	0.42	0.25	0.44	0.28	0.34	0.23	0.30	0.52	0.27	0.00
20.88	0.00	0.00	0.00	0.00	0.65	0.00	0.10	0.26	0.81	0.40	0.00	0.77	1.02	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.71	14.29	19.82	22.03	14.19	15.93	14.62	21.87	24.42	7.96	5.13	9.53	18.74	7.78	4.52
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22.59	36.11	20.93	24.23	29.00	33.63	14.55	20.85	18.48	34.22	35.71	16.74	20.03	47.99	12.69
2.51	10.03	14.69	1.80	6.05	9.91	0.41	4.60	2.03	2.04	16.30	3.71	1.74	18.18	0.00
7.28	2.13	2.58	6.13	1.25	2.36	1.58	4.83	2.95	2.59	1.60	3.01	2.20	3.54	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.06	0.02	0.06	0.00	0.02	0.22	0.00
1.53	2.66	5.16	3.35	6.05	2.54	4.99	4.60	4.51	4.24	2.80	4.46	2.68	3.07	4.24
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
0.08	1.27	0.24	0.14	1.80	0.15	0.21	0.15	0.77	0.38	0.16	0.16	0.25	0.35	0.42
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.20	0.05	0.92	0.39	1.70	0.44	0.55	0.41	0.89	0.50	0.30	0.51	0.49	0.22	0.11
1.67	1.46	4.92	2.82	5.61	1.82	4.62	1.80	2.14	4.38	0.80	2.47	3.33	1.85	2.71
0.11	0.09	0.20	0.06	0.14	0.06	0.22	0.13	0.07	0.11	0.00	0.13	0.14	0.08	0.00
0.04	0.03	0.16	0.04	0.06	0.05	0.59	0.11	0.18	0.12	1.32	0.21	0.02	0.27	2.23
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.22	0.26	0.87	0.46	0.95	0.98	2.49	1.59	1.51	0.79	5.92	0.81	0.44	0.23	0.00
1.54	0.40	1.33	0.54	1.40	0.42	14.75	0.55	0.51	1.12	0.40	5.47	1.53	0.27	0.27
0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.15	0.00	0.00	0.00	0.04	0.03	5.19	0.17	0.04	0.07	3.24	0.00	0.12	0.06	6.46
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.39	3.59	0.00	0.00	0.03	0.02	0.12	0.17	0.11	0.04	0.15	1.94	0.00	0.00	0.00
0.50	4.06	3.79	0.85	6.85	3.39	0.04	0.45	1.53	0.03	0.06	0.01	0.00	0.02	0.00
0.41	0.00	0.00	0.00	0.09	0.32	0.18	0.02	1.63	1.13	0.82	0.17	0.11	1.67	0.46
0.19	0.00	0.16	0.74	1.23	1.06	0.61	0.67	0.71	1.08	0.15	1.67	0.30	0.09	0.00
4.65	0.00	0.00	0.00	0.73	0.02	23.74	1.04	0.02	0.04	5.66	6.68	0.00	0.75	0.00
0.40	0.00	0.00	0.00	0.00	0.12	0.00	0.39	0.04	1.19	3.94	3.56	0.49	0.43	65.43

0.85	8.01	0.42	0.14	0.33	0.47	8.97	1.33	1.67	1.15	3.05	6.53	0.87	0.19	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B.perezi Pere17 Corsica	B.perezi Pere18 Corsica	B.perezi Pere19 Corsica
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.19	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.69	0.00	0.00
0.00	0.00	0.00
0.06	0.00	0.00
2.63	0.00	36.86
0.00	0.00	0.00
15.87	10.49	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
1.76	0.00	0.00
0.66	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
9.72	5.05	4.52
0.00	0.00	0.00
32.23	21.89	32.21
2.34	0.00	0.00
1.86	0.00	1.19
0.00	0.00	0.00
0.00	0.19	0.08
3.63	2.89	2.26
0.00	0.00	0.00
0.00	0.00	0.00
0.12	0.33	0.52
0.00	0.00	0.00
0.39	0.00	0.12
2.47	2.41	2.60
0.00	0.00	0.00
0.34	0.00	0.00
0.00	0.00	0.00
0.16	0.00	0.00
0.37	0.00	0.55
0.00	0.00	0.00
2.56	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	2.77	18.49
0.08	6.47	0.59
0.96	15.98	0.00
0.00	0.00	0.00
12.28	31.53	0.00

8.62	0.00	0.00
0.00	0.00	0.00

Composes	MW	IndVal Results: Continental B. pascuorum	IndVal Results: Corsican B. pascuorum	B. pascuorum pascuorum PasM06	B. pascuorum pascuorum PasM07	B. pascuorum pascuorum PasM08	B. pascuorum pascuorum PasM09
Tetradecenol	212	0.07	0.79	0.07	0.05	0.05	0.11
Tetradecanol	214	0.00	0.98	0.07	0.07	0.03	0.12
Tetradecanoic acid	228	0.17	0.32	0.01	0.01	0.01	0.02
Hexadec-7-enal	238	0.07	0.86	25.72	22.49	14.81	39.99
Hexadec-7-enol	240	0.25	0.33	23.40	19.24	10.54	27.74
Hexadecanol	242	0.53	0.13	0.32	0.29	0.16	0.31
Hexadecenoic acid	254	0.71	0.00	5.49	6.61	11.52	2.57
Hexadecanoic acid	256	0.58	0.02	0.32	0.39	0.56	0.12
Hexadecenyl acetate	282	0.11	0.41	0.74	0.64	1.37	2.01
Hexadecyl acetate	284	0.08	0.57	0.06	0.03	0.13	0.01
Octadec-9-en-1-ol	268	0.35	0.00	1.73	1.09	0.55	1.25
Icosane	282	0.57	0.00	0.04	0.04	0.01	0.07
Henicosane	296	0.54	0.01	0.14	0.11	0.06	0.08
Unknown Pascuorum 1	?	0.02	0.89	0.08	0.07	0.09	0.06
Unknown Pascuorum 2	?	0.57	0.00	0.09	0.05	0.03	0.07
Octadecenoic acid	282	0.71	0.00	3.27	2.84	5.18	1.20
Octadecenyl acetate	310	0.37	0.05	0.43	0.47	0.82	0.19
Docosane	310	0.57	0.00	0.24	0.20	0.43	0.25
Tricos-9-ene	322	0.14	0.00	0.10	0.13	0.20	0.10
Tricos-7-ene	322	0.29	0.00	0.08	0.07	0.08	0.04
Tricosane	324	0.56	0.04	2.62	3.97	4.26	3.48
Tetracosene I	336	0.29	0.00	0.03	0.04	0.02	0.01
Tetracosene II	336	0.36	0.00	0.03	0.07	0.09	0.04
Tetracosane	338	0.58	0.02	0.08	0.14	0.12	0.11
Pentacos-7-ene	350	0.29	0.00	0.00	0.01	0.00	0.01
Pentacos-9-ene	350	0.79	0.00	1.96	3.49	6.05	2.51
Pentacosane	352	0.64	0.00	2.09	3.14	3.17	2.51
Hexacosene	364	0.71	0.00	0.05	0.10	0.18	0.06
Hexacosane	366	0.64	0.00	0.06	0.12	0.12	0.07
Heptacos-9-ene	378	0.71	0.00	1.00	1.64	2.81	1.22
Heptacosane	380	0.64	0.00	0.63	1.07	1.33	0.80
Octacosene	392	0.57	0.00	0.04	0.06	0.09	0.04
Octacosane	394	0.57	0.00	0.06	0.06	0.15	0.03
Nonacos-9-ene	406	0.79	0.00	0.65	1.04	1.64	0.83
Nonacosane	408	0.64	0.00	0.34	0.69	1.09	0.57
Triacontene	422	0.50	0.00	0.01	0.02	0.02	0.00
Triacontene	422	0.79	0.00	0.05	0.07	0.11	0.04
Triacontane	422	0.57	0.00	0.06	0.12	0.18	0.03
Hentriacontene	434	0.86	0.00	0.62	1.13	2.06	0.72
Hentriacontane	436	0.64	0.00	0.18	0.40	0.43	0.20
Hexadecenyl tetradecenoate	448	0.79	0.00	0.09	0.10	0.12	0.05
Tetradecyl hexadecenoate	450	0.79	0.00	0.10	0.14	0.11	0.04
Dotriacontene	448	0.57	0.00	0.12	0.17	0.29	0.11
Dotriacontane	450	0.43	0.00	0.06	0.09	0.09	0.04
Unknown Pascuorum 3	?	0.71	0.00	1.29	1.58	2.82	0.69
Unknown Pascuorum 4	450	0.64	0.00	0.12	0.28	0.40	0.15
Tritriacontene	462	0.50	0.00	0.04	0.11	0.07	0.07
Hexadecenyl hexadecenoate	476	0.86	0.00	17.22	17.70	16.19	6.71
Hexadecenyl octadecenoate	504	0.79	0.00	1.15	1.19	1.10	0.60
Hexadecenyl octadecatrienoate	500	0.86	0.00	0.33	0.45	0.41	0.14
Hexadecyl octadecenoate	506	0.36	0.00	0.04	0.12	0.00	0.01
Octadecadienyl octadecenoate	530	0.79	0.00	2.95	2.18	2.51	0.69
Octadecenyl octadecenoate	532	0.64	0.00	3.54	3.63	5.34	1.14

B. pascuorum pascuorum PasM10	B. pascuorum pascuorum PasM11	B. pascuorum pascuorum PasM12	B. pascuorum pascuorum PasM13	B. pascuorum pascuorum PasM14	B. pascuorum pascuorum PasM15	B. pascuorum pascuorum PasM16
0.03	0.02	0.17	0.11	0.24	0.03	0.03
0.06	0.00	0.10	0.04	0.04	0.05	0.07
0.10	0.01	0.07	0.05	0.14	0.03	0.03
28.78	0.00	17.64	1.28	6.42	14.10	8.46
24.12	30.63	26.63	18.59	10.32	2.49	15.52
0.20	0.37	0.42	0.30	0.28	0.24	0.35
5.85	0.33	12.24	23.88	20.19	18.57	20.84
0.52	0.24	0.22	0.38	0.46	0.72	0.59
1.07	2.32	0.62	0.81	0.53	0.36	0.59
0.00	0.00	0.06	0.03	0.02	0.11	0.11
0.98	23.91	2.06	1.17	0.85	1.80	0.78
0.15	0.00	0.04	0.00	0.00	0.08	0.12
0.00	0.28	0.10	0.13	0.05	0.13	0.09
0.07	0.08	0.08	0.05	0.05	0.13	0.14
0.05	0.03	0.13	0.05	0.04	0.12	0.10
7.20	2.55	2.31	5.27	7.64	10.67	5.93
0.92	0.59	0.31	0.76	0.73	1.17	0.76
0.00	1.38	0.21	0.35	0.38	0.45	0.21
0.10	14.32	0.13	0.13	0.15	0.13	0.15
0.21	0.02	0.08	0.04	0.04	0.29	0.13
3.01	1.43	3.46	2.70	3.21	3.29	4.26
0.00	0.14	0.02	0.00	0.00	0.14	0.07
0.03	0.46	0.08	0.01	0.01	0.07	0.08
0.09	0.05	0.11	0.07	0.10	0.01	0.01
0.00	0.00	0.00	0.04	0.11	0.14	0.15
4.13	1.04	4.18	2.66	4.38	3.26	4.01
2.09	1.55	1.86	1.45	1.87	3.12	3.24
0.09	0.14	0.08	0.06	0.11	0.10	0.10
0.05	0.08	0.04	0.05	0.05	0.09	0.09
1.61	4.98	1.13	1.04	1.63	1.44	1.73
0.57	1.42	0.38	0.50	0.44	1.01	1.01
0.05	0.14	0.04	0.03	0.08	0.06	0.06
0.06	0.13	0.02	0.03	0.03	0.12	0.09
0.94	2.23	0.65	0.82	1.02	0.93	1.06
0.27	0.62	0.00	0.38	0.26	0.71	0.65
0.20	0.03	0.04	0.03	0.07	0.03	0.03
0.00	0.03	0.04	0.05	0.06	0.08	0.09
0.00	0.09	0.04	0.05	0.07	0.16	0.12
1.01	0.29	0.85	0.94	1.07	0.95	1.44
0.13	0.03	0.11	0.21	0.15	0.46	0.41
0.05	0.02	0.09	0.15	0.16	0.20	0.14
0.13	0.03	0.08	0.10	0.13	0.19	0.17
0.11	0.17	0.08	0.14	0.14	0.32	0.26
0.04	0.02	0.09	0.18	0.14	0.47	0.26
1.40	0.71	0.65	0.75	0.89	1.27	1.41
0.27	0.00	0.23	0.19	0.24	0.27	0.41
0.07	0.04	0.07	0.08	0.10	0.18	0.15
8.01	0.05	18.18	26.20	25.97	20.69	15.79
0.96	1.26	0.00	0.86	1.22	2.26	1.15
0.30	0.36	0.23	0.35	0.31	0.64	0.59
0.02	0.04	0.07	0.44	0.17	0.37	0.36
1.51	1.95	2.02	4.11	4.37	4.78	3.13
2.36	3.37	1.45	1.93	2.84	0.50	2.45

B. pascuorum intermedius PasI01 S.France	B. pascuorum intermedius PasI02 S.France	B. pascuorum intermedius PasI03 S.France	B. pascuorum melleofacies PasM01 Corsica	B. pascuorum melleofacies PasM02 Corsica	B. pascuorum melleofacies PasM03 Corsica	B. pascuorum melleofacies PasM04 Corsica
0.08	0.13	0.06	0.16	0.17	0.16	0.20
0.07	0.12	0.01	0.24	0.23	0.23	0.26
0.03	0.02	0.08	0.10	0.07	0.04	0.05
22.71	26.44	38.95	64.32	67.09	69.94	57.45
13.28	27.64	30.26	19.35	18.04	15.66	27.20
0.35	0.45	0.35	0.38	0.30	0.07	0.05
15.94	9.29	5.59	1.76	1.12	1.24	5.30
0.35	0.24	0.13	0.35	0.04	0.07	0.13
0.33	0.88	0.36	0.46	1.62	1.01	0.18
0.13	0.00	0.01	0.09	0.15	0.11	0.04
1.39	1.66	1.50	1.36	1.57	1.24	1.15
0.14	0.00	0.02	0.00	0.00	0.00	0.00
0.14	0.16	0.09	0.10	0.06	0.00	0.07
0.08	0.03	0.12	0.11	0.11	0.20	0.20
0.10	0.07	0.09	0.05	0.05	0.00	0.00
2.52	1.80	0.78	0.28	0.27	0.56	0.56
0.41	0.31	0.13	0.53	0.77	0.45	0.53
0.21	0.23	0.09	0.04	0.03	0.03	0.02
1.59	0.08	0.27	0.06	0.05	0.05	0.04
0.29	0.04	0.07	0.02	0.03	0.02	0.01
3.42	3.45	2.71	3.54	2.44	2.72	1.18
0.43	0.02	0.00	0.00	0.00	0.00	0.03
0.37	0.05	0.02	0.03	0.01	0.02	0.02
0.14	0.12	0.07	0.09	0.06	0.07	0.02
0.29	0.00	0.04	0.00	0.01	0.01	0.00
2.79	2.74	1.57	1.38	0.96	1.13	0.74
2.59	3.51	1.09	1.55	1.06	1.31	0.52
0.09	0.08	0.00	0.04	0.02	0.04	0.02
0.08	0.08	0.04	0.03	0.02	0.03	0.01
1.47	1.17	0.55	0.49	0.34	0.40	0.22
0.96	1.16	0.27	0.17	0.15	0.19	0.13
0.06	0.04	0.01	0.02	0.01	0.01	0.01
0.08	0.05	0.02	0.01	0.01	0.00	0.01
0.91	0.69	0.29	0.18	0.12	0.14	0.07
0.54	0.69	0.19	0.04	0.05	0.07	0.07
0.01	0.02	0.02	0.00	0.00	0.00	0.00
0.06	0.04	0.00	0.01	0.01	0.01	0.00
0.05	0.06	0.02	0.01	0.01	0.01	0.01
0.91	0.75	0.01	0.15	0.11	0.13	0.07
0.34	0.40	0.30	0.01	0.02	0.03	0.04
0.13	0.09	0.08	0.01	0.01	0.01	0.01
0.09	0.08	0.04	0.01	0.01	0.01	0.00
0.09	0.09	0.09	0.01	0.01	0.02	0.01
0.64	0.13	0.04	0.01	0.01	0.01	0.01
1.16	1.44	0.03	0.03	0.04	0.02	0.04
1.35	0.00	0.71	0.04	0.04	0.04	0.02
0.34	0.13	0.02	0.01	0.02	0.01	0.02
16.36	9.77	11.31	1.49	1.79	1.71	2.42
0.69	0.78	0.00	0.24	0.31	0.26	0.35
0.59	0.59	0.65	0.01	0.01	0.01	0.01
0.08	0.07	0.04	0.00	0.00	0.00	0.00
1.73	1.14	0.47	0.04	0.06	0.05	0.05
1.01	0.96	0.34	0.02	0.03	0.04	0.03

B. pascuorum melleofacies PasM05 Corsica
0.15
0.19
0.00
49.44
39.61
0.00
0.28
0.04
2.57
0.10
0.88
0.00
0.00
0.16
0.00
0.20
0.46
0.02
0.02
0.02
1.51
0.00
0.01
0.05
0.01
0.68
1.27
0.02
0.02
0.21
0.23
0.01
0.01
0.08
0.09
0.00
0.00
0.01
0.07
0.05
0.01
0.00
0.01
0.00
0.01
0.02
0.02
0.92
0.12
0.01
0.00
0.02
0.02

		IndVal Results		B. hortorum jonghei HorJ01 Corsica	B. hortorum jonghei HorJ02 Corsica	B. hortorum jonghei HorJ03 Corsica	B. hortorum jonghei HorJ04 Corsica	B. hortorum jonghei HorJ05 Corsica
Compounds	MW	B.hortorum hortorum	B. hortorum jonghei					
Heptadecene	238	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Heptadecane	240	0.01	0.81	0.23	0.42	0.30	0.38	0.26
Unknow_jonghei1	?	0.78	0.00	0.22	0.39	0.35	0.36	0.21
Farnesol	222	0.06	0.81	10.89	7.21	8.91	8.34	8.19
Farnesal	220	0.52	0.00	2.57	2.11	1.97	1.22	2.02
Octadec-9-ene	252	0.23	0.22	0.28	0.47	0.31	0.38	0.26
Octadec-7-ene	252	0.63	0.00	0.03	0.00	0.05	0.27	0.03
Hexadecanal	240	0.63	0.00	0.21	0.24	0.19	0.66	0.19
Farnesylacetate	264	0.36	0.03	0.11	0.00	0.00	0.00	0.00
Nonadec-9-ene	266	0.46	0.05	21.18	28.90	25.12	26.52	20.54
Nonadecane	268	0.06	0.79	2.60	3.41	2.85	3.13	3.22
Farnesyl acetone	262	0.67	0.00	0.07	0.20	0.12	0.16	0.07
Octadec-9-en-1-ol	268	0.41	0.00	0.00	0.00	0.00	0.00	0.00
Icos-9-ene	280	0.15	0.46	0.17	0.25	0.20	0.21	0.19
Icosane	282	0.56	0.00	0.23	0.31	0.27	0.30	0.25
Hexadecyl acetate	284	0.42	0.01	0.01	0.12	0.04	0.04	0.00
Octadec-9-en-1-ol	268	0.13	0.74	9.91	11.09	10.19	10.59	8.90
Octadec-7-en-1-ol	268	0.74	0.00	0.00	0.00	0.00	0.00	0.00
Octadecanol	270	0.58	0.05	0.52	0.41	0.49	0.39	0.55
Geranylgeranial	288	0.49	0.08	0.45	0.43	0.49	0.45	0.47
Heneicosane	296	0.25	0.35	7.24	9.35	8.09	9.56	8.35
Docos-9-ene	308	0.44	0.00	0.52	0.68	0.70	1.22	0.58
Docos-7-ene	308	0.41	0.00	0.00	0.00	0.00	0.00	0.00
Octadec-9-enyl acetate	310	0.29	0.05	0.08	0.05	0.10	0.06	0.10
Docosane	310	0.04	0.28	0.00	0.06	0.00	0.24	0.00
Geranylgeraniol	290	0.59	0.00	5.87	5.29	6.73	5.75	6.98
Geranylgeranial	288	0.23	0.48	16.92	9.32	13.20	9.25	18.69
Tricos-9-ene	322	0.22	0.33	1.48	1.41	1.54	1.43	1.16
Docos-15-en-1-ol	324	0.01	0.95	8.12	7.24	7.75	8.36	10.27
Tricosane	324	0.31	0.18	7.18	7.54	6.84	7.93	5.91
Tetracos-9-ene	336	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Tetracos-7-ene	336	0.41	0.00	0.00	0.00	0.00	0.00	0.00
Icos-11-enyl acetate	338	0.43	0.00	0.20	0.12	0.16	0.12	0.15
Tetracosane	338	0.41	0.00	0.00	0.00	0.00	0.00	0.00
Pentacos-9-ene	350	0.59	0.00	0.56	0.88	0.80	0.74	0.56
Pentacosane	352	0.32	0.14	1.56	1.50	1.60	1.50	1.47
Heptacos-9-ene	378	0.67	0.00	0.14	0.21	0.19	0.16	0.10
Heptacosane	380	0.55	0.00	0.31	0.28	0.39	0.23	0.29
Octacos-9-ene	392	0.63	0.00	0.00	0.00	0.00	0.00	0.00
Octacos-7-ene	392	0.52	0.00	0.00	0.00	0.00	0.00	0.00
Octacosane	394	0.48	0.00	0.00	0.00	0.00	0.00	0.00
Nonacos-9-ene	406	0.44	0.00	0.00	0.00	0.00	0.00	0.00
Nonacos-7-ene	406	0.33	0.00	0.00	0.00	0.00	0.00	0.00
Nonacosane	408	0.11	0.00	0.00	0.00	0.00	0.00	0.00
Hentriacont-7-ene	434	0.74	0.00	0.00	0.00	0.00	0.00	0.00

Hentriacont-9-ene	434	0.74	0.00	0.00	0.00	0.00	0.00	0.00
Hentriacontane	436	0.85	0.00	0.00	0.00	0.00	0.00	0.00
Farnesyl hexadecenoate	458	0.78	0.00	0.14	0.11	0.05	0.03	0.02
Farnesyl octadecenoate	486	0.63	0.00	0.00	0.00	0.00	0.00	0.00
Icosenyl tetradecenoate	504	0.67	0.00	0.00	0.00	0.00	0.00	0.00

B. hortorum jonghei HorJ06 Corsica	B. hortorum jonghei HorJ07 Corsica	B. hortorum jonghei HorJ08 Corsica	B. hortorum jonghei HorJ09 Corsica	B. hortorum jonghei HorJ10 Corsica	B. hortorum jonghei HorJ11 Corsica	B. hortorum jonghei HorJ12 Corsica	B. hortorum jonghei HorJ13 Corsica	B. hortorum jonghei HorJ14 Corsica
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.34	0.37	0.36	0.17	0.32	0.38	0.36	0.37	0.28
0.21	0.40	0.29	0.21	0.12	0.41	0.32	0.18	0.58
8.79	10.37	9.77	13.15	5.11	9.50	7.04	5.63	7.90
2.17	1.93	1.81	2.04	1.33	1.96	1.45	1.22	2.49
0.37	0.32	0.28	0.22	0.37	0.33	0.35	0.39	0.32
0.00	0.02	0.07	0.06	0.00	0.09	0.00	0.01	0.05
0.17	0.11	0.13	0.13	0.20	0.19	0.13	0.13	0.19
0.05	0.74	0.10	0.11	0.00	0.14	0.35	0.06	0.00
25.49	23.96	20.17	18.65	25.42	24.77	25.91	28.94	25.53
2.98	3.01	3.98	1.79	3.60	3.24	3.02	4.25	2.49
0.09	0.13	0.13	0.15	0.08	0.12	0.13	0.08	0.16
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.22	0.20	0.19	0.15	0.24	0.25	0.25	0.25	0.20
0.29	0.30	0.31	0.20	0.33	0.31	0.33	0.34	0.27
0.02	0.03	0.00	0.00	0.00	0.03	0.04	0.00	0.10
10.86	10.17	9.71	9.99	9.61	12.78	11.25	8.77	10.89
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.00
0.43	0.49	0.58	0.68	0.55	0.40	0.45	0.52	0.54
0.46	0.52	0.52	0.72	0.47	0.42	0.53	0.45	0.61
8.48	8.79	10.35	6.87	9.97	8.08	8.96	10.46	7.51
0.81	0.63	0.45	0.00	0.00	0.69	0.00	0.40	0.55
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.15	0.09	0.54	0.87	0.00	1.07	0.00	0.00
0.13	0.00	0.00	0.00	0.00	0.01	0.12	0.09	0.11
6.41	7.48	7.32	9.24	6.22	5.37	6.98	5.76	6.88
12.38	12.84	17.59	24.43	18.05	10.20	12.49	16.05	13.57
1.10	1.23	1.27	1.38	0.99	1.29	1.15	1.26	1.52
8.17	6.74	6.13	4.14	6.96	9.98	8.75	5.40	8.28
6.81	6.33	6.28	3.52	7.06	6.53	6.21	6.36	6.18
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.13	0.52	0.15	0.07	0.18	0.21	0.17	0.17	0.12
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.74	0.66	0.54	0.65	0.48	0.64	0.57	0.55	0.85
1.40	1.14	1.14	0.52	1.20	1.26	1.14	1.09	1.38
0.14	0.14	0.10	0.07	0.08	0.13	0.12	0.08	0.22
0.33	0.25	0.15	0.11	0.19	0.24	0.32	0.17	0.20
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.03	0.03	0.03	0.03	0.02	0.04	0.04	0.03	0.04
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B. hortorum hortorum HorH01 Sweden	B. hortorum hortorum HorH02 Sweden	B. hortorum hortorum HorH03 Highland	B. hortorum hortorum HorH04 Germany	B. hortorum hortorum HorH05 Austria	B. hortorum hortorum HorH06 Austria	B. hortorum hortorum HorH07 Belgium	B. hortorum hortorum HorH08 Belgium
0.10	0.05	0.02	0.07	0.11	0.13	0.06	0.08
0.09	0.09	0.13	0.10	0.07	0.43	0.15	0.13
3.28	1.18	1.20	0.87	1.02	1.74	2.24	2.03
1.73	6.24	0.00	9.46	1.28	2.69	1.25	5.21
7.58	4.69	1.81	4.05	2.47	3.21	5.22	5.30
0.16	0.14	0.29	0.28	0.33	0.35	0.36	0.23
0.14	0.06	1.28	0.02	1.50	1.16	0.71	0.83
0.35	0.19	2.09	0.09	2.56	2.40	1.58	0.15
0.59	1.36	0.01	0.76	0.06	0.09	1.33	1.96
17.63	19.22	28.31	29.15	25.24	24.54	27.70	23.05
1.41	1.88	2.51	2.48	1.60	2.74	2.04	1.10
0.25	0.11	0.19	0.17	0.37	0.56	0.26	0.36
0.07	0.02	1.08	0.04	0.67	0.32	0.04	0.01
0.15	0.12	0.20	0.17	0.13	0.14	0.13	0.08
0.64	0.35	0.40	0.39	0.56	0.43	0.36	0.85
0.33	0.22	0.01	0.16	0.01	0.02	0.67	0.00
6.61	8.69	0.63	6.09	1.41	5.20	2.12	9.45
0.71	0.00	0.25	1.19	1.42	1.55	0.98	0.94
0.63	0.70	0.27	0.63	0.70	0.62	0.52	0.61
0.74	0.61	0.06	0.54	0.57	0.47	0.49	0.80
5.63	6.78	8.57	8.42	7.12	10.74	7.94	6.28
0.00	0.00	15.88	0.70	8.07	4.00	0.57	0.23
0.00	0.00	0.00	0.04	0.04	0.04	0.04	0.00
4.36	0.94	2.03	0.60	0.43	0.33	0.33	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.01	11.51	5.60	7.77	9.12	7.36	15.02	10.06
16.07	21.58	8.48	14.94	15.89	9.84	9.56	13.95
1.15	1.34	0.79	1.16	0.92	1.03	0.65	2.19
3.69	3.92	0.35	2.03	0.49	1.42	1.04	3.84
4.62	3.66	5.47	4.00	5.81	7.49	5.80	4.65
0.15	0.01	0.13	0.06	0.05	0.09	0.11	0.03
0.40	0.36	0.04	0.07	0.02	0.02	0.59	0.12
1.44	1.08	0.15	0.46	0.12	0.16	3.19	0.26
0.01	0.00	0.00	0.01	0.03	0.02	0.00	0.00
0.65	0.66	1.18	0.75	1.23	1.22	0.93	1.45
1.11	0.52	1.82	0.70	1.43	1.53	1.60	0.66
0.21	0.16	0.54	0.18	0.66	0.44	0.36	0.34
0.45	0.16	1.18	0.24	0.55	0.42	0.88	0.12
0.07	0.05	0.21	0.06	0.26	0.16	0.13	0.08
0.06	0.03	0.21	0.03	0.13	0.17	0.17	0.04
0.04	0.12	1.31	0.00	0.07	0.37	0.08	0.08
0.05	0.05	0.43	0.03	0.12	0.05	0.07	0.05
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
0.01	0.03	0.67	0.00	0.00	0.02	0.00	0.00
0.04	0.03	0.03	0.04	0.08	0.09	0.08	0.05

0.23	0.27	0.29	0.22	0.86	0.58	0.62	0.71
0.23	0.15	0.20	0.16	0.59	0.39	0.34	0.27
0.14	0.07	0.26	0.10	0.36	0.24	0.19	0.15
0.42	0.27	1.53	0.15	1.52	1.19	0.80	0.66
0.40	0.22	1.34	0.14	1.08	0.81	0.56	0.36

B. hortorum hortorum HorH09 Belgium	B. hortorum hortorum HorH10 Netherlands	B. hortorum hortorum HorH11 Czech Republic	B. hortorum hortorum HorH12 Czech Republic	B. hortorum hortorum HorH13 Czech Republic	B. hortorum hortorum HorH14 Czech Republic	B. hortorum hortorum HorH15 Czech Republic	B. hortorum hortorum HorH16 Czech Republic
0.03	0.24	0.41	0.37	0.31	0.07	0.24	0.27
0.11	0.14	0.14	0.18	0.17	0.14	0.16	0.44
0.79	0.98	0.47	0.49	0.38	1.46	1.25	1.08
1.19	0.62	0.67	0.37	1.26	1.15	2.00	0.62
2.02	2.08	0.50	1.34	1.14	4.30	3.72	1.55
0.29	0.51	0.53	0.52	0.22	0.30	0.33	0.45
0.93	1.10	0.83	0.27	0.25	0.92	0.13	0.17
1.68	1.57	2.36	0.68	0.80	2.52	1.87	0.50
0.29	0.08	0.13	0.10	0.96	0.00	0.00	0.00
36.10	34.23	33.42	36.47	18.40	26.73	23.34	34.58
2.53	3.26	1.67	2.39	1.02	1.84	2.22	2.55
0.80	0.48	0.61	0.27	0.25	0.15	0.20	0.46
0.51	0.09	0.35	0.34	0.08	0.03	0.01	0.04
0.27	0.20	0.23	0.27	0.17	0.22	0.15	0.19
0.86	0.86	0.12	0.31	0.21	0.73	0.72	0.38
0.11	0.03	0.06	0.03	0.54	0.07	0.23	0.04
1.00	2.08	10.25	1.19	2.91	6.46	7.89	11.66
1.97	1.67	2.76	1.99	1.57	1.66	0.00	0.00
0.50	0.56	0.00	0.37	0.54	0.56	0.52	2.21
0.31	0.49	0.00	0.28	0.64	0.68	0.75	0.26
9.54	10.59	4.61	9.71	4.69	8.02	9.43	9.05
4.70	2.15	6.31	3.82	1.12	0.50	0.80	0.97
0.44	0.08	0.04	0.21	0.21	0.00	0.00	0.16
1.81	0.31	0.55	1.79	4.60	0.00	0.00	0.00
0.35	0.00	0.09	0.23	0.00	0.00	0.00	0.00
2.48	6.18	3.20	4.88	15.99	9.20	12.83	2.92
4.15	9.66	2.06	6.93	14.75	14.73	14.80	3.44
1.41	0.76	1.00	1.33	1.66	0.98	1.05	1.83
1.26	0.88	2.45	0.31	1.30	1.48	1.76	3.26
10.23	8.84	8.67	10.19	9.08	8.79	7.17	9.89
0.10	0.02	0.21	0.06	0.09	0.03	0.11	0.01
0.12	0.05	0.07	0.05	0.64	0.07	0.22	0.02
0.47	0.23	0.50	0.36	3.39	0.36	1.08	0.13
0.15	0.06	0.14	0.13	0.09	0.01	0.05	0.08
1.72	1.00	1.85	2.21	2.51	1.19	0.90	1.59
2.79	1.91	2.88	2.13	2.61	1.40	1.06	1.97
0.57	0.38	1.20	1.18	1.00	0.42	0.24	0.49
1.02	0.53	1.88	0.55	0.74	0.41	0.21	0.98
0.19	0.11	0.52	0.39	0.21	0.11	0.05	0.16
0.26	0.24	0.58	0.20	0.15	0.11	0.06	0.25
0.07	0.25	0.13	0.26	0.17	0.13	0.06	0.31
0.06	0.08	0.39	0.18	0.06	0.06	0.04	0.12
0.08	0.15	0.08	0.05	0.06	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.07	0.05	0.04	0.04	0.03	0.02	0.03	0.01

0.75	0.35	0.29	0.25	0.19	0.30	0.22	0.24
0.37	0.19	0.17	0.12	0.12	0.18	0.17	0.09
0.39	0.31	0.29	0.19	0.15	0.20	0.19	0.30
1.00	1.24	1.18	1.39	0.51	0.74	0.43	2.20
0.73	0.88	0.98	0.94	0.38	0.45	0.29	0.85

B. hortorum hortorum HorH17 Slovenia	B. hortorum hortorum HorH18 Slovenia	B. hortorum hortorum HorH19 Poland	B. hortorum hortorum HorH20 Italy	B. hortorum hortorum HorH21 Italy	B. hortorum hortorum HorH22 Italy	B. hortorum hortorum HorH23 Italy	B. hortorum hortorum HorH24 Italy
0.12	0.15	0.09	0.22	0.07	0.22	0.11	0.03
0.10	0.17	0.20	0.09	0.24	0.06	0.11	0.12
1.58	1.44	1.58	0.69	1.00	1.21	1.21	0.68
5.03	6.07	7.08	1.11	3.76	1.59	1.84	6.18
5.56	5.05	4.76	1.86	3.68	2.33	3.13	2.28
0.24	0.25	0.38	0.28	0.46	0.20	0.27	0.29
0.11	0.12	0.13	1.71	0.40	1.65	1.12	0.76
0.45	0.36	0.40	2.76	1.29	2.86	2.24	3.99
0.22	0.37	0.27	0.30	0.00	0.30	0.17	0.00
26.14	24.20	23.96	29.04	29.70	21.09	25.50	24.62
1.24	1.82	2.66	1.87	3.05	2.10	2.51	2.06
0.18	0.28	0.30	0.28	0.08	0.34	0.24	0.09
0.01	0.01	0.01	0.58	0.00	0.68	0.30	0.19
0.12	0.15	0.11	0.17	0.17	0.11	0.17	0.13
0.30	0.56	0.44	0.29	1.04	0.22	0.65	0.44
0.07	0.11	0.11	0.03	0.00	0.03	0.06	0.27
8.69	8.99	7.98	1.70	7.78	1.61	1.77	3.11
1.10	1.00	0.96	0.00	0.89	0.00	1.28	1.11
0.67	0.66	0.68	0.54	0.56	0.70	0.69	0.67
0.81	0.82	0.73	0.53	0.63	0.63	0.67	0.66
6.01	8.27	9.24	7.56	8.30	8.19	8.85	6.44
0.28	0.89	0.83	9.16	0.19	9.90	6.93	2.70
0.02	0.14	0.07	0.55	0.19	0.06	0.33	0.00
0.00	0.00	0.00	0.00	0.00	0.27	0.52	0.13
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.10	10.08	7.66	9.67	7.45	8.73	9.26	12.84
15.57	14.72	13.36	13.61	14.11	13.25	14.73	15.97
1.68	1.10	1.13	1.47	1.15	0.77	0.90	0.66
4.44	1.71	3.83	0.70	2.85	0.50	0.83	1.80
4.88	5.49	6.58	4.76	5.80	4.72	4.80	4.94
0.07	0.08	0.16	0.01	0.01	0.01	0.04	0.02
0.04	0.05	0.04	0.15	0.03	0.12	0.06	0.45
0.19	0.25	0.24	0.75	0.13	0.44	0.24	2.11
0.01	0.02	0.01	0.08	0.01	0.07	0.03	0.01
1.14	0.81	0.63	1.31	0.73	0.74	1.05	0.71
0.97	0.94	1.13	1.13	0.92	1.11	1.18	0.91
0.37	0.34	0.25	0.47	0.10	0.37	0.43	0.19
0.22	0.19	0.19	0.51	0.12	0.52	0.53	0.37
0.12	0.10	0.08	0.17	0.02	0.18	0.19	0.07
0.03	0.06	0.09	0.07	0.04	0.76	0.40	0.20
0.35	0.16	0.08	0.00	0.04	1.00	0.39	0.17
0.09	0.03	0.06	0.08	0.02	0.22	0.19	0.07
0.00	0.00	0.02	0.00	0.05	0.77	0.17	0.06
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.03	0.04	0.05	0.08	0.06	0.18	0.10	0.06

0.22	0.33	0.29	0.42	0.43	1.03	0.54	0.22
0.16	0.21	0.22	0.38	0.24	0.82	0.43	0.17
0.17	0.25	0.26	0.27	0.26	1.12	0.35	0.21
0.43	0.41	0.26	0.57	1.15	2.79	0.93	0.31
0.30	0.32	0.25	0.66	0.64	2.13	0.91	0.33

B. hortorum hortorum HorH25 Spain	B. hortorum hortorum HorH26 France	B. hortorum hortorum HorH27 France
0.06	0.04	0.06
0.16	0.19	0.20
1.83	1.03	0.93
6.07	3.66	9.70
4.29	2.17	2.30
0.30	0.37	0.30
0.83	1.19	0.63
2.44	1.64	0.86
0.00	0.20	0.24
27.66	31.65	29.55
2.66	2.80	1.93
0.34	0.69	0.39
0.04	0.28	0.00
0.17	0.49	0.28
1.21	0.52	0.33
0.09	0.09	0.04
8.80	5.61	16.67
1.24	1.48	0.00
0.52	0.36	0.00
0.53	0.21	0.17
9.62	11.10	7.01
1.68	0.50	1.01
0.00	0.00	0.00
0.06	0.20	0.08
0.00	0.00	0.00
6.93	11.39	5.92
9.08	3.51	5.01
1.38	1.41	1.66
1.70	2.10	3.05
6.06	7.70	7.10
0.02	0.14	0.00
0.08	0.16	0.07
0.33	0.57	0.24
0.01	0.01	0.01
0.87	1.26	1.07
0.84	1.33	0.82
0.21	0.42	0.19
0.17	0.25	0.14
0.05	0.13	0.05
0.03	0.06	0.03
0.02	0.07	0.04
0.02	0.06	0.02
0.02	0.03	0.03
0.00	0.00	0.00
0.04	0.07	0.06

0.35	0.56	0.39
0.20	0.28	0.18
0.26	0.50	0.37
0.37	0.73	0.41
0.28	0.53	0.25

Compounds	MW	IndVal Results B.corsicola	IndVal Results B. ruderatus	B. ruderatus ruderatus RudR01 SW France	B. ruderatus ruderatus RudR16 SW France	B. ruderatus ruderatus RudR03 SW France	B. ruderatus ruderatus RudR04 SW France	B. ruderatus ruderatus RudR05 SW France	B. ruderatus ruderatus RudR19 C. Italy	B. ruderatus ruderatus RudR07 C. Italy
Farnesal	220	0.61	0.01	0.69	0.32	0.65	0.40	0.43	0.23	0.00
Farnesol (isomer I)	222	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Farnesol (isomer II)	222	0.66	0.02	0.65	1.00	0.30	0.64	0.66	0.48	0.89
Farnesol (isomer III)	222	0.81	0.00	2.53	1.76	0.96	3.48	1.94	2.84	2.89
Tetradecenoic acid	226	0.42	0.04	9.69	7.70	13.18	4.04	8.43	4.30	0.92
Heptadec-8-ene	238	0.67	0.02	0.34	0.31	0.20	0.25	0.16	0.27	0.18
Heptadecane	240	0.40	0.00	0.40	0.46	0.25	0.46	0.24	0.44	0.30
Octadec-9-ene	252	0.95	0.00	2.92	2.81	3.21	2.60	2.47	2.84	8.83
Octadecane	254	0.59	0.00	0.51	0.41	0.69	0.21	0.44	0.23	0.05
Nonadec-9-ene	266	0.59	0.19	44.30	66.35	57.06	61.95	61.02	69.01	70.16
Nonadecane	268	0.64	0.14	4.36	5.63	4.92	5.92	4.23	7.35	5.46
Henicos-9-ene	280	0.75	0.03	3.77	2.09	2.08	3.68	2.46	2.08	1.84
Octadecenoic acid	282	0.38	0.08	1.61	0.68	4.55	1.42	2.32	0.32	0.18
Henicosane	282	1.00	0.00	7.93	4.21	5.47	5.55	5.00	4.16	4.06
Icos-9-ene	294	0.20	0.39	2.09	1.80	2.65	3.03	3.67	1.86	0.99
Icosane	296	0.00	0.89	0.36	0.25	0.38	0.35	0.40	0.26	0.20
Unknown Ruderatus 1	?	0.00	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Icosanol	298	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tricos-9-ene	322	0.06	0.44	0.54	0.09	0.13	0.18	0.24	0.06	0.04
Tricosane	324	0.05	0.70	13.14	2.98	2.59	4.32	4.16	2.09	1.66
Ethyl icosenoate	338	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tetracosane	338	0.00	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pentacos-9-ene	350	0.00	0.96	0.85	0.13	0.11	0.15	0.34	0.11	0.02
Pentacosane	352	0.01	0.93	1.77	0.31	0.14	0.32	0.41	0.22	0.11
Hexacos-9-ene	364	0.00	0.84	0.12	0.01	0.02	0.02	0.02	0.00	0.00
Hexacosane	366	0.00	0.53	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Heptacos-9-ene	378	0.00	0.91	0.77	0.27	0.27	0.31	0.46	0.28	0.10
Heptacosane	380	0.01	0.87	0.33	0.14	0.18	0.17	0.19	0.11	0.09
Octacos-9-ene	392	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Octacosane	394	0.45	0.00	0.13	0.05	0.00	0.11	0.13	0.12	0.98
Nonacos-9-ene	406	0.01	0.87	0.00	0.03	0.00	0.00	0.00	0.05	0.00
Nonacosane	408	0.03	0.66	0.13	0.19	0.00	0.44	0.18	0.30	0.05
Triacontene	420	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Farnesyl tetradecenoate	430	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hentriacont-9-ene	434	0.00	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Farnesyl hexadecenoate	458	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Farnesyl octadecenoate	486	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Icosenyl tetradecenoate	504	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B. ruderatus ruderatus RudR08 C. Italy	B. ruderatus ruderatus RudR09 C. Italy	B. ruderatus ruderatus RudR10 C. Italy	B. ruderatus ruderatus RudR11 SW France	B. ruderatus ruderatus RudR12 SW France	B. ruderatus autumnalis RudA02 SW France	B. ruderatus ruderatus RudR14 SW France	B. ruderatus ruderatus RudR15 SW France	B. ruderatus ruderatus RudR02 SW France
0.32	2.99	0.41	0.17	0.65	0.46	0.54	0.42	1.89
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.62	0.17	1.88	1.17	1.31	1.05	1.34	0.99	0.27
4.30	0.01	7.40	2.78	2.27	4.28	4.54	1.18	0.92
3.49	0.00	9.16	0.00	0.00	4.06	5.66	0.00	0.00
0.21	0.00	0.40	0.05	0.13	0.34	0.16	0.36	0.28
0.36	67.41	0.71	0.28	0.23	0.63	0.22	0.47	0.30
3.45	0.00	3.65	6.47	6.76	2.32	3.31	4.23	6.01
0.18	0.00	0.48	0.00	0.00	0.21	0.30	0.00	0.00
69.38	3.18	46.07	67.25	57.10	60.89	58.01	65.16	40.95
3.80	2.80	8.45	5.75	3.20	5.88	2.38	6.84	4.25
3.01	0.61	3.82	3.11	4.13	3.01	4.58	3.59	4.16
0.74	7.57	1.06	0.06	1.00	0.36	0.85	0.23	5.85
3.19	6.54	6.60	5.25	7.39	6.57	5.32	7.35	6.60
1.51	0.08	3.79	0.92	1.20	1.51	1.47	1.04	1.87
0.17	0.09	0.43	0.09	0.23	0.32	0.19	0.24	0.33
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.15	0.85	0.20	0.12	0.67	0.29	0.59	0.34	0.70
3.05	5.91	3.82	3.20	9.78	6.02	8.79	5.52	13.38
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.11	0.14	0.19	0.20	0.67	0.40	0.48	0.30	1.20
0.24	0.58	0.32	0.00	0.86	0.38	0.46	0.36	2.73
0.01	0.02	0.01	0.00	0.12	0.00	0.07	0.11	0.32
0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
0.35	0.67	0.33	0.37	0.81	0.15	0.41	0.22	4.00
0.10	0.30	0.19	0.10	0.91	0.35	0.08	0.19	1.48
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.13	0.00	0.13	0.00	0.26	0.45	0.08	0.00	0.95
0.02	0.00	0.05	2.64	0.00	0.00	0.00	0.73	0.32
0.14	0.09	0.43	0.00	0.30	0.07	0.18	0.12	1.26
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

B. ruderatus ruderatus RudR18 C. Italy	B. ruderatus ruderatus RudR06 C. Italy	B. ruderatus autumnalis RudA01 SE France	B. ruderatus ruderatus RudR13 SW France	B. ruderatus autumnalis RudA03 SE France	B. ruderatus ruderatus RudA05 SW France	B. corsicola RudC01 Corsica	B. corsicola RudC02 Corsica	B. corsicola RudC03 Corsica	B. corsicola RudC04 Corsica	B. corsicola RudC05 Corsica	B. corsicola RudC06 Corsica
0.39	0.17	0.43	0.23	0.52	0.56	0.25	0.43	0.00	0.31	0.35	0.30
0.00	0.00	0.00	0.00	0.00	0.00	1.82	0.16	0.58	0.00	0.00	0.00
0.61	1.02	1.00	1.69	0.87	0.47	0.34	0.00	0.67	0.28	0.00	0.03
1.27	2.29	2.66	4.93	4.99	1.94	0.00	0.23	3.10	0.00	0.00	0.00
4.54	0.18	13.21	6.42	1.59	0.96	12.27	7.04	14.84	0.68	0.39	1.24
0.31	0.40	0.18	0.36	0.27	0.22	0.13	0.10	0.04	0.06	0.17	0.09
0.39	0.51	0.22	0.48	0.41	0.40	0.21	0.15	0.00	0.15	0.03	0.26
2.67	5.27	2.30	2.83	1.62	1.81	0.00	0.00	0.00	0.00	0.00	0.00
0.24	0.01	0.70	0.34	0.08	0.05	0.00	0.00	0.00	0.00	0.00	0.00
68.89	70.46	55.28	65.44	66.21	68.31	32.61	33.28	18.84	53.45	51.45	47.65
3.94	6.74	3.63	5.53	3.51	3.46	0.17	3.05	1.18	3.15	0.00	3.31
3.26	2.60	3.82	2.21	2.67	3.35	3.73	3.01	6.58	0.57	0.00	0.68
0.70	0.06	1.44	0.89	0.93	1.37	1.64	2.19	5.82	0.12	0.00	0.09
5.33	6.19	4.66	3.13	5.73	5.72	0.08	0.12	0.08	0.11	0.32	0.08
1.82	0.73	2.54	2.24	2.28	2.43	2.74	2.59	1.67	2.52	1.89	2.22
0.31	0.21	0.25	0.22	0.36	0.33	3.26	5.33	2.40	5.48	4.83	4.69
0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.75	0.35	0.70	0.00	1.50
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.56	0.00	0.00
0.24	0.14	0.37	0.10	0.30	0.36	0.41	6.31	0.48	0.66	0.30	0.29
4.25	2.80	5.88	1.97	5.93	6.65	14.75	12.10	12.31	9.80	7.87	19.28
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.00	0.07	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.12	0.12	1.77	1.97	1.22
0.15	0.10	0.61	0.11	0.39	0.34	1.40	2.55	1.62	2.31	1.26	0.85
0.18	0.13	0.25	0.17	0.45	0.45	3.85	2.91	1.89	2.74	2.90	3.10
0.03	0.01	0.03	0.00	0.06	0.07	0.22	0.34	0.18	0.16	0.24	0.25
0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.13	0.05	0.05	0.22	0.91
0.18	0.00	0.28	0.33	0.30	0.37	3.96	6.18	2.50	3.46	6.35	2.17
0.06	0.00	0.07	0.15	0.11	0.10	1.04	1.53	0.71	0.49	2.02	2.15
0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.07	0.04	0.13	0.06
0.08	0.00	0.05	0.00	0.08	0.09	0.06	0.05	0.07	0.02	0.06	0.07
0.00	0.00	0.00	0.00	0.00	0.00	1.69	2.16	0.72	0.33	2.77	1.93
0.17	0.00	0.16	0.24	0.38	0.19	0.63	0.59	0.36	0.54	1.38	1.10
0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.05	0.09	0.02	0.11	0.05
0.00	0.00	0.00	0.00	0.00	0.00	2.08	0.89	2.50	1.17	0.84	0.71
0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.58	0.38	0.14	1.31	0.90
0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.56	1.10	0.10	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	1.88	1.35	2.01	0.87	6.45	1.16
0.00	0.00	0.00	0.00	0.00	0.00	5.87	2.99	16.70	2.14	4.37	1.69

B. corsicola RudC07 Corsica	B. corsicola RudC08 Corsica	B. corsicola RudC09 Corsica	B. corsicola RudC10 Corsica	B. corsicola RudC11 Corsica	B. corsicola RudC12 Corsica	B. corsicola RudC13 Corsica	B. corsicola RudC14 Corsica	B. corsicola RudC15 Corsica	B. corsicola RudC16 Corsica	B. corsicola RudC17 Corsica	B. corsicola RudC18 Corsica	B. corsicola RudC19 Corsica
0.28	0.25	0.29	0.13	0.44	0.23	0.28	0.27	0.45	0.26	0.22	0.27	0.32
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.02	0.00	1.80	0.00	0.09	0.48	0.09	0.27	0.26	0.02	0.04	0.39	0.65
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.83	0.52	0.68	0.63	1.43	0.62	1.13	0.86	0.98	0.66	0.65	0.54	1.08
0.00	0.00	0.07	0.00	0.26	0.06	0.21	0.08	0.15	0.12	0.09	0.31	0.17
0.18	0.12	0.26	0.28	0.53	0.23	0.38	0.27	0.40	0.15	0.22	0.11	0.39
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65.87	57.39	57.98	51.61	54.35	40.59	52.78	60.66	54.63	62.78	54.61	56.45	57.77
0.09	0.00	0.00	23.10	3.92	1.14	3.22	2.84	3.41	0.00	0.00	5.26	4.20
0.01	0.00	0.80	0.00	0.36	0.34	0.33	0.45	0.61	0.37	0.36	0.39	0.48
0.00	0.00	3.06	0.00	0.11	0.10	0.18	0.16	0.22	0.13	0.26	0.37	0.40
0.62	0.32	0.25	0.39	0.25	0.06	0.13	0.10	0.19	0.06	0.06	0.16	0.17
2.14	2.32	2.11	1.69	2.20	1.58	2.67	2.49	2.43	2.68	2.22	2.17	1.86
4.64	2.87	4.06	2.80	6.88	3.24	4.69	0.00	3.14	0.00	10.53	3.94	5.83
0.78	6.40	0.31	0.00	0.00	15.68	2.82	0.86	0.06	1.36	4.77	2.29	1.02
0.00	0.00	1.24	0.00	0.00	5.38	0.00	5.43	0.47	0.00	0.00	0.00	4.88
0.00	0.26	0.34	0.18	0.45	0.26	0.46	0.44	0.38	0.60	0.51	0.55	0.40
7.96	7.98	7.61	5.77	13.86	6.20	8.24	8.51	11.34	7.93	8.15	8.02	6.94
0.00	0.00	0.10	0.00	0.00	0.00	3.21	0.00	0.04	0.05	0.01	0.04	0.04
1.40	4.34	0.09	0.00	0.68	1.13	1.05	1.16	1.08	0.91	1.31	0.99	1.26
1.08	1.40	1.25	0.85	1.28	0.93	1.77	1.46	1.08	2.28	1.11	1.34	1.48
2.78	2.53	2.45	1.84	2.47	2.11	2.17	2.17	3.23	2.43	2.46	2.57	1.68
0.00	0.15	0.15	0.08	0.16	0.14	0.19	1.05	0.15	0.25	0.48	0.58	0.48
0.12	0.09	0.53	0.06	0.50	0.65	0.29	0.08	0.10	0.07	0.08	0.07	0.07
2.66	6.15	5.95	3.77	1.43	4.37	4.38	4.45	5.32	7.36	4.61	4.93	2.97
1.86	1.32	1.62	1.23	0.67	1.14	1.02	0.66	1.78	1.66	1.47	0.64	0.77
0.08	0.08	0.09	0.15	0.02	0.07	0.05	0.07	0.09	0.10	0.07	0.06	0.04
0.07	0.06	0.05	0.04	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.03	0.03
2.55	2.51	2.11	1.20	0.65	1.56	1.12	1.33	2.05	2.34	1.63	1.63	0.90
0.87	0.57	0.65	0.18	0.29	0.81	0.65	0.40	0.50	0.27	0.13	0.53	0.41
0.00	0.05	0.06	0.76	0.69	0.04	0.04	0.03	0.11	0.08	0.08	0.04	0.02
0.05	0.15	0.20	0.03	0.00	0.96	0.69	0.29	0.59	0.21	0.19	0.66	0.45
0.75	0.85	0.73	0.30	0.17	0.62	0.26	0.48	0.94	0.76	0.63	0.61	0.31
0.00	0.00	0.00	0.00	0.17	0.15	0.12	0.03	0.07	0.05	0.00	0.00	0.12
1.12	0.00	1.13	2.73	1.49	7.17	1.97	0.86	1.67	2.01	1.26	1.80	1.15
1.19	1.31	1.99	0.19	4.20	1.96	3.37	1.75	2.04	1.98	1.76	2.25	1.27

Compounds	MW	IndVal Results Other B.barbutellus	IndVal Results Corsican B.barbutellus	B. barbutellus BAR1 Turkey	B. barbutellus BAR2 Turkey	B. barbutellus BAR3 Turkey	B. barbutellus BAR4 Turkey	B. barbutellus BAR5 Sweden	B. barbutellus BAR6 France	B. barbutellus BAR7 Turkey	B. barbutellus BAR8 France	B. barbutellus BAR9 Turkey
Decanoic acid	172	0.07	0.43	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01
Geranyl acetone	194	0.40	0.00	0.21	0.13	0.03	0.02	0.20	0.08	0.03	0.03	0.02
Unknown_barbutellus1	?	0.41	0.12	0.36	3.59	0.22	1.01	0.27	1.89	2.61	3.01	1.69
Dodecanoic acid	200	0.08	0.50	0.03	0.16	0.19	0.01	2.78	2.38	0.01	1.71	0.01
Ethyl dodecanoate	228	0.15	0.08	0.03	0.15	0.00	0.01	0.02	0.01	0.01	0.00	0.16
Farnesal	220	0.21	0.16	0.21	0.32	0.02	0.14	0.28	0.18	0.18	0.06	0.18
Unknown_barbutellus2	?	0.45	0.00	0.10	0.05	0.57	0.39	0.15	0.24	0.71	0.47	0.03
Farnesal, second isomers	220	0.55	0.00	0.60	0.55	0.10	0.50	0.46	0.26	0.69	0.11	0.35
Hexadecenoic acid	254	0.00	0.33	0.00	0.02	0.02	0.09	0.04	0.01	0.01	0.01	0.02
Ethyl 9-tetradecenoate	254	0.00	0.33	0.00	0.01	0.11	0.00	0.08	0.36	0.00	0.21	0.01
Ethyl tetradecanoate	256	0.01	0.31	0.00	0.01	0.02	0.00	0.01	0.09	0.00	0.12	0.00
Dihydrofarnesol	224	0.16	0.53	0.20	0.44	0.08	0.00	0.43	0.19	0.50	0.10	0.20
Farnesyl acetate	264	0.61	0.04	16.73	21.53	22.83	17.04	19.95	27.78	28.39	24.35	10.42
Hexadecenoic acid	254	0.34	0.05	0.00	0.18	0.05	0.21	0.03	0.15	0.38	0.21	0.00
Ethyl hexadecenoate	282	0.06	0.40	0.00	0.02	0.00	0.04	0.00	0.02	0.07	0.04	0.00
ethyl hexadecanoate	284	0.40	0.00	0.01	0.08	0.04	0.17	0.03	0.07	0.29	0.12	0.22
Octadecenal	266	0.07	0.54	0.03	0.05	0.17	0.03	0.61	0.34	0.00	0.27	0.06
Octadecanal	268	0.16	0.18	0.01	0.01	0.03	0.01	0.13	0.14	0.00	0.10	0.01
Octadecen-1-ol	268	0.80	0.00	20.88	13.02	22.96	23.23	14.31	8.79	13.82	11.06	16.50
heneicosane	296	0.45	0.00	1.69	0.73	0.17	0.29	0.31	0.54	0.11	0.18	1.60
geranylgeranial	288	0.16	0.20	0.44	0.48	0.19	0.26	0.33	0.24	0.17	0.15	1.06
Unknown_barbutellus3	?	0.36	0.23	0.00	0.35	0.17	0.61	0.07	0.86	0.79	0.53	0.00
Geranylcitronellol	292	0.22	0.20	3.72	2.67	2.01	2.94	6.75	3.22	2.18	2.13	4.41
Unknown_barbutellus4	?	0.10	0.48	0.03	0.12	0.24	0.05	1.92	1.02	0.13	0.48	0.00
Octadecenoic acid ethyl ester	310	0.30	0.00	0.02	0.07	0.17	0.05	0.62	0.18	0.00	0.16	0.00
Octadecenoic acid ethyl ester	310	0.07	0.48	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.00	0.00
Octadecenyl acetate	310	0.17	0.42	0.98	0.77	1.07	1.01	0.89	0.92	1.13	1.05	0.83
docosane	310	0.38	0.12	0.18	0.19	0.22	0.25	0.15	0.23	0.23	0.15	0.00
geranylgeranial	288	0.18	0.45	0.10	0.08	0.24	0.00	0.19	0.55	0.00	0.15	0.32
Unknown_barbutellus5	?	0.60	0.00	0.70	0.50	1.72	0.96	0.09	0.47	1.43	0.72	0.30
Geranylcitronellyl acetate	292	0.03	0.60	0.51	0.39	0.49	0.79	1.44	0.76	0.72	0.61	0.13
Eicosenol	296	0.45	0.00	0.00	0.00	7.66	9.07	9.22	8.28	4.72	4.24	0.36
1,3-Diacetyl-2-dodekanoylglycerol	358	0.49	0.20	25.35	22.74	25.96	26.13	8.90	10.16	24.35	20.93	28.97
Unknown_barbutellus6	?	0.13	0.18	11.34	6.56	1.78	0.55	0.18	0.27	1.19	0.43	0.00
Unknown_barbutellus7	?	0.55	0.07	0.42	0.41	3.79	4.86	5.28	4.26	3.98	3.68	8.16
tricosane	324	0.15	0.19	6.25	8.16	0.11	0.12	0.04	0.14	0.10	0.02	10.11
Unknown_barbutellus8		0.01	0.32	0.07	0.09	0.28	0.22	0.09	0.27	0.05	0.20	0.05
Icosenyl acetate	338	0.02	0.61	0.33	0.32	0.05	0.10	0.15	0.25	0.07	0.11	0.03
Tetracosane	338	0.04	0.24	0.06	0.09	0.05	0.07	0.04	0.08	0.06	0.08	0.50
Icosyl acetate	340	0.02	0.28	0.01	0.01	0.03	0.03	0.01	0.02	0.03	0.04	0.18
Unknown_barbutellus9	?	0.35	0.00	0.19	0.16	0.56	0.36	0.08	0.95	0.35	1.14	0.14
1,3-Diacetyl-2-tetradekanoylglycerol	386	0.40	0.00	0.53	0.38	1.54	1.83	0.44	0.57	2.62	1.80	0.00
pentacosene	350	0.01	0.29	0.06	0.08	0.02	0.03	0.13	0.07	0.01	0.06	0.23
pentacosene	350	0.11	0.45	0.11	0.17	0.06	0.08	0.19	0.13	0.03	0.08	0.04
pentacosane	352	0.08	0.51	1.71	2.65	1.18	1.77	1.55	1.67	1.79	1.59	4.75
Heptadecane	324	0.40	0.00	0.02	0.06	0.05	0.02	0.01	0.07	0.02	0.05	0.00
hexacosene	364	0.40	0.04	0.04	0.09	0.01	0.01	0.08	0.03	0.01	0.02	0.12
Farnesyl decanoate	376	0.07	0.52	0.06	0.10	0.06	0.06	0.20	0.20	0.07	0.23	0.20
Heptacosene	378	0.00	0.33	0.04	0.10	0.02	0.03	0.22	0.09	0.04	0.05	0.00
Heptacosene	378	0.16	0.60	0.37	1.11	0.12	0.22	0.77	0.52	0.15	0.33	0.05
Heptacosane	380	0.13	0.21	0.87	1.73	0.75	0.95	1.08	1.57	0.96	1.37	0.68
Unknown_barbutellus10	?	0.15	0.00	0.00	0.04	0.01	0.02	0.01	0.02	0.02	0.00	2.95
Octadecenyl octanoate	394	0.13	0.46	0.02	0.07	0.01	0.01	0.08	0.13	0.06	0.07	0.02
Hexadecyl decanoate	396	0.30	0.05	0.05	0.07	0.00	0.02	0.04	0.00	0.02	0.00	0.04

Farnesyl dodecanoate	404	0.12	0.39	0.08	0.18	0.06	0.14	0.70	1.43	0.25	1.68	0.07
1,3-Diacetyl-2-hexadekanoylglycerol	414	0.17	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.13
Squalene	410	0.26	0.05	0.00	0.01	0.01	0.02	0.02	0.04	0.00	0.03	0.00
hexacosenol	380	0.45	0.00	0.14	0.26	0.25	0.36	0.10	0.10	0.31	0.22	0.13
hexacosanol	382	0.01	0.64	0.05	0.19	0.02	0.03	0.32	0.10	0.02	0.08	0.09
Nonacosene	406	0.21	0.47	0.07	0.21	0.04	0.07	0.16	0.16	0.05	0.09	0.15
Nonacosane	408	0.06	0.51	0.10	0.22	0.16	0.19	0.20	0.24	0.16	0.20	0.31
Octadecenyl decanoate	422	0.03	0.90	0.22	0.39	0.06	0.08	1.83	0.88	0.10	0.99	0.19
Hexadecyl dodecanoate	424	0.08	0.53	0.05	0.04	0.01	0.01	0.16	0.11	0.02	0.08	0.04
Unknown_barbutellus11	?	0.09	0.54	0.06	0.08	0.09	0.06	0.06	0.10	0.04	0.14	0.19
Unknown_barbutellus12	?	0.25	0.00	0.01	0.02	0.02	0.03	0.05	0.15	0.07	0.23	0.03
Geranylcitronellyl decanoate	446	0.02	0.61	0.02	0.03	0.01	0.01	0.25	0.08	0.00	0.05	0.01
hentriacontene	434	0.06	0.56	0.03	0.07	0.02	0.03	0.08	0.04	0.03	0.07	0.05
Octadecenyl dodecanoate	450	0.10	0.78	2.36	3.73	0.59	1.56	10.29	10.34	2.51	8.67	1.56
Geranylcitronellyl dodecanoate	474	0.05	0.54	0.17	0.36	0.02	0.13	1.80	1.12	0.19	0.63	0.14
Unknown_barbutellus13	?	0.08	0.23	0.01	0.02	0.02	0.01	0.01	0.02	0.05	0.06	0.01
Farnesyl hexadecanoate	460	0.06	0.51	0.00	0.13	0.01	0.03	0.39	0.34	0.03	0.14	0.01
Eicosenyl dodecanoate	478	0.03	0.91	0.89	2.13	0.31	0.51	2.08	3.00	0.76	1.66	0.76
Farnesyl octadecenoate	486	0.35	0.00	0.00	0.01	0.05	0.06	0.13	0.04	0.08	0.18	0.00

B. barbutellus BAR10 Turkey	B. barbutellus BAR11 Turkey	B. barbutellus BAR12 Turkey	B. barbutellus BAR13 Turkey	B. barbutellus BAR14 Turkey	B. barbutellus BAR15 Turkey	B. barbutellus BAR16 France	B. barbutellus BAR17 Germany	B. barbutellus BAR18 France	B. barbutellus BAR19 Turkey	B. barbutellus BAR20 Turkey	B. barbutellus BAR21 Corsica	B. barbutellus BAR22 Corsica	B. barbutellus BAR23 Corsica
0.02	0.02	0.02	0.02	0.07	0.16	0.09	0.01	0.05	0.02	0.02	0.08	0.05	0.00
0.01	0.03	0.10	0.01	0.02	0.15	0.09	0.01	0.07	0.02	0.02	0.00	0.03	0.01
1.58	2.47	3.22	2.19	4.25	0.33	1.86	0.53	3.94	1.59	0.76	2.68	1.34	0.00
0.03	0.03	0.28	0.03	0.34	0.71	1.92	0.04	3.20	0.02	0.01	5.26	1.21	0.12
0.02	0.02	0.01	0.01	0.13	0.08	0.02	0.00	0.00	0.02	0.02	0.05	0.00	0.00
0.19	0.41	0.62	0.05	0.23	0.12	0.50	0.04	0.03	0.17	0.08	0.36	0.13	0.00
0.05	0.08	0.00	0.19	0.01	0.21	1.58	0.28	0.57	0.05	0.38	0.00	0.00	0.00
0.36	0.72	0.78	0.13	0.25	0.30	0.94	0.14	0.09	0.38	0.18	0.00	0.22	0.00
0.03	0.01	0.23	0.17	0.03	0.00	0.08	0.00	0.12	0.03	0.01	11.41	0.05	0.00
0.00	0.01	0.04	0.28	0.09	0.02	0.18	0.00	0.40	0.00	0.00	19.43	0.07	0.00
0.00	0.00	0.00	0.01	0.03	0.01	0.15	0.00	0.16	0.00	0.00	0.81	0.02	0.00
0.39	0.14	0.19	0.08	0.12	0.13	0.15	0.53	0.07	0.32	0.40	0.42	0.26	0.25
11.01	31.33	46.33	28.63	30.90	24.86	29.08	38.25	25.04	13.41	11.43	0.19	19.22	21.57
0.21	0.42	1.10	0.49	1.75	0.78	0.45	0.16	0.41	0.24	0.11	0.37	0.24	0.00
0.00	0.03	0.27	0.48	0.41	0.00	0.04	0.01	0.05	0.02	0.01	0.15	0.19	0.00
0.06	0.19	0.55	0.12	0.82	0.01	0.41	0.11	0.46	0.08	0.04	0.00	0.00	0.00
0.03	0.05	0.36	0.30	0.58	0.17	0.77	0.03	1.54	0.05	0.02	1.98	0.52	0.03
0.00	0.00	0.09	0.00	0.11	0.06	0.33	0.01	0.29	0.01	0.00	0.19	0.05	0.04
18.21	15.63	9.07	14.30	10.62	13.56	2.04	11.92	1.65	23.47	24.43	0.02	3.12	0.75
0.98	0.13	0.07	0.12	0.18	0.95	0.32	0.78	0.07	1.27	1.55	0.02	0.12	0.16
0.47	0.21	0.11	0.09	0.21	0.49	0.25	0.14	0.27	0.53	0.31	0.68	0.12	0.00
0.76	1.37	2.38	0.67	2.31	0.19	0.00	0.00	0.00	0.90	0.51	0.60	0.77	0.00
3.32	2.12	1.50	1.61	2.56	3.34	1.30	1.55	1.86	2.83	2.40	0.13	5.44	0.18
0.00	0.12	0.28	0.00	0.39	0.68	1.11	4.76	0.82	0.00	0.00	2.71	0.87	0.00
0.07	0.10	0.24	0.05	0.23	0.29	1.99	0.15	1.97	0.10	0.00	0.00	0.00	0.00
0.05	0.00	0.00	0.02	0.06	0.08	0.41	0.08	0.53	0.08	0.00	0.10	0.34	0.07
0.91	0.87	1.16	1.08	0.90	2.09	0.99	1.06	1.28	1.16	0.85	0.41	1.15	1.34
0.16	0.18	0.10	0.07	0.16	0.22	0.12	0.13	0.16	0.19	0.15	0.12	0.20	0.00
0.21	0.00	0.19	0.00	0.28	0.34	0.18	0.11	0.27	0.11	0.20	0.06	0.44	0.23
0.65	0.62	0.12	1.25	0.14	0.34	0.08	0.12	0.19	0.57	0.83	0.00	0.09	0.00
0.46	0.49	0.64	0.57	0.86	1.01	0.65	1.48	1.07	0.60	0.46	0.20	2.95	2.27
0.00	4.54	0.00	4.84	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31.40	24.49	13.74	27.08	18.21	17.25	2.56	13.73	4.06	25.42	27.03	0.98	17.54	20.88
0.00	0.49	0.45	0.00	1.07	0.70	0.38	0.42	2.37	7.80	15.70	7.14	0.12	0.28
9.96	3.73	2.61	1.33	3.08	7.56	4.72	3.54	4.34	0.26	0.40	0.00	3.73	0.00
7.58	0.02	0.12	2.28	0.17	0.19	0.07	0.16	0.12	6.61	4.34	0.03	0.08	11.01
0.10	0.10	0.17	0.15	0.17	0.01	0.08	0.35	0.12	0.18	0.23	0.00	0.01	2.71
0.40	0.06	0.07	0.10	0.09	0.82	0.20	0.17	0.05	0.36	0.18	0.14	0.42	2.64
0.07	0.03	0.02	0.07	0.04	0.08	0.06	0.04	0.09	0.08	0.04	0.23	0.05	0.00
0.00	0.02	0.00	0.09	0.01	0.00	0.01	0.00	0.02	0.00	0.00	0.22	0.01	0.00
0.12	0.21	0.06	0.00	0.33	0.06	0.07	0.04	0.18	0.15	0.13	0.00	0.04	0.02
0.45	1.72	0.69	2.25	1.18	0.21	0.15	0.23	0.20	0.37	0.49	0.04	0.36	0.04
0.04	0.03	0.03	3.57	0.03	0.07	0.10	0.10	0.07	0.04	0.02	3.70	0.09	0.04
0.08	0.02	0.08	0.04	0.07	0.11	0.16	0.28	0.09	0.09	0.06	0.04	0.18	0.16
1.98	1.22	0.78	0.84	1.19	2.20	1.92	2.15	3.92	1.82	1.18	3.85	1.59	3.07
0.03	0.01	0.01	0.03	0.02	0.00	0.15	0.02	0.05	0.02	0.02	0.00	0.00	0.02
0.04	0.01	0.01	0.01	0.04	0.05	0.06	0.02	0.06	0.02	0.02	0.04	0.02	0.01
0.07	0.06	0.07	0.07	0.06	0.08	0.23	0.13	0.42	0.07	0.04	0.09	0.39	0.25
0.03	0.01	0.03	0.07	0.03	0.05	0.10	0.16	0.08	0.03	0.01	3.08	0.11	0.05
0.35	0.09	0.18	0.07	0.12	0.60	0.82	0.54	0.44	0.27	0.14	0.65	0.48	0.42
1.11	0.79	0.81	0.62	0.83	1.67	1.88	3.37	4.99	0.84	0.52	0.96	1.24	3.14
0.03	0.01	0.16	0.00	0.07	0.04	0.03	0.07	0.11	0.02	0.02	0.01	0.01	0.01
0.05	0.02	0.04	0.01	0.04	0.05	0.19	0.09	0.09	0.03	0.05	0.04	0.16	0.06
0.08	0.03	0.02	0.04	0.16	0.34	0.17	0.08	0.17	0.04	0.03	0.05	0.08	0.01

0.08	0.17	0.52	0.10	0.26	0.25	4.51	0.28	2.40	0.10	0.07	0.02	1.29	0.99
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00
0.01	0.00	0.01	0.01	0.01	0.01	0.04	0.01	0.11	0.01	0.00	0.00	0.02	0.01
0.17	0.19	0.05	0.27	0.14	0.06	0.01	0.04	0.02	0.35	0.11	0.00	0.11	0.04
0.05	0.01	0.03	0.01	0.02	0.13	0.19	0.05	0.14	0.03	0.02	1.59	0.08	0.35
0.09	0.03	0.06	0.03	0.04	0.17	0.27	0.12	0.17	0.07	0.04	0.16	0.12	0.11
0.20	0.11	0.18	0.13	0.14	0.26	0.27	0.73	0.84	0.16	0.12	0.12	0.30	0.76
0.28	0.23	0.49	0.05	0.37	0.73	0.34	0.37	1.51	0.12	0.09	2.56	3.45	0.90
0.04	0.03	0.07	0.02	0.09	0.14	0.15	0.09	0.17	0.02	0.01	0.00	0.24	0.14
0.12	0.09	0.03	0.03	0.11	0.03	0.02	0.03	0.06	0.10	0.06	0.00	0.14	0.21
0.02	0.04	0.10	0.05	0.07	0.01	0.61	0.02	0.31	0.02	0.03	0.01	0.07	0.03
0.02	0.01	0.02	0.00	0.02	0.09	0.05	0.04	0.22	0.01	0.00	0.02	0.62	0.17
0.03	0.01	0.02	0.01	0.01	0.06	0.16	0.02	0.06	0.02	0.02	0.16	0.04	0.10
3.14	2.68	6.46	1.80	6.09	9.22	21.40	7.10	18.39	4.58	2.63	19.68	16.01	8.73
0.16	0.08	0.30	0.17	0.37	1.24	2.01	1.28	2.55	0.20	0.16	0.08	4.05	2.51
0.01	0.01	0.01	0.04	0.03	0.02	0.05	0.11	0.49	0.01	0.01	0.20	0.01	0.00
0.00	0.00	0.00	0.00	0.01	0.02	0.47	0.47	0.61	0.01	0.01	0.22	0.15	0.94
1.32	0.72	1.38	0.62	1.65	3.73	7.24	1.00	2.65	1.43	0.76	5.43	7.29	12.17
0.06	0.06	0.04	0.08	0.11	0.00	0.05	0.08	0.61	0.00	0.00	0.00	0.06	0.00