

Morphometrics and sexual pheromones to define the specific status within bumblebees

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By their pollinating characteristics, bumblebees are of great importance both in wild ecosystems (mainly in cold and temperate biomes) and in agricultural crops. The main common bumblebee's species of Palaearctic and Nearctic regions belong to the subgenus *Bombus* s. str. Despite their relative high abundance, their systematics could be considered as the most problematic and confused within the genus. Several taxa are involved in cryptic species complex. For instance, the *lucorum* complex comprises at least 9 different taxa, showing dubious status from the form to the good species. The main confusion comes from the homogenous morphology of the 20 species, leading to the near impossibility to identify some species. In the present study, new investigation methods as sexual pheromone analysis (performed on Cephalic Labial Glands secretions) and geometric morphometrics (performed on wing shape) have been undertaken to define the specific status of the taxa and to characterise them by clear morphological variations. Preliminary results on European taxa show that close species of the *lucorum* complex can be recognised both by their CLG secretion and by their wing shape. These new species identification methods are the necessary first step to study further the biology and the host plant choices of bumblebees.