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SEMIOCHEMICALS – VERSATILE NATURAL VOLATILES.

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ABSTRACT: Organisms are permanently surrounded by scents, which are made up of a broad spectrum of secondary metabolites originating from the ubiquitous pathways of classical catabolism or metabolism. Some of these volatiles are meaningful to the receiver or important for the sender but some do not seem to be registered at all. However, no naturally occurring compound is “just there”. Any chemical signal needs a receptor at the receiver site – and it may be asked whether semiochemicals may also be recognized by proteins that are not primarily involved in chemical communication. Consequently, it would make sense to generally screen semiochemicals for biological activities apart from their presently known function. Methyl *p*-hydroxybenzoate, a component of the honey bee queen pheromone, exhibits strong antibiotic properties. Similarly, (3*S*,6*E*)-2,3-dihydrofarnesol, (terrestrol), is a marking pheromone of male bumble bees and its enantiomer, released by the yeast *Candida albicans* show strong antibiotic activity against various Dermatophytes. And there are more examples that prove the physiological versatility of semiochemicals, which will be discussed in more detail. It would be interesting to investigate, whether two organisms reacting to the same volatile compound (e.g. bark beetles and hornets or elephants and moths or bumble bees and skin fungi) share the same receptor.