

## **Integrated pest management: a holistic approach to *Vespa velutina* control**

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Integrated pest management (IPM) is adopted mostly to cope with native and alien agricultural pests, but its principles can be applied to other pests too; therefore a *Vespa velutina* integrated management control could be fulfilled both in *V. velutina*'s natural range and where this invasive species has been introduced. IPM requires the subsequent implementation of prevention, assessment, and control measures in a cost-effective manner: control is to be applied only in case the established action thresholds are exceeded. In such a case, all the available preventive, ecological, biological, physical-mechanical, and chemical management tactics should be used in a coordinate effort with special regard to their environmental impact.

In integrated *V. velutina* management (IWM) preventive tactics, like quarantine and avoidance, can be implemented in early invasion phases, while it should be turned to the remaining tactics in the later containment and mitigation phases. In any case, the prevention of the diffusion of *V. velutina* could prove to be very difficult in areas where environmental conditions are favourable. *V. velutina* parasites, predators, and diseases are little known, but their relevance for classical biological control seems rather scarce; the development of biotechnical methods, such as the use of semiochemicals, could be more promising provided that the constraints deriving from the large areas involved, and therefore the high costs, can be overtaken. Several physical and mechanical control methods, mostly based on the use of a wide array of traps, have been proposed in the last decade but the results so far attained are at best moderate due to attractiveness, selectivity, and effectivity problems. Since the widespread spraying of insecticides would meet insuperable environmental difficulties, the selective application of chemicals by means of baits or other devices could be investigated provided it were both economically and ecologically sound. In any case, before an effective IWM could be proposed, intensive research on both biology and control of *V. velutina* is urgently needed.



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## **VELUTINA TASK FORCE KICKOFF MEETING**



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**PROGRAM & ABSTRACTS**