

## The impact of methanol on the attraction and host colonization of several species of bark beetles (Scolytidae)

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Knowledge on the effect of methanol on the aggregation of bark beetles is rather limited. During the preliminary stage of the present study, we found that adding methanol to pheromone traps, baited with the aggregation pheromone of the almond bark beetle *Scolytus amygdali* Guerin, in order to improve the attraction of the beetles, resulted in a steep decrease (97%) of the number of captured beetles. This surprising result was investigated further with *S. amygdali* as well as four other scolytids. Adding methanol to pheromone traps baited with "Pheroprax" the commercial aggregation pheromone of *Ips typographus* L. affected the captures of two pine bark beetles *Orthotomicus erosus* (Wollaston) and *Pityogenes calcaratus* Erichson by reducing them by 82% and 97%, respectively. Methanol alone did attract the above three studied beetles. Further, we examined the effect of methanol on the colonization of breeding material. Adding methanol to stem sections or cut branches resulted in significant reduction of the colonization density of four beetle spp: *S. amygdali* by 87%, the fig bark beetle *Hypoborus ficus* Erichson by 70%, *P. calcaratus* by 96% and *O. erosus* by 48%. Conversely, methanol enhanced the attraction of the olive bark beetle *Phloeothribus scarabaeoides* (Bernard) by 170%. Adding methanol to the canopy of stone-fruits trees did not affect the *S. amygdali* bud feeding.

We suggest that methanol disrupts the attractiveness of the aggregation pheromone of the studied beetles and may affect, in the same manner, other scolytids. We assume that the presence of host volatiles may reduce this effect. The increased attraction of the olive bark beetle to methanol baited cut branches may provide some new opportunities for improving mass trapping of this beetle whose aggregation pheromone has not yet been identified.