

Oviposition response of grapevine moth to microorganisms isolated from grape

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The egg laying preference of the grapevine moth, *Lobesia botrana*, was tested in a dual choice oviposition test in which females were confronted with two or three sensory cues of the host plant grape (O=olfaction, V=vision, C=contact). In a first set of experiments (O+V+C and O+V) using two ripe grapes as reference treatment, no preference was observed between the two sides of the oviposition arena. Subsequently, females showed no preference when a healthy and a punched (mechanically injured) grape were used in the test. In a second set of experiments, freshly collected grapes were punched with a sterile needle and then inoculated with a fungus (grey mold, *Botrytis cinerea*). With all sensory cues available (O+V+C), females preferred to lay their eggs on a healthy rather than on a grey mold infected grape. When contact cues were not accessible to the test insects (O+V), females chose again healthy rather than mold infected grape, showing a possible effect of vision and/or olfaction on female preference. An additional O+V experiment, in which moths did not distinguish between stimuli from a healthy grape and from a healthy grape placed at the side of a dish with a grey mold culture, showed that the fungus needs to grow on grape to produce a behavioural effect. In a further (O+V) bioassay, healthy grape was favoured over a healthy grape sprayed with grape vinegar. Volatiles from vinegar were supposed to mimic the odours produced by microorganism causing sour rot in grape. Lastly, moths exhibited a preference (O+V) for a pool of grape-born yeasts grown in dish over a dish with culture medium. Ongoing experiments will provide more information on the impact of grape-born microorganisms on grapevine moth oviposition behaviour.