

# ASSESSING THE RISK OF STIGMA CLOGGING IN STRAWBERRY FLOWERS DUE TO POLLINATOR SHARING WITH OILSEED RAPE

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Strawberry and oilseed rape are two economically important crops, which are pollinated by insects. Because they flower during the same period and attract similar insects, they may impact each other indirectly. We expected that the deposition of oilseed rape pollen on strawberry flowers would prevent strawberry pollen to reach the stigmas, thereby inhibiting pollination.

Pollinated pistils develop into achenes, which induce strawberry ripening and growth. We therefore expected the deposition of oilseed rape pollen on strawberry flowers to reduce the number of developed achenes and strawberry weight, increase the number of malformations and prolong the ripening time. In contrast, we expected increasing deposition of strawberry pollen on the flowers to increase the number of developed achenes and strawberry weight, reduce the number of malformations and shorten the ripening time.

We tested these hypotheses in a hand-pollination experiment, where we simulated foraging bouts using dead bees on toothpicks. These foraging bouts either started with the bee “visiting” an oilseed rape flower, thereafter continuing to six strawberry flowers, or only visiting six strawberry flowers.

Oilseed rape pollen had no impact on the number of developed achenes, weight, number of malformations, or ripening time. The number of developed achenes and strawberry weight increased (but not significantly so when accounting for the total number of achenes per flower), ripening time decreased and the number of malformations were unaffected by the number of previously visited strawberry flowers. Strawberries with many developed



Strawberry flowers contain a few hundred of pistils. We used dead bees on toothpicks for hand pollination. Developed achenes induce strawberry ripening and growth, which is seen on the lower photo.

achenes weighed more and ripened faster than strawberries with fewer developed achenes.

