Induced Resistance of Broccoli Plants in Response to Exposure to Swede Midge (*Contarinia nasturtii*)

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The swede midge (*Contarinia nasturtii*) is an invasive pest that causes extensive damage to Brassica plants across Canada, New York, and Vermont, resulting in the loss of large yields of organic crops in these areas. This study examines the effects of inducing resistance pathways in broccoli crops using natural plant elicitors in an effort to minimize damage done by the swede midge. In this study, broccoli plants sprayed with salicylic and jasmonic acid (and control plants that were not sprayed with elicitors) were exposed to swede midge in field conditions for a period of one week. Damage checks were conducted for up to month following exposure, and were ranked using the Hallett damage scale. The results of this study (analyzed using JMP) showed that there was no significant relationship between induced plants and severity of swede midge damage. This study provides evidence for the field of agroecology that induced resistance may not be the most effective form of crop protection for organic farmers, however, further studies should be conducted in laboratory conditions in addition to this field-based study before reaching the conclusion that induction does not reduce swede midge damage.