

Use of Electropenetrography to evaluate Pea Aphid feeding behavior on resistant Lentil lines in Saskatchewan

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This study uses Electropenetrography (EPG) to investigate the feeding dynamics of pea aphids (*Acyrtosiphon pisum*) on distinct lentil lines displaying varying degrees of resistance in Saskatchewan. Pea aphids are notorious for their detrimental impact on lentil production as they cause yield losses and compromise crop quality by extracting plant sap and transmitting viral diseases. Recent studies underscore the increasing prevalence of pea aphid infestations in Saskatchewan, and this emphasizes the urgent need for targeted research to alleviate their impact. In this research, we aim to expose the feeding patterns of pea aphids on certain selected lentil lines with unique resistance traits. By employing EPG, a sophisticated technique that monitors insect feeding activities in real-time, we analyze the electrical waveforms generated during aphid probing and feeding activities. This approach allows us to gain insights into the interactions between pea aphids and resistant lentil lines at a finer temporal scale. By correlating EPG data with the resistance levels of the lentil lines, we aim to discern specific mechanisms of resistance that deter or impede aphid feeding. The findings from this research have the potential to enhance our understanding of lentil-aphid interactions and inform the development of lentil cultivars with improved resistance against pea aphids.