Characterization of Feeding Behavior of Imidacloprid-Resistant Tobacco Thrips

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We have examined the feeding behaviors of imidacloprid-resistant and -susceptible tobacco thrips, *Frankliniella fusca* on peanut. Imidacloprid-resistant thrips collected from Roxobel, NC were ~313x resistant to imidacloprid relative to the -susceptible lab population. Feeding behavior of adult thrips on imidacloprid-treated (liquid in furrow, Admire® Pro @ 10.5 fl oz/acre) and untreated peanut plants of age 9, 14 and 19 days was studied using Electrical Penetration Graphing system. The number and duration of probes and ingestion events for each plant age groups were recorded. Resistant thrips probe and ingest more on imidacloprid-treated 9-day-old plants than susceptible thrips. In addition, the mean duration per ingestion event were longer for resistant thrips than susceptible thrips on 9 and 14 days old imidacloprid-treated plants. Greater feeding by resistant thrips on newly emerged seedlings can be expected to result in greater damage. This difference is lost over time as seedlings age and susceptible thrips probe and feed more, likely in response to declined residual activity of the imidacloprid treatment. Resistant thrips which feed on neonicotinoid-treated peanut seedlings can cause huge crop losses, and thus call for development of resistant management strategies targeting tobacco thrips.