Thoughts On Tobacco Aphid Management

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Aphids held the #1 spot on the insect pest list across the tobacco-producing states during the 1980's. However, the introduction and widespread use of the systemic insecticides imidacloprid (Admire Pro), clothianidin (Belay), and thiamethoxam (Platinum) have provided effective preventive control that has pushed aphids out of the spotlight. With a high percentage of tobacco being treated with one of these three products, the potential for development of insecticide resistance becomes a concern.

All three are neonicotinoid insecticides so they share the same mode of action and belong to the same resistance management group (4). Consequently, aphids across the tobacco states have been exposed to this insecticide for many years. While there have been no confirmed reports of strong resistance of aphids to this insecticide group, research has shown variations in response in different aphid populations. This tells us that the potential for resistance to the neonicotinoid group should not be ignored.

Two strategies to reduce the potential for the development of resistance are 1) using cultural practices that do not favor the build-up of aphid numbers in fields and 2) rotating among insecticides with different modes of action for aphid control.

There are some cultural practices that affect aphid survival and buildup in fields. Incorporating them can help to limit aphid numbers in fields, reducing their economic impact, and lowering the potential for development of resistance.

1. Control aphids during transplant production. Start by eliminating plants around greenhouses and float beds that can provide overwintering sites for aphids – greens, wild mustard, dock, and other leafy greens. Infestations can develop later as side walls of float bed structures are raised to allow air circulation and to harden plants. This allows winged aphids to settle on plants and begin to reproduce. Sprays of Orthene or other acephate products can be used to control developing infestations during this period.

2. Use recommended nitrogen rates. Too much nitrogen fertilizer causes the leaves to remain green later in the year and it promotes excessive sucker growth that favors late aphid and hornworm infestations after topping.

3. Transplant early. Early planted tobacco generally has lower initial and total aphid numbers per plant because fewer wingless adults are flying then. Also, the crop matures earlier and aphids have less impact on it than tobacco set near the end of the recommended transplant window. Many more winged aphids move into late-set field resulting in higher initial infestations and ultimately many more aphids per plant.

4. Top early and control suckers. Aphid populations often decline rapidly after topping, especially in hot, dry weather. However, aphids may still reach damaging levels that require insecticide treatment. Top in the button or early flower stage to eliminate food sources for budworms and to make the crop a less desirable host for aphids and hornworms.

Here are some points to consider when selecting insecticides for aphid control.

1) The preventive products Admire Pro, Belay, and Platinum are probably best suited for late-set fields where the potential for higher aphid infestations is greatest.

2) Admire Pro, Belay, and Platinum have the same mode of action. Rotation among them will not affect the development of resistance. The foliar insecticides Actara (thiamethoxam), Assail (acetamiprid), and Provado (imidacloprid), labeled for aphid control on tobacco, also belong to this group.

3) Acephate products (Othene, etc.) (Group 1) and Fulfill (pymetrozine) (Group 9) are insecticides with different modes of action that can be used as foliar sprays to control aphids.

It is fortunate that the neonicotinoid insecticides continue to perform well against aphids. Taking cultural control steps and using sound insecticide management strategies will help to prolong the effective life of the products that are available to us. Δ