Overhauling Alfalfa Weevil Management in Irrigated Southwest Desert Alfalfa

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Alfalfa dominates the cropping systems in the Western US and is first in terms of acreage crop planted in Arizona. Alfalfa acreage in Arizona is likely to increase given the importance of the dairy industry and other livestock enterprises. In Arizona, alfalfa is an irrigated crop producing up to 12 cuttings annually with an average of 7-8 cuts. Alfalfa hay was grown and harvested from over 275,000 acres in 2017 averaging 8.4 tons per acre in Arizona. The Egyptian alfalfa weevil (EAW), Hypera brunneipennis (Boheman), is one of the most damaging arthropods in low desert Arizona grown alfalfa. EAW larvae feed heavily on alfalfa leaves leading to skeletonizing of the plant that significantly lowers yield as well as stem to leaf ratio that is highly coveted by the dairy and livestock industries. The EAW start activating in winter when temperatures reach ~42⁰F, and continue to be present in the fields during the first, second, and sometimes third cuttings of the season. Generally marketed to the dairy industries, these cuttings are the premium of the entire year. The current economic threshold of 15-20 per sweep of the EAW larvae was established in California in 1975 (Koehler and Rosenthal 1975), but not suitable or adapted by growers in the low desert. Three years of field trials have been conducted at the Maricopa Agriculture Center (MAC) to investigate this economic threshold in low desert Arizona grown alfalfa.