



Malathion Use in the Desert Southwest

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Comments submitted by the Arizona Pest Management Center

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Information Request:

Office of Pest Management Policy requested information on agricultural uses of Malathion, which is undergoing Registration Review. Input was sought on the adequacy of the labels, IPM and resistance management issues, potential uses, application rates, timing, frequency and treatment intervals for the important crop/pest combinations.

Process:

The Arizona Pest Management Center (APMC) requested input from Extension specialists, entomologists and Arid Southwest IPM Network contacts in AZ, CA, NM and NV. We also queried the APMC Pesticide Use Database, which contains uses reported to the Arizona Department of Agriculture since 1991. We did not get a timely response from all contacts, but have summarized important stakeholder comments below, along with a table of pesticide use data that identifies major crop uses in Arizona.

Comments

A review of Arizona pesticide use data from 2008 – 2012 revealed use of malathion on over 30 crops, most prominently in terms of acres treated being alfalfa, barley, bermudagrass and broccoli and cauliflower, primarily grown for seed. Target pests include aphids (all crops), weevils (alfalfa), various Lepidoptera (alfalfa, bermudagrass, broccoli), and chinch bug (cauliflower seed and broccoli seed).

We solicited input from pest managers in the desert southwest, who indicated that malathion fills an important niche in IPM programs for aphid and weevil control in alfalfa. Malathion is the only product that provides growers with the best REI and days to harvest, which prevents problems after a cutting. Its short pre-harvest interval makes it a very good option when pest thresholds are reached close to harvest. It gives reliable results, and is the only product that offers an acceptable level of aphid and weevil control for growers. One pest control advisor stated, "Malathion, with its current product label rates, means that pest control advisors have a time-proven product available for use today, rather than hoping a new product will have their specific crop on the label at some point in the future." Another PCA noted, "Removing malathion or reducing its rate would be a terrible blow to the hay growers of this country."

Another important aspect of malathion use with national ramifications for the cotton industry is its use in pest eradication programs such as the boll weevil, and the prevention of potential re-infestations. A representative that manages eradication programs provided the following comments:

For boll weevil eradication and treating potential weevil infestations in post eradication, Malathion ULV (Malathion) is the tool of choice. In 30+ years of use against boll weevil, resistance to Malathion has not been documented. Its continued efficacy at program rates makes Malathion unique. Most alternative materials for boll weevil control are no longer available which makes the continued availability of Malathion at adequate program rates critical. It is important to note that even before the loss of alternative materials Malathion was the tool of choice. Malathion is relatively inexpensive compared to alternative control measures and highly effective against an insect that spends much of its lifespan in the cotton boll.

Malathion also offers the flexibility of application essential to boll weevil eradication activities. Generally, a program must respond to a weevil capture in a generally infested area within 24 hours, if this goal is not met, efficacy of any control measure diminishes exponentially over time. Another key characteristic of Malathion is its low mammalian toxicity. Public, applicator and environmental protection have always been paramount in eradication programs. Any loss of utility in the case of Malathion would increase the difficulty and costs of protecting non-target elements. If Malathion was unavailable, it is likely that materials with higher toxicity, residual and cost would be required to replace it. This would have the effect of prolonging any eradication or intervention effort and raise the cost of any such effort exponentially if not prohibitively.

Malathion is a key factor in the continued success of boll weevil eradication and reduced pesticide use in the U.S. cotton industry for boll weevil control and other pests. It is my belief, that any decrease in availability of Malathion, or further restrictions in maximum applications or rate, not only jeopardizes current eradication efforts but also increases the risk of re-infestation in eradication areas such as Arizona. Boll weevil and pink bollworm eradication along with the introduction of Bt cotton and select chemistries has created an all-time low in pesticide applications in Arizona cotton. In effect, Malathion can be considered an integral part of a larger IPM complex, which has created the ability to achieve the lowest levels of pesticide use in 30+ years.