Western IPM Center

Western Integrated Pest Management Center

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RE: EPA-HQ-OPP-2015-0653 Tolerance Revocations: Chlorpyrifos

This comment is being provided from the Western IPM Center in response to Docket EPA-HQ-OPP-2015-0653, Tolerance Revocations: Chlorpyrifos. This comment includes information from California. Additional comments will be provided from the sub-regional comment coordinators of the Western IPM Center.

Integrated pest management strives to find the balance between the risks and benefits associated with pests and pest management. In the case of chlorpyrifos, many of the risks to human and environmental health are known (see the risk assessment tools at ipmprime.org), but many of the specific benefits for economically sustainable agricultural production are not. Here I focus my comments on the benefits of chlorpyrifos to California agriculture within the context of integrated pest management.

Chlorpyrifos is an important tool for controlling existing and invasive pest species. Organophosphates in general and chlorpyrifos in specific have been in use for half a century, and insecticide tolerance against the acetylcholine esterase inhibitor class (carbamates and organophosphates) has occurred in pest and beneficial insect populations. Several key insect pest species continue to be effectively controlled by chlorpyrifos where newer chemistries have proven less effective. Examples from four agricultural crops and at least nine key pests are cited below. These examples were taken from the University of California Statewide IPM Program report to California Department of Pesticide Regulation which summarizes the critical uses of chlorpyrifos (available at www.ipm.ucdavis.edu/IPMPROJECT/CDPR_Chlorpyrifos_critical_use_report.pdf).

Chlorpyrifos has key uses in California alfalfa against aphids (cowpea, blue alfalfa) and weevils (alfalfa and Egyptian). In a perennial crop like alfalfa, multiple pests exceeding thresholds simultaneously is common and although alternative modes of action and cultural practices are available against individual pest species, chlorpyrifos has the advantage of controlling all of the key pests. In one case (cowpea aphid) only one mode of action, in addition to chlorpyrifos is available and removal of chlorpyrifos would risk rapid resistance development in this aphid species.

Chlorpyrifos is an essential tool in almonds because only it and pyrethroids are effective against stink bugs and leaffooted bugs. The likelihood of resistance in these pests to pyrethroids if chlorpyrifos is eliminated is unknown.

Maximum residue levels (MRLs) drive the use of chlorpyrifos in California citrus. Mid to late season treatments for Fuller rose beetle, Asian citrus psyllid, citricola scale, and citrus bud mite are possible for material destined for export because of a long standing MRL. Argentine ants are a significant problem in citrus because they protect a variety of the hompteran pests from natural enemy attack and infest irrigation lines, and chlorpyrifos is the only effective control method.

In California cotton, chlorpyrifos is the only material that will effectively control cotton aphid late in the season. For effective sweet potato whitefly adult control, it is strongly recommended that applications include chlorpyrifos to protect the quality of San Joaquin Valley cotton.

The activity of chlorpyrifos on a wide variety of insects if often considered detrimental for conservation biological control. However, there are cases where the target insect is highly susceptible to chlorpyrifos and use rates are low enough to be compatible with conservation biological control. Katydids are very susceptible to chlorpyrifos. The chlorpyrifos use rates for katydid control is low enough to preserve beneficial insects in California citrus. Beneficials might be reduced or eliminated in citrus if producers were required to use materials with higher use rates.

California is consistently under threat of new pest insect invasions and although new insecticidal products are available, many or most of these are effective against a narrow spectrum of pests. Considering that California has faced nearly one new invasive pest every year for the past decade, it would be risky to eliminate chlorpyrifos as a control tool. Used judiciously, and in cases where other control methods may not yet be available, chlorpyrifos can continue to play an important role in pest management in California.

The economic sustainability of California agriculture is reliant on the use of chlorpyrifos. Although alternative pesticides exist for several of the key pests indicated above, these alternatives can be substantially more expensive. Pesticide costs can be seven times higher than chlorpyrifos for controlling weevils in alfalfa.

In conclusion, the data above demonstrate that the benefits of chlorpyrifos in integrated pest management are significant and should therefore be considered in the decision to revoke its tolerances.

Sincerely,

Matthew Baur, Associate Director

Western IPM Center