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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

Review of New Uses:

SUBJECT: Cyromazine (121301): Celery, Potatoes, and Bulb Vegetables
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The Environmental Risk Branch III has completed the review of the recently submitted Avian Reproduction study, and performed the environmental risk assessment and characterization for the proposed new uses of cyromazine. No new environmental fate data is submitted with these uses. ERB III's findings and conclusions are summarized below.

The review team would like to thank Harry Craven and Mike Davy for providing assistance in performing terrestrial risk assessment.

Environmental Fate

Based on previously submitted data, cyromazine is stable to hydrolysis and photolysis, and is quite persistent in aerobic soil ($t_{1/2} \approx 150$ days). This was confirmed in the field studies, where dissipation half-lives were more than 250 days. Soil adsorption coefficients are generally low, with Freundlich adsorption coefficients (K_{f-ads}) less than 5 for the three tested mineral soils (sand, silty clay loam, and silt loam). This would indicate that cyromazine has the potential to leach through soils, especially sand, silty clay, and silt loam. Melamine was identified as the primary degradate of cyromazine. The persistence ($t_{1/2}$), adsorption (K_d), and dissipation rate of melamine have not been specified, but in terrestrial field studies, melamine is shown to be more persistent and mobile than the parent, and may accumulate in soil with repeated uses. Two other degradates were also

noted, but not identified.

Ground and Surface Water Concerns

A small-scale prospective ground-water study on tomatoes in Florida showed no cyromazine residues in ground-water. However, low levels of melamine, the primary degradate, were detected shallow ground water. Available environmental fate data also indicate that this chemical and its degradate (melamine) have potential to accumulate in soils and leach into ground water over repeated applications and years of uses.

Ecological Risks

Although the proposed application rates for cyromazine use on celery and potato are relatively low, the persistence of this chemical in the environment and the repeated uses could pose chronic risk to birds after 3 applications. Following the requested 6 applications the Rq for short grass was 1.66 and for broadleaf/insects (0.94) -- just slightly under 1. Chronic risk to birds and mammals could not be assessed for bulb vegetable (seed treatment) use, as EFED does not currently have a standard procedure for such assessment. However, assuming only one per cent of seeds are left exposed in a random pattern throughout the field no chronic risk to birds and mammals is presumed from the use of cyromazine on bulb vegetables.

No other LOCs (both chronic and acute) were exceeded.