

US EPA ARCHIVE DOCUMENT

7/26/78

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Addendum to Aldicarb Review 1016-69/78 of 5/18/78

This addendum to the aldicarb review by L. W. Turner (5/18/78) is made on the basis of additional environmental chemistry data that provides a better definition of fate in the environment, the OSPR memo on the implementation of RPAR criteria by R. E. Dreer (1/27/76), and a subsequent re-evaluation of the RPAR risk criteria identified in the original review. Since the RPAR triggers were based on acute hazard, primarily, the OSPR memo states that these should be handled through the Registration Division rather than by referral to OSPR.

The acute risk criteria were based on expected residues as derived from the proposed labels for the various crops. The expected field residues were taken from worst case calculations according to the proposed labels. In most cases they involved directions to incorporate or "work into the soil." Such directions still permit enough granules to be left upon the surface so as to exceed acute risk criteria. The availability of aldicarb granules on soil surface has been of concern for some time. In a letter from the USDA-PRD to Union Carbide, dated March 14, 1969 (quoted in Union Carbide's study DD3 in original review), the following statement was made:

"We have reviewed the simulated field testing with quail as test subjects. Where granules were placed three-four inches below ground surface, test birds apparently suffered no ill effects. Where granules were exposed, as a result of various factors working on shallow placement, hazard apparently became a reality. On the basis of data submitted we require that granules be placed a minimum of two inches below ground surface on the in-furrow treatment. Where dosage or manner of application differs from test conditions additional safety data are required."

This reviewer feels that soil incorporation or "working into the soil" neither meets the intent of the above quote nor sufficiently reduces the potential hazard to quail and probably other avian species. No additional safety information has been seen that indicates that incorporation alone is enough to deal with the hazard.

A second point of consideration concerns irrigation. The registrant has submitted data (study ES-D03, L. Turner review, 5/18/78) that indicates irrigation can reduce the

hazard to quail. This reviewer accepts that conclusion, but notes that 3 of 6 quail died in a plot that had dryland conditions for only 2 hours. The general irrigation statement on the label states. "In irrigated areas, follow application with irrigation within one week." This statement appears to be of minimal value in reducing the potential hazard to avian species.

The following considerations are given for specific crops that were found to exceed acute risk criteria.

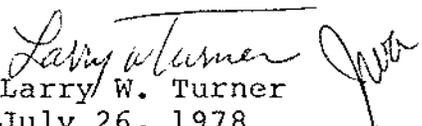
1. Oranges. Working into the soil is unacceptable to reduce avian hazard; shanking is acceptable if followed by immediate irrigation of a specified amount.
2. Pecans. Working into the soil is unacceptable to reduce avian hazard. Shanking is acceptable but should be followed by immediate irrigation in a specified amount (not required on proposed label) or by shanking to a depth of 3-4 inches. The recommendation for deeper shanking is based upon the very high concentration of aldicarb to be placed in a small area.
3. Tobacco. Expected residues following labeled use directions exceed acute risk criteria. However, tobacco fields are not considered to be high use areas for birds and mammals. There can be substantial use by avian species at the time of application, primarily by birds seeking invertebrates that have been turned up by machinery working the soil. As long as use directions allow for dry granules to be left on the surface, there is some concern. However, Furadan 10G granules are currently being used as a tobacco insecticides, and this section has not been made aware of any avian problems. Thus, it is felt that some avian mortality may occur following the proposed use directions, but that it would be limited to a short period at the time of soil disruption and application. This short time period combined with low bird utilization and Furadan experience suggests that the proposed use directions are acceptable. Immediate irrigation is recommended.

4. Dry beans and soybeans. Drilling the pesticide 2-3 inches below the seed line for arthropod control is expected to sufficiently reduce hazard to avian species. Placement 2-3 inches to the side of the seed line may be acceptable if a minimum depth is stated on the label. For nematode control, working into the soil is unacceptable. Covering with soil 2-4 inches (preferably 3-4 inches) is acceptable. Irrigation in a specified amount immediately following application is highly desirable.

The endangered species RPAR risk criteria for the Delmarva peninsula fox squirrel could be avoided by not allowing aldicarb to be used on soybeans in Talbot and Dorchester counties in Maryland.

This reviewer has identified the use patterns which do not exceed the acute risk criteria for unreasonable adverse effects and made some label recommendations that would permit other uses to be acceptable. None of the uses that are or could be acceptable involve soil incorporation or "working into the soil." However, the acceptable or potentially acceptable uses do not meet the criteria for general use classification. All of these uses are recommended for restricted use classification.

The original review identified the acute data needed to meet the Section 3 requirements. At the time the agency is prepared to accept aldicarb for registration, the registrant should also be required to monitor selected uses in accordance with Section 162.11(c)(5) to determine the extent of the hazard to birds and the adequacy of labeling.

  
Larry W. Turner  
July 26, 1978  
Ecological Effects Branch