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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Prevention, Pesticides, and Toxic Substances
Washington, DC 20460

April 22, 1999

MEMORANDUM

SUBJECT: EFED Response to USDA/Land Grant University Comments on the Profenofos Updated Risk Assessment; Comments Dated April 1, 1999

TO: Carmelita White, CRM
Betty Shackelford, Branch Chief
Reregistration Branch III, SRRD (7508C)

FROM: Nelson Thurman, Environmental Engineer *Nelson Thurman*
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THROUGH: Mah Shamim, Branch Chief *Mah Shamim*
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Summary

Comments from the USDA/Land Grant University reviewers pertaining to the fish kill incidents reported in EFED's revised environmental risk assessment provide additional information into possible reasons for the reported incidents. However, the comments do not change the bottom line conclusions of the risk assessment, which is that the incidents confirm EFED's assessment that, when used according to label directions, profenofos can get into surface waters in sufficient quantities to result in mortality to aquatic organisms.

Such information could be incorporated in the EFED chapter as (1) an additional explanatory paragraph in the section of the chapter that discusses the incident data, and (2) as an additional consideration in the risk characterization section. This would entail a minor revision to the EFED chapter and would not substantially alter the overall risk assessment.

Discussion of Fish Kill Incidents in Light of USDA Comments

EFED's revised environmental risk assessment for profenofos (dated 12/18/98) incorporated fish kill incidents reported in 1994 and 1996. Only those incidents which (a) were deemed to be reliable, (b) identified profenofos as the likely or probable cause of the kills, and (c) did not attribute the incidents to misuse were included in the assessment. EFED interpreted the incidents as further evidence of the risk that exists to aquatic organisms from the use of profenofos with existing label precautions.


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The USDA/Land Grant University reviewers noted that these kills were associated with a heavy outbreak of tobacco budworm. They concluded that, given the alternatives now in place for tobacco budworm control and a volunteer stewardship program developed by the registrant and states, these kills "are not expected to occur again." Indeed, use data provided by the USDA National Agricultural Statistics Service does show that profenofos use has declined in 1996 and 1997. A comparison of profenofos use in Louisiana and Mississippi with years of reported fish kill incidents shows that in 1994, when 2 kills were reported in Louisiana and 3 in Mississippi, profenofos was used on 38 to 39 percent of the cotton acreage in those states (USDA NASS data). In 1996, profenofos use in Mississippi dropped to 5% of the cotton acreage in that state. While profenofos use on cotton in Louisiana had also dropped, to 19% of the acreage in 1996, 8 fish kill incidents were reported that year. We do not have enough information to determine whether those incidents occurred in areas where profenofos alternatives had not penetrated the market area or whether profenofos use had also decreased in those areas as well.

While this additional information provides a possible explanation for the factors leading to the incidents, it does not change the conclusion that, when used according to label directions, profenofos can get into surface waters in sufficient quantities to result in mortality to aquatic organisms.

In addition, we would add a recently-received report of another incident in which 1,000 fish were killed in Washington County, MS, on 8/19-25/97. This incident was attributed to aerial misapplication. The applicator allegedly oversprayed pesticide products containing profenofos directly on ponds in cotton fields. The existing label calls for a 500-foot aerial spray buffer around impounded waters. However, a "substantial rain" also fell on the evening of the second day of application and we cannot separate the contribution of direct overspray from runoff in this incident. The dead fish were found both in a catfish farm pond and in Deer Creek. The fish kill found in the creek is likely from the cotton fields to the west from runoff due to the rainfall. The high concentrations of profenofos (27 to 30 ug/L, twice the bluegill LC_{50}) found in water samples taken from the creek on 8/26, suggest that runoff contributions continued after the spray incident. No other pesticides were found in the water samples. The report refers to a similar, previously unreported, incident that occurred two years previously and resulted in "a large fish kill."