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

NOV 30 2002

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Memorandum

From: Larry Turner, Ph.D.
William Erickson, Ph.D.
Environmental Field Branch
Office of Pesticide Programs

To: Arthur-Jean Williams, Chief
Environmental Field Branch
Office of Pesticide Programs

Subject: Effects Determination for Triclopyr TEA for Pacific Anadromous Salmonids

We reviewed the available data and other information for triclopyr triethylamine salt (TEA) and its potential effects on Pacific anadromous salmonid and their critical habitat. Triclopyr TEA was cited by the Washington Toxics Coalition (WTC) as a pesticide they believe warrants review. The basis of their concern appears to be in the Reregistration Eligibility Decision (RED) of October, 1998, which included an ecological risk assessment for nontarget fish and wildlife. In that assessment, a level of concern was exceeded only for aquatic plants. Vascular aquatic plants might provide important cover for 26 Evolutionarily Significant Units (ESUs) of listed Pacific salmon and steelhead in California and the Pacific Northwest states. However, based on the toxicity data and estimated environmental concentrations (EECs) of triclopyr TEA in surface waters predicted for current application rates, we conclude that triclopyr TEA will have no direct or indirect adverse affects on these ESUs.

Triclopyr TEA is a systemic herbicide registered to control broadleaved weeds, woody plants, and vines in crop and noncrop sites. Rice is the major crop site. Noncrop sites include woodlands, industrial areas, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, fence rows, non-irrigation ditch banks, around farm buildings, grazed areas, and establishment and maintenance of wildlife openings on these sites, and in Christmas tree plantations. A pending registration for use on wetlands also was recently reviewed by OPP. According to OPP/BEAD's Usage Report, an annual average of 562,000 pounds of triclopyr TEA was used nationwide from 1990 to 1999, with nearly 70% applied to woodland, rice, hay, and rights-of-way. California's Department of Pesticide Regulation reports that 75,287 pounds were used in that state in 2001, and most of that (70%) was used in rice.

Triclopyr TEA is practically nontoxic to fish, with LC50s ranging from 130 to 893 ppm for freshwater and estuarine species for both the active ingredient and formulated product. Acute toxicity tests with chinook, sockeye, coho, and chum salmon provided LC50s of 267 to 493 ppm (Wan et al. 1987). Triclopyr TEA also is practically nontoxic to most aquatic invertebrates, although it is slightly toxic to Eastern oysters (EC50 = 58 ppm). Therefore, we would not predict any adverse effects to the food supply of listed salmon and steelhead. Chronic toxicity also appears to be low for fish and aquatic invertebrates, with NOECs greater than or equal to 80 ppm for adverse effects to reproduction and growth. Based on these toxicity values and predicted EECs ranging from 0.1 to 8.8 ppm for various use sites, the environmental risk assessment in the RED indicated that no acute or chronic level of concern was exceeded.

EC50s for the only aquatic macrophyte tested, *Lemna gibba*, ranged from 8.8 to 11.0 ppm. In addition, tests on algae had EC50s from 5.9 to 32.5 ppm. In the RED, the only level of concern exceeded for aquatic plants was for application to drainage systems, and for vascular aquatic plants only at the maximum application rate of 12 lb ai/acre. However, that use (on product labels referred to as non-irrigation ditch banks) currently has a maximum application rate of 9 lb acid equivalents per acre and the label prohibits direct application to water. That reduction in maximum application rate was required in the RED as a mitigation measure to reduce risk to aquatic plants, and it does not trigger a risk concern for vascular aquatic plants.

A subsequent OPP/EFED risk assessment for the proposed registration of triclopyr TEA to control plants in aquatic sites and wetlands identified no acute or chronic risks to freshwater fish or aquatic invertebrates even from a direct application of 6 lb acid equivalents per acre to 6-inch deep standing water. Under the same scenarios, individual estuarine fish, but not fish populations or estuarine invertebrates, are presumed to be at risk only from a direct aerial application to 6-inch deep water. Vascular aquatic plants were not found to be at risk; therefore, we conclude that triclopyr TEA would not adversely impact aquatic plants potentially used as cover by listed Pacific salmon and steelhead.

References

Wan, M.T., D.J. Moul, and R.G. Watts. 1987. Acute Toxicity to Juvenile Pacific Salmonids of Garlon 3A, Garlon 4, Triclopyr, Triclopyr Ester, and Their Transformation Products: 3,5,6-Trichloro-2. Bull. Environ. Contam. Toxicol. 39(4):721-728.