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

OCT 14 1999

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Memorandum

SUBJECT: Review of California Request for Emergency Exemption of Paraquat for Use in Artichokes to Control Various Broadleaf and Grass Weeds (99CA48)

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TO: Libby Pemberton/Robert Forrest
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We have reviewed the subject request and conclude that from the submitted data we can determine that the situation is non-routine due to the loss of simazine, but cannot determine if it is urgent and likely to lead to significant economic loss if the request is denied. Our rationale follows.

California requests the use of paraquat on artichokes to control common chickweed, mustard, and oxalis buttercup, as well as other older weeds and certain (unspecified) grasses. Artichokes are grown on approximately 9,500 acres in Monterey, San Mateo, and Santa Cruz counties of California. The state claims that the cancellation of simazine for use on artichokes leaves growers without an effective alternative to control the three identified weeds. California artichoke growers may suffer significant economic losses if there are no effective or practical control alternatives. Yield losses of 16% or greater will produce significant economic losses for California artichoke producers. The herbicides registered for usage on artichokes (oxyfluorfen, propyzamide, glyphosphate, diquat and diuron) may not be very effective or are prohibited from use on producing crops. *BEAD concludes that some artichoke growers in California may suffer significant economic losses without the use of paraquat on artichokes to control common chickweed, mustard, oxalis buttercup and certain other weeds.*

Biological Aspects:

The deletion of artichokes from the simazine label has caused growers to seek alternative herbicides for this inexpensive, broad-spectrum, preemergence weed-killer. Simazine was the

only preemergence herbicide registered for producing (not pre-bearing) artichokes. Weeds expected to become troublesome because they are not well controlled by registered alternatives are common chickweed, mustards, and bermuda buttercup, as well as some grasses and weeds that have become too large to be controlled by the only herbicide registered for bearing artichokes in producing season, oxyfluorfen, a postemergence herbicide. No comparative performance data were submitted to show that without simazine yields would probably decline, nor were quantitative loss estimates given. However, without an effective, broad spectrum preemergence herbicide, it is likely that weed control by selective postemergence herbicides such as oxyfluorfen will not be as good. The actual yield loss one might expect cannot be determined from the data submitted, but the 16 percent level that is the borderline for significant economic loss (see below) would not be out of the question, especially if excess rainfall were to occur.

Economic Aspects:

To determine if conditions for yield loss are sufficient to produce significant economic losses (SEL) for artichoke growers in California trying to control a broad spectrum of weeds including common chickweed, mustard, and oxalis buttercup, the net revenue method was used as the basis for determining the SEL. Based upon 5 years of historical artichoke production data and USDA aggregate statistics for California artichoke production costs, a minimum yield loss of 16% would produce a SEL for California artichoke growers. Minimum yield loss is defined as the economic loss that reduces net revenue of artichoke growers from the average value to their five year minimum value with price and cost held constant. For a significant economic loss to occur, yield losses for California artichoke growers would have to meet or exceed the minimum yield loss of 16%. The application did not include projected yield losses with and without simazine, the current control. Therefore, it is not clear whether an emergency exists based upon significant economic losses for artichoke growers or if they will suffer SEL with the controls currently available.

If future requests for exemption of paraquat in artichokes are made, EPA requests that historical economic data for California artichoke producers be provided including artichoke yield losses due to pest pressure, (specifically, yield losses due to specific pest weeds) so that future determinations regarding emergency conditions related to artichoke production in California can be made.