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

NOV 15 1996

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

D224520, D224187

SUBJECT: Comments RE: Griffin Chemical Co. Response to EPA Grassley-Allen Letter to Special Review Propazine Herbicide Uses On Sorghum and "Greenhouse" Uses

FROM: Norman Cook, Acting Chief
Ecological Effects Branch
Environmental Fate and Effects Division (7507C)

TO: Sharlene Matten, Triazine Special Review Coordinator
SACS
Environmental Fate and Effects Division (7507C)

Terri Stowe, Assistant PM
PM Team 25, Fungicide/Herbicide Branch
Registration Division (7505C)

The Ecological Effects Branch (EEB) has reviewed the Griffin Chemical Company response to the Agency Grassley-Allen letter for the triazine herbicide propazine. Griffin Chemical Co. is requesting that the Agency not include propazine in the triazine special review. Griffin is requesting Section 3 registration of propazine herbicide for broadleaf weed control in sorghum and greenhouse grown ornamental plants. Based on EEB files, the following Section 18 reviews for propazine herbicide use in sorghum were conducted: NM (12/20/93), TX (4/15/93), OK (02/01/94), CO (04/07/94), and KS (06/01/94). No Section 18, Section 3, or other Griffin Chemical Co. requests have been reviewed by the EEB for the proposed greenhouse ornamentals use.

Previously, propazine was registered by Ciba-Geigy for use on sorghum. Based on old registration standard documents, propazine was first introduced in 1958. In 1987, approximately 4 to 5 million pounds of propazine were used annually in the United States, mostly on sorghum.

On 12/20/88, the Agency issued a Pesticide Fact Sheet - No. 189 that announced the cancellation or suspension of all propazine registrations. The registrants failed to respond to a Data Call-In Notice, issued in April of 1988 for a groundwater monitoring study, and all uses were subsequently cancelled by the Agency.

EXISTING ECOTOXICOLOGY DATA BASE FOR PROPAZINE HERBICIDE

The EEB eco-tox. data base for propazine herbicide is currently limited to the following studies:

STUDY	TEST MAT.	CAT.	MRID	RESULTS
71-2(a)-Diet. Bob.Quail*	80WP	S	0034121	LC50=7,950ppm
71-2(b)-Diet. Mall.Duck	80WP	S	0034122	LC50=32,000ppm
-Oral LD50, Rat	90T	_	0238806	-LD50=>5,000mg/Kg
-Oral LD50,Mouse	T	_	-------	-LD50=>5,000mg/Kg
72-1(a)-96hr Blue.Sunfish	99T	S	0034124	LC50=>10.0ppm**
72-1(c)-96hr Rainb.Trout	99T	C	0034123	LC50=>16.5ppm
123-1 - Seedling Growth	?	S	5007255	MCL= 51ppm***
		S	5007255	MCL=0.80ppm***
		S	5007255	MCL=0.12ppm***

* Test birds were 6-8 weeks old.
** Precipitate noted at 3 highest test dosages.
*** "Minimum Lethal Concentration"
S = Supplemental
C = Core
WP= Wettable powder
T = Technical grade active ingredient

The Griffin Chemical Co. response to the Grassley-Allen letter contained summaries of the following eco-tox tests that were recently completed or ongoing. These summary sheets cannot be used in an ecological risk assessment for propazine until after the completed studies (with raw data) have been reviewed and determined to be "Core" (C) or "Supplemental" (S) by the EEB. The studies are:

STUDY	TEST MAT.	LAB No.
72-1 - Bluegill Sunfish	?%AI	ABC 41953
72-2 - Daphnia magna	?%AI	ABC 41954
72-3 - Mysid shrimp	?%AI	ABC 41955
72-4 - Chronic Daphnia	98%AI	ABC 41958
72-4 - Chronic Fathead Min.	?%AI	ABC 41957
72-4 - Chronic Mysid	?%AI	ABC 41960
72-4 - Chronic Sheepshead Mi.	?%AI	ABC 41959 (In Prog.)
71-1 - Acute Oral Bobwhite	?%AI	ABC 41757
71-2 - Acute Diet. Bobwhite	?%AI	ABC 41758
71-2 - Acute Diet. Mallard	?%AI	ABC 41759
123-2- Selenastrum capric.	?%AI	ABC 41962
123-2- Lemna gibba	?%AI	ABC 41963
123-2- Navicula pelliculosa	?%AI	ABC 41966
123-2- Skeletonema costatum	?%AI	ABC 41967
123-2- Anabaena flos-aquae	?%AI	ABC 41968

Results from the above listed studies are presented on pages 25-31 of the Griffin Chem. Co. rebuttal to the Grassley-Allen letter and are study author conclusions only. These studies have not been reviewed by the EEB to date. No reference is made by Griffin to the status of 123-1 Tier II Terrestrial Nontarget Plant Phytotoxicity studies. These studies, in addition to those listed above, will be necessary in order to conduct a complete risk assessment for propazine.

The most recent propazine Section 18 sorghum risk assessment (D203404) concluded that a complete risk assessment was not possible due to major acute and chronic data gaps for most of our plant and animal test organisms. However, a limited risk assessment was conducted using 1.2 lb.ai/acre aerially applied to sorghum. This risk assessment concluded that acute risk to birds, mammals, and fish appears to be minimal. This risk assessment was incomplete due to the absence of an acute oral avian study, an acute aquatic invertebrate study, acute estuarine studies (one fish, one mollusc, and one shrimp), and nontarget plant phytotoxicity studies (5 aquatic and 10 terrestrial species - seedling emergence and vegetative vigor). Also missing are the chronic studies: one freshwater fish, one estuarine fish, one freshwater aquatic invertebrate, one estuarine aquatic invertebrate, and two avian reproduction studies.

The EEB is unable to conduct a complete acute and chronic risk assessment for propazine herbicide at this time. The above Griffin referenced studies plus nontarget plant phytotoxicity studies must be submitted and reviewed prior to use in an ecological risk assessment.

ENVIRONMENTAL FATE AND EXPOSURE

The Environmental Fate and Groundwater Assessment Branch (EFGWB) has reviewed the Griffin Chemical Co. response to the Grassley-Allen letter (EFED memo from Nelson Thurman to Sharlene Matten 4/18/96). The EFGWB has concluded that thay cannot assess the fate of propazine in the environment without a more complete data base, as many studies are missing. Propazine, like the other triazines, is mobile and persistent and is expected to leach through soil into groundwater in areas where soils are permeable, particulary where the water table is shallow.

The EEB defers to the EFGWB regarding the fate of propazine herbicide in the environment.

The Griffin Chem. Co. has put forth the argument that propazine will only be used to control broadleaf weeds in sorghum grown in dry-land areas of the U.S., specifically in the High Plains, Rio-Grande, and Gulf Coast regions of Eastern Colorado, Eastern New Mexico, Western and Central Texas, and Western Oklahoma. This sorghum growing area accounts for 35% of total U.S. sorghum acreage. Propazine will be used every 3rd year on these soils in a 3 year rotation with cotton (cotton 2 years, sorghum the 3rd year). Also, Griffin has concluded that 80% of the projected market area receives 35 inches or less of rainfall per year.

In addition to restricting use to once every 3 years and use only in the dry-land areas described above, Griffin is also willing to further restrict use in 4 coastal plain counties that contain 35,800 acres of higher rainfall and permeable soils with high surface water and groundwater contamination potential. The counties are Love County, OK, Washita County, OK, Okmulgee County, OK, and Brooks County, TX. To protect shallow groundwater, the label will state: "Do not use on sandy or loamy sand soils". The Griffin response also stated willingness to include additional prohibitions such as setbacks from water bodies to minimize potential drift and runoff, and restrict aerial application on fields adjacent to water bodies to reduce drift load.

Griffin has also expressed willingness to conduct monitoring studies in sorghum use areas with high potential for surface water runoff, groundwater contamination, and drift to adjacent water bodies.

The Griffin response did not address non-agricultural uses ("greenhouse" ornamental use) in this rebuttal to the Grassley-Allen letter.

The Griffin Chem. Co. provided an analysis of how the proposed sorghum use will result in much less potential for surface water and ground water contamination than the use of other triazines on corn and sorghum. The use of atrazine on corn, for instance, covers many more acres in the U.S. and is used in areas with high annual rainfall and on soils with greater potential for surface water and ground water contamination. This argument was put forth based on the premise that propazine would only be registered for use on sorghum grown in areas receiving less than 35 inches rainfall per year.

The EEB suggests that we further meet within EFED to discuss the Griffin proposals in the absence of complete eco-tox and environmental fate data bases. We should also meet with BEAD to further discuss propazine use areas vs other triazine herbicide use areas (rainfall patterns, soil types, usage).

If you have any further questions regarding this review, please contact Richard Petrie @ 305-7358, Room 1004, CM-2.