UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APR - 4 2000

April 4, 2000

MEMORANDUM

Subject: Review of Minnesota, Montana, and North Dakota Requests for Emergency Exemption of Ethalfluralin for Use in Canola to Control Kochia (00-MN-13, 00-MT-03, 00-ND-10)

From: George W. Keitt, Jr., Plant Physiologist
Herbicide and Insecticide Branch
Biological and Economic Analysis Division (7503C)

To: David Deegan/Meredith Laws
Minor Use, Inerts and Emergency Response Branch
Registration Division (7505C)

I have reviewed the subject request and conclude that the situation may well be non-routine and urgent for growers who cannot use glyphosate or glufosinate on genetically modified canola, due to increasing prevalence of kochia that is resistant to the ALS-inhibiting herbicides comonly used in small grains, and may well result in significant economic loss to such growers if the request is denied. However, the estimates of loss are based on expert opinion and not on study data, and it is not clear how present expected losses compare with past experience, as kochia is not a new weed. My rationale follows.

Biological Aspects:

The non-routine aspect of this request is two-fold. There are increasing numbers of populations of kochia that resist the sulfonylurea herbicides that are used in small grains, a rotational crop, resulting in increased pressure from this highly competitive weed. Second, the use of genetically modified canola for use with glyphosate (Round-up Ready [RR] canola) or glufosinate (Liberty-Link [LL] canola) is a problem with growers because there may not be a ready market for GMO crops, and because there is a modest yield reduction in these modified strains compared with standard canola varieties. These points are valid. It is also claimed that there is not enough RR or LL seed to supply all growers; data to support this were not provided, so I cannot assess the reliability of this statement.

Dr. Brian Jenks, the knowledgeable expert, says that kochia was a severe problem last

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SURNAME	Keitt	Anderson						
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year, which was relatively moist. Canola is more competitive in moist conditions. He fears that in a dry year, kochia could cause very severe crop losses. There seem not to be direct data on the competition between kochia and canola; Jenks said he had tried twice to generate data but in one year the plots were rained out and in another, destroyed by hail. He is trying again this year.

Therefore we consider that kochia is probably very competitive with canola, based on its impact on other crops, but must note that this factor is presently unquantified. Canadian authorities were asked for such information, but they did not have any, probably because kochia is not such a serious weed there.

Information sent to EPA in regard to previous requests for emergency exemption of ethalfluralin in canola indicated that in Minnesota there was concern for crop phytotoxicity. In North Dakota and Montana that seems not to be a problem, because the crop tends to compensate and yields were not reduced in the one instance last year where early crop damage occurred, under conditions of heavy rain at planting time, which delayed crop germination. Minnesota seems to have changed its tune, as it is applying for ethalfluralin this year as well. Dr. Jenks said that the granular formulation of ethalfluralin may be less damaging to the crop than the liquid one, and the granular is the one preferred by growers as it is faster to apply than sprays, due to fewer reloadings than are needed with a spray tank.

Yield loss estimates range from 25-35 percent, which is up from the 15-35 percent estimated in 1998. The basis of this estimate is expert opinion, not study data. It is not clear how this estimate compares with previous years, as this weed has been a problem for some time.

Economic Aspects:

No formal economic analysis was done, as there was no evidence that projected yield losses are significantly greater than usual from this weed.

References

1. Jenks, Brian. 2000. Cooperative Extension Service, North Dakota State University. Telephone conversation with George Keitt 4/3/00.

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