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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

JAN 11 2005

MEMORANDUM

SUBJECT: Projected Percent of Crop Treated Estimates for Propazine on Sorghum (080807)

FROM: Tim Kiely
Steve Smearman
Biological and Economic Analysis Division (7503C)

THRU: Steve Jarboe, Team Leader
OPP Usage and Label Use Team
Biological and Economic Analysis Division (7503C)

TO: Diane Sherman
Special Review and Reregistration Division

Attached is a package of usage and/or label use data reports for chemical Propazine (080807). The reports included in this package are electronically-transmitted to reviewers or team members in the Office of Pesticides Programs (OPP) in support of the pesticide reregistration process. They can be displayed in various formats (Corel, Lotus 1-2-3, MS Word, Excel, Adobe Acrobat), so it is advised to launch or detach each report to view or print from the appropriate program.

For questions, comments and other usage or label use information requests, please contact the name listed on the memorandum header, the **OPP Usage and Label Use Team** (our group e-mail address in Lotus Notes), or any of its members: Julie Heflin (308-9086), Steve Jarboe (308-8105), Rafael Prieto (308-8152), or Sharlita Harris (308-8147).

1/11/05

Projected Percent of Crop Treated for Propazine on Sorghum

SRRD and HED have asked BEAD to evaluate the potential extent of use (projected percent of crop treated) of propazine on sorghum if it becomes registered on sorghum. It is BEADs understanding that this information will be used in the dietary risk assessment for propazine. Typically when BEAD projects the use of a new chemical on a crop, we use a tiered approach. In the first tier, for each crop, we look at the chemical of the same type (e.g., herbicide) with the highest percent of crop treated on that crop according to the most recent USDA National Agricultural Statistics Service (NASS) Chemical Use publication estimates. If the dietary risk assessment fails with the estimates provided in the first tier, we will refine the estimates for the risk drivers taking into account the target pest(s) of the new chemical on each crop and the projected alternatives to the new chemical on each crop.

For propazine, SRRD and HED are requesting an estimate of the projected percent of crop treated on sorghum. For sorghum, the herbicide with the highest percent of crop treated is atrazine, at 70% of the US sorghum crop treated (USDA NASS Agricultural Chemical Usage, Field Crops Summary, 2003). Based on this information, we would project the highest percent of the US sorghum acreage potentially treated with propazine to be 70%. That is, we would expect the use of propazine on sorghum to be no larger than that of the most used herbicide, atrazine.

In the case of propazine, however, there is additional information available to consider. The information suggests that propazine may not replace atrazine on sorghum, but may, instead, fill a gap in weed control on sorghum in a select number of states. BEAD analysts, Bill Phillips and Nicole Zinn (B. Phillips & N. Zinn, Atrazine/Propazine Use on Sorghum, EPA, 2004), performed an analysis of the potential for propazine to replace atrazine on sorghum, and, although there is the potential for this replacement, they found that most of the evidence suggests that propazine will not replace the use of atrazine on sorghum. One piece of evidence, for example, is that in the time since propazine was removed from the market for weed control on sorghum (1989), there has not been a significant change in the number of sorghum acres treated with atrazine (EPA data). This information suggests that growers previously using propazine on sorghum did not move to using atrazine after propazine was taken off the market. (BEAD has not conducted an analysis regarding what herbicide farmers switched to after propazine was removed from the market.)

Based on Bill and Nicole's analysis (and information provided by the registrant during the SMART meeting with the Agency), sorghum growers in a few states (namely Colorado, Kansas, New Mexico, Oklahoma and Texas) are particularly interested in the use of propazine on sorghum - all of these states (except Oklahoma) have submitted Section 18s for the use of propazine on sorghum. Although there is no data to suggest how much of the sorghum acreage in these states will be treated with propazine, the data that is available suggests that none of the acreage currently treated with atrazine will be replaced by propazine. Therefore, the use of propazine could occur on some portion of the remaining sorghum acreage not currently treated with atrazine in these states. Since we do not know how much of this acreage has the potential to be treated, we assume that all of the non-atrazine treated sorghum acreage would be treated with propazine in these states. This is likely an overestimate, but there are probably other areas of the country where propazine will be used, and we are likely underestimating when we assume (under this scenario) that none of the current atrazine treated acreage would be replaced with propazine.

In Colorado, New Mexico, Oklahoma, Kansas and Texas, atrazine was applied to an estimated 30%, 70%, 52%, 79% and 59% of the sorghum acres planted in these states in 2003, respectively (USDA NASS Agricultural Chemical Usage, Field Crops Summary, 2003). (New Mexico was not surveyed by USDA/NASS in 2003. Thus, the national percent of crop treated with Atrazine - 70%, is assumed.) Using the assumptions made above, we would estimate that 70% (or 0.2 million acres) of the Colorado sorghum acreage would be treated with propazine; 30% (or 0.1 million acres) of the New Mexico sorghum acreage would be treated with propazine; 48% (or 0.1 million acres) of the Oklahoma acres would be treated with propazine; 21% (or 0.8 million acres) of the Kansas sorghum acreage would be treated with propazine; and 41% (or 1.3 million acres) of the Texas sorghum acreage would be treated with sorghum. For the US, assuming the use of propazine in only these five states, this amounts to 2.5 million sorghum acres (or 29% of the US sorghum acreage) treated with propazine.

In summary, there are two scenarios to consider when estimating the projected percent of the US sorghum crop treated with propazine. The first assumes that propazine will replace the herbicide with the highest percent of the US sorghum crop treated. Under this scenario, the maximum percent of the US sorghum acreage that could potentially be treated with propazine is 70% (which is the current (2003) estimate of the percent of the US sorghum acreage treated with atrazine (USDA NASS Agricultural Chemical Usage, Field Crops Summary, 2003)). The second scenario assumes that propazine will not replace atrazine and instead will be used to fill a separate, unfilled niche in weed control in select parts of the country. Under this second scenario, the estimated percent of the US sorghum crop treated could potentially be as high as 29%. More than likely, it is some combination of the two scenarios, but, in the absence of more data, it is difficult to predict the combination. (Please see Table 1 for a summary of the analysis.)

Table 1. Projected Percent of US Sorghum Crop Treated with Propazine Under Three Scenarios

Scenario	Estimated Projected Percent of US Sorghum Acreage Treated with Propazine	Comments
1	70%	Assumes propazine will replace the herbicide with the highest percent of the US sorghum crop treated. On sorghum, the herbicide with the highest percent of crop treated is atrazine, which was applied to an estimated 70% of the US sorghum crop in 2003. [1]
2	29%	Assumes propazine will fill specific weed control niche in sorghum. Assumes all non-atrazine treated sorghum acreage in Colorado, New Mexico, Oklahoma, Kansas and Texas will be treated with propazine.[1, 2]

1. Sources: USDA National Agricultural Statistics Service (NASS) Agricultural Chemical Usage Field Crop Summary 2003 and USDA/NASS Acreage supplement; B. Phillips & N. Zinn, Atrazine/Propazine Use on Sorghum, EPA, 2004; EPA data.

2. This estimate is probably an overestimate. The estimated propazine use in the late 1980's, prior to the product leaving the market, was approximately half of the estimated use in scenario 2. In addition, propazine use under Section 18 during the mid-1990s was significantly less than the estimate of 29% of the US sorghum crop treated. According to EPA data, the percent of the US sorghum crop treated with propazine during this time period was no more than 5%.

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R137081

Chemical: Propazine

PC Code: 080808
HED File Code: 71400 BEAD Other
Memo Date: 1/11/2005
File ID: 00000000
Accession #: 000-00-0116

HED Records Reference Center
1/8/2007