8-7-95

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

August 7, 1995

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Response to Ciba-Geigy Regarding Triazine Benefits Analysis

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TO: Allen L. Jennings, Director
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In response to Ciba's presentation regarding the economic/benefits analysis of the triazines and our review of relevant chapters of their submission, we recommend clarification and evaluation of the following issues.

1. Ciba Corn Herbicide Model: details.

In order to properly evaluate the use of the corn herbicide model we need clarification of several matters.

A. Please provide details of how the weed incidence/yield loss values were calculated, and what criteria were used in collecting the data. Specifically, were paired comparisons made from field plot studies, or were aggregated ratings used? Were regression experiments used to estimate the yield losses?

B. For all of the assessments, it was unclear how the market shares were apportioned to the alternative pesticides. In the case of the simazine products, the current market shares do not sum to the post-triazine ban market shares.

C. Please clarify the timetable (expected onset and duration) for each of the resultant impacts in the event of an atrazine and triazine ban, respectively.

D. How will the phaseout of cyanazine by DuPont affect the usage and benefits of atrazine and simazine?

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2. Ciba Corn Herbicide Model: projections regarding trends in tillage practices.

The discussion of comparative costs of corn production as well as how tillage practices may be influenced in the event of an atrazine or triazine ban would be more complete if the registrant would assess use and potential economic impact involving all major tillage practices and not solely no-till. Please consider the following:

A. Assuming that growers would not change their current tillage practices, what yield and cost effects would an atrazine ban have on growers who currently practice any form of conservation tillage (no-till, mulch till, ridge till) or conventional tillage? Would yields change (up or down) if growers switch from no-till to conventional till? Please elaborate.

B. A significant factor driving the recent growth in no-till is the conservation compliance provisions of the USDA commodity programs. Since this effect will be fully realized by 1995, it is not apparent what new factors will enable the percent of corn acreage in no-till to continue to climb at historical rates. Please discuss your rationale for projecting such marked increases in the adoption of no-till if the triazines are still available.

C. We would expect stabilization near current levels of no-till acreage to occur if the commodity programs are terminated. Did Ciba have different assumptions regarding the baseline and projected acres in no-till for the two different farm program scenarios?

3. Ciba Corn Herbicide Model: selection of alternatives.

The registrant should consider lower use rates of atrazine as an additional input (alternative) in the Ciba corn herbicide model as opposed to evaluating only total bans. Please consider the following:

Does the university/Ciba data base contain any efficacy data with atrazine treatments at rates lower than current label rates? If so, it would be advantageous to run these scenarios through the model to determine the impact of using lower rates, perhaps in association with other herbicides. This may likely be essential for risk mitigation short of cancellation.

4. Changes in crop rotations.

If there is an atrazine or triazine ban, a shift in crop rotation patterns may result. Please consider the following: Does Ciba have any information on potential changes in crop rotation and if so what are the economic implications of different rotation patterns?

5. Assumptions regarding AGSIM.

Please consider the following:

A. Both on-farm and off-farm impacts regarding changes in tillage practices for the affected 15 percent of acreage (the percent of corn acres in no-till is expected to fall from the projected 30 percent to 15 percent if atrazine is not available) were included in AGSIM. It seems unlikely that growers/users include all of these off-farm impacts (damage caused from higher soil runoff) into their production decisions. We strongly suggest that all off-farm impacts be omitted from AGSIM.

B. Is it possible to disaggregate the impacts estimated by AGSIM, presenting the revenue (yields) and cost (chemical, on-farm impacts associated with tillage practices) impacts for each of the following groups: 1) for corn growers, both (a) non-users and (b) users, by the different types of tillage practices, 2) for growers of other field crops, and 3) for the various segments of consumers (livestock, corn syrup, etc.).

C. AGSIM does not appear to distinguish between users and non-users of atrazine. Therefore, the total impacts including changes in chemical costs and expected yields, damages due to drift, and on-farm and off-farm impacts associated with changes in tillage practices were averaged over all corn growers in the respective regions and inputted into AGSIM to estimate the acreage planted to the different field crops. Are these estimates biased upwards or downwards because AGSIM does not currently distinguish between users and non-users?

6. Minor Sites:

Given the estimated cost changes from using alternative control measures in the absence of the triazines for the minor use sites (citrus, fruits, nuts, sugarcane, turf, etc.), is Ciba aware of any yield and/or quality changes that may occur from using the alternatives mentioned in the original submission? Also, are the potential impacts of simazine loss on orchard establishment (non-bearing phase) different from impacts on mature orchards? If so, please elaborate.

Chapter 11, Comparative Analysis of Alternatives in Corn, reportedly includes information on the benefits of atrazine to control weeds and grasses in **all** types of corn. However, herbicides available for use in sweet corn and popcorn are somewhat different than those available for field corn. Please address whether the estimated impacts reported in Chapter 11 are sufficient for the sweet and popcorn markets. Given that the market structures are considerably different and production practices are somewhat different between field, sweet, and popcorn, is it not likely that estimated impacts from banning the use of atrazine and simazine on sweet and popcorn differ from that of field corn? Would the alternative selections be different? Please elaborate on this point.

7. Worker exposure for lawn care uses:

The data supporting our estimates of worker exposure for lawn care applications are very limited, and we are uncertain how applicable the California data submitted by Ciba are to the Southeastern states where most applications are made.