7-30-90

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1) **Chemical:** fenoxyprop - P-ethyl

2) **Test Material:** Formulated fenoxyprop- P-ethyl; tested as 7.2% a.i. D-isomer.

3. **Study Type:** Non-target Plant Phytoxicity - Terrestrial Plants, Tier I Seed germination /Seedling Emergence.

4. **Study ID:**

Chetram, R.S. 1989. Tier I. Seed Gemination/Seedling Emergence Nontarget Phytotoxicity Study HOE--046360. Study No.: LR88-110B.
Performed By: Pan-Agricultural Labs, Inc.
Madera, CA.

Submitted by: Hoechst Celanese Corp.
Somerville, N.J.
MRID NO.: 412769-04

Submission Volume: 4 of 7

5. **Reviewed By:**
Richard C. Petrie
EFED/EEB

Signature: Richard C. Petrie
Date: 7/30/90

6. **Approved By:**
Ann Stavola, Head, Section 3
EFED/EEB

Signature: Ann Stavola
Date: 7/30/90

7. **Conclusions:** This study is scientifically sound and satisfies the Agency guideline requirement for 122-1 Tier I Non-target Plant Phytotoxicity testing for seed germination/seedling emergence. The maximum proposed label rate (Super Acclaim label) was not used (42 oz/A), however, testing at the 22.4 oz rate (Super Whip label) resulted in a greater than 25% detrimental effect on plant growth occurred on corn, oat, ryegrass, and onion.

8. **Recommendation:**

A Tier II non-target plant seed germination/seedling emergence study is required.

9. **Background:** Non-target plant phytotoxicity studies were requested of the registrant by EEB on July 17, 1988.

10. **Discussion of Individual Tests:** N/A

11. **Materials and Methods:**

A use rate of 1.4 pints (22.4 oz) per acre of formulated HOE 046360 end product was used in this test. Seeds of soybean, lettuce, carrot, tomato, cucumber, cabbage, oat, ryegrass, corn, and onion were used. For the seed germination test 10 seeds of each crop were placed in treated filter paper in petri dishes. Lettuce was incubated for 7 days at 18± 1°C and the remaining 9 crops for seven days at 25±1°C. Radicle length was then measured 6 or 7 days later. For the seedling emergence study, 10 seeds of each crop were planted in plastic pots. The test compound was applied in the equivalent of 50 gpa water using a belt sprayer. Seedling height, percent of seedlings emerged, and phytoxicity ratings were recorded 7, 14, 21 and 28 days after treatment to the soil surface using 241.4 ppm ai HOE 046360.

A one way analysis of variance F-value test was used to statistically evaluate the results.

12. **Reported Results:**

HOE 046360 applied at 1.4 pints/acre (22.4 oz.) had no significant effect on percent germination of the plant species tested. The results ranged from a 6% increase in ryegrass to a 12% decrease in soybeans. Treatment of the seeds did have a statistically significant adverse effect (greater than 25%) on there radicle length of oat, ryegrass, corn, and onion. Test results are reported as follows: Corn (-77%), oat (-74%); ryegrass (-68%), onion (-32%), soybean (-17%), cabbage (-6%), carrot (-6%), cucumber (+2%), lettuce (+10%), tomato (+14%).

Treatment of the soil surface with 1.4 pints/acre (22.4 oz) HOE 046360 resulted in significant adverse effects on seedling emergence; a greater than 25% detrimental effect on radicle length of oat, ryegrass, corn and onion; on plant height of ryegrass and corn, and plant dry weight of ryegrass and onion.

Plant Height: Corn (-53%), ryegrass (-32%), carrot (-5%), oat (-4%), soybean (-4%), onion (-3%), cabbage (+3%), Lettuce (+5%), Tomato (+5%), cucumber (+7%).

Plant Dry Weight: Onion (-31%), ryegrass (-27%), lettuce (-15%), tomato (-8%), soybean (-6%), Corn (0%), carrot (+7%), cabbage (+17%), cucumber (+19%), oat (+21%).

13. **Study Authors' Conclusions/Quality Assurance Measures:**

Application of 1.4 pints (22.4 oz) HOE-046360 (fenoxaprop-P-ethyl) caused a greater than 25% detrimental effect to the growth of oat, rygrass, corn, and onion in this Tier 1 non-target plant seed germination/seedling emergence study.

A statement of compliance with good laboratory practices was signed by the Pan-Agricultural Labs, Inc. project manager.

14. **Reviewers Discussion and Intepretation of Study Results:**

A. Test Procedure: In general, the Tier I non-target plant seed germination/seedling emergence study was conducted per Subdivision J. Guidelines.

B. Statistical Analysis: No statistical analysis was conducted by reviewer. A determination of detrimental effects greater than 25% was by observation of the data.

C. Discussion/Results: A greater than 25% detrimental effect on radicle length after seed germination and on plant height and plant dry weight after emergence occurred as follows:

Crop	S.G. Radicle length	S.E. Plant Height	S.E. Plant D.W.
Corn	77%	53%	
Oat	74%		
Ryegrass	68%	32%	27%
Onion	32%		31%

A less than 25% detrimental effect was noted in these tests for carrot, soybeans, cabbage, lettuce, tomato, and cucumber.

D. Deviations From Procedures/Protocols:

Test guidelines call for use of the maximum label rate. The maximum label rates are as follows:

Label	Crop	Max. Rate
SuperWhip -	Soybeans -	22.4 oz. (1.4 pts.)/A
SuperWhip -	Rice -	19.2 oz. (1.2 pts)/A
SuperWHip -	Conservation Reserve Acres -	22.4 oz. (1.4 pts)/A
SuperAcclaim -	Rights-of-way, Ornamentals, Turf. -42.0 oz.	(2.6 pts.)/A

Based on the proposed labels 42 oz. (2.6 pts.)/A should have been tested.

E. **Adequacy of the Study:**

1) Classification - Core

2) Rational - A greater than 25% detrimental effect occurred on 4 test species at the 22.4 oz (1.4 pt.)/Acre rate.

3) Repairability - N/A

15. Completion of One Liner: N/A

16. CBI Appendix: N/A