EFE BRANCH REVIEW

DATE: IN ____ OUT ____ IN ____ OUT ____ IN 12/20 OUT 12/23/76

FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 9538-L

PETITION OR EXP. PERMIT NO. ____

EFB DIV. RECEIVED 11/4/76

DATE OF SUBMISSION 10/25/76

DATE SUBMISSION ACCEPTED ____

TYPE PRODUCT(S): I, D, (H) F, N, R, S Growth Regulator

PRODUCT MGR. NO. Bob Taylor (25)

PRODUCT NAME(S) Flo-Mo 810 Sucker

COMPANY NAME Sellers Chemical Corporation

SUBMISSION PURPOSE Registration on Flue-Cured tobacco

CHEMICAL & FORMULATION Fatty Alcohols (C_6-0.04%, C_8-45.1%, C_{10}-54.5%) - 85%

(6.04 lb ai/gal)

(1)

200.0 Introduction:

200.1 Uses:

See attached use sheets.

200.2 Background Information:

Sellers Chemical Corporation is requesting registration of Flo-Mo 810 Sucker (fatty alcohol), a growth regulator for use on flue-cured tobacco in a sequence with any of three formulations of Maleic hydrazide for sucker control (Uniroyal MH-30 Reg. No. 400-41; Royal MH-30 Reg. No. 400-84; or Riverside MH-30 Reg. No. 9779-222).

On 12/12/75, the company submitted the initial registration package and on 1/26/76, the same data was submitted for an experimental use permit. Both packages were reviewed on 4/20/76 and an EUP was issued; however, registration was denied pending compliance with several comments appearing in the EPA letter to the company dated May 18, 1976. On Oct. 25, 1976, the company resubmitted the same data along with new data from the 1976 test plots.

201.0 Data Summary:

201.1 Abstract of Test Reports

Copies of data summary, EPA letter of 5/18/76, and a revised label are filed in the EEEB.

201.2 Brief Description of Tests

The 1975 data were from 15 small (20 tobacco plants) replicated test trial from five counties in the state of North Carolina. Tobacco varieties tested were: Speight and Cocker. Check trials received OST-85 (off-shoot), Royaltac, or TNS (topped not suckered). None of the trials, however, received label recommended rates of Flo-Mo 810 Sucker. Ten of the trials reported unacceptable sucker control at all rates. Phytotoxicity data was acceptable; however, none of the 10 trials reported on yield or quality of tobacco. The remaining five test trials each received 2 gallons per acre of Flo-Mo 810 Sucker followed by either 0.75 or 1.5 gallons per acre of Maleic hydrazide. All five trials reported acceptable sucker control without affecting crop safety. Two of the trials reported acceptable tobacco yields and quality relative to check trials.

The 1976 data were from 20 small (20 tobacco plants) replicated test trials from five counties in the state of North Carolina and one county in the state of Georgia. Tobacco varieties tested were: Speight, Cocker, and McNair. Check trials received OST-85, Royal, Royaltac, sucker plucker, HS (hand suckered), and TNS (topped not suckered. Test results showed that Flo-Mo 810 alone at one or two treatments was not an effective growth regulabor in controlling (or inhibiting) sucker growth (axillary buds) in tobacco. Acceptable tobacco sucker control was achieved when Maleic hydrazide was applied 7-10 days after one or two treatments with Flo-Mo 810 at label recommended rates. None of the treatments caused any significant crop injury. Crop yields and crop quality were comparable to control trials.

EPA letter of May 18, 1976:

The Company complied with our comments appearing in the EPA letter of May 18, 1976 with certain changes: 1) question 1 page 3: the company restricted use on flue-cured tobacco only; 2) question 3 page 3: the company restricted use with commercial power equipment and deleted hand spraying; 3) question 6 page 2: relative to hand spraying was deleted; 4) question 5 page 3: the company changed label directions recommending a second application only if substantial secondary sucker growth occurs.

202.0 Conclusions

202.1 Claims Supported by the Data Submitted:

Data submitted show that Flo-Mo 810 sucker in a sequence with any of three formulations of Maleic hydrazide effectively controlled tobacco suckers without affecting crop safety or crop yields.

202.2 Additional Data Required to Support Claims and Achieve Registration:

To achieve full registration of Flo-Mo 10 sucker, comparability quality data ~~must~~ should be submitted comparing the physical and chemical properties of Flo-Mo 810 treated plants, OST-85 treated controls, MH-30 treated controls, and hand suckered tobacco plants. Where there is a treatment, test samples must receive maximum label rate in a minimum spray volume. Comparability quality data ~~must address the following:~~ should be submitted To show that no reduction in quality is experienced as a result of the treatment. This data may include:

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1. Physical properties of cured tobacco leaves such as color, texture, smell, ~~and dollar value/100 wt.~~

2. Warehouse evaluation.

3. Smoke-taste screening test (off-flavors).

4. Quality evaluations based on percent usable ~~by~~ tobacco ~~companies.~~

5. ~~Chemical~~ Properties of Flue-cured tobacco leaves including: a) nicotine or total alkaloids, b) reducing sugars, c) total volatile bases, d) total volatile bases minus nicotine, e) total ash, f) equilibrium moisture content, ~~and g) filling value.~~ or other data indicitave of tobacco quality

203.0 Label Comments

1. Correct percentage active ingredients to total 85%. It would seem that the C_6 is equivalent to 0.4% instead of 0.04%.

2. Label must be specific as to the nature of the diluent when using Maleic hydrazide. Any solutions other than water must be supported with efficacy data.

3. Label must contain a statement recommending that all precautions on the Maleic hydrazide labels must be observed.

4. Under directions for use, label statement "Flo-Mo 810 sucker should be followed ..." should read "Flo-Mo 810 sucker must be followed ..."

5. To form fatty alcohol emulsions, normally water is added to the fatty alcohol concentrates rather than the fatty alcohols to water as you recommend. If that is the case with your formulation, label must contain the correct directions for mixing.

204.0 Recommendations

This submission is unacceptable until additional quality data are submitted and all label comments are resolved as requested in the above two sections (#202.2 and 203.0).

Sami Malak 12/23/76
Herbicide Efficacy Section
Efficacy and Ecological Effects Branch

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FORMULATION: Fatty alcohols (C_6-0.04%, C_8-45.1%, C_{10}-54.5%)-85%*
Flo-Mo 810 Sucker

9538-L

USE	TOLERANCE P.P.M.	RATE		APPLICATION	LIMITATIONS AND REMA
		ACTUAL LBS/ACRE ai	FORMULATION 6.04 lb ai/gal		
Contact control of sucker growth on flue-cured tobacco.				I. One application of Flo-Mo 810 Sucker followed by one application of Maleic hydrazide. ********** Apply Flo-Mo 810 Sucker in 50 gallons of water per acre using power sprayer. Apply at early button until early flower stage at the following rate:	Best results are usually obtained by applying Flo-Mo 810 sucker in the early button stage, then topping within 5 days, removing any suckers that were missed. If tobacco is topped first (early button to early flower stage), remove any suckers that have grown over one inch. Spray within two days after topping. The emulsion must contact the suckers. Any leaning plants should be straightened so the emulsion can flow evenly down the stalk. Application can be made any time during the day until the leaves begin to close in the evening. Best results are obtained when plants are sprayed in the afternoon when plants have recovered from wilt. Some injury to tender leaves at the top of the plant may result from an application under bright sunlight at tempera-
		10.57 lb/A	1.75 gal/A	Flo-Mo 810 sucker. This is followed by any of three formulations of Maleic hydrazide applied 7-10 days later. Apply in 50 gallons per acre using 40-to 50 lbs. boom pressure at the following rates:	
		2.25 lb/A	6.0 pts/A	Uniroyal MH-30 or	
		2.25 lb/A	6.0 pts/A	Riverside DH-30 or	
		2.25 lb/A	1.5 gal/A	Royal MH-30	
				II. Two applications of Flo-Mo 810 Sucker followed by one application of Maleic hydrazide ********** If substantial secondary sucker growth occurs following the first application of Flo-Mo 810 Sucker, apply a second application of Flo-Mo 810 Sucker within 3-5 days after first application at the following rate	
		12.08 lb/A	2.0 gal/A	Flo-Mo 810 Sucker. This is followed by any of the three formulations of Maleic hydrazide at the same rates applied 7 to 10 days later.	

*Growth Regulator-
Sellers Chemical Corp.

USE	TOLERANCE P.P.M.	RATE: ACTUAL LBS/ACRE ai	RATE: FORMULATION 6.04 lb/ai/gal	APPLICATION	LIMITATIONS AND REMA
				Method of Application Add about one fourth of the required amount of water to the spray tank. Then add the required amount of Flo-Mo 810 sucker to the spray tank, using either mechanical or by-pass agitation. Add the rest of the water while continuing to mix. If allowed to stand the diluted emulsion may separate. Always remember to mix well immediately prior to use.	ture above 90°F. Do not apply if winds are high enough to turn top leaves, as injury may result to underside of tobacco leaves. Do not apply during rains or when plants are wet. Do not apply when weather conditions favor run-off or drift from target areas. In order to minimize the possibility of injury to tobacco plants, do not mix Flo-Mo 810 Sucker with other chemicals or apply to plants which have recently been treated by chemicals.