

②

7-27-76

EEE BRANCH REVIEW

DATE: IN 3/23/31 OUT 7/27/76 IN _____ OUT _____
FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 241-FLF

PETITION OR EXP. PERMIT NO. 6F1759/6E5127

DATE DIV. RECEIVED 3/5/76

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

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

PRODUCT MGR. NO. Taylor

PRODUCT NAME(S) Cycocel (Plant Growth Regulant)

COMPANY NAME American Cyanamid

SUBMISSION PURPOSE Registration

CHEMICAL & FORMULATION (2-chloroethyl) trimethylammonium chloride

Chlorocholine Chloride Aqueous71.0%



100.0 PESTICIDAL USE

CYCOCEL 4L is applied to the foliage to hasten ripening and increase sucrose in sugarcane. Apply to sugarcane grown in Hawaii only. Do not apply to any other crops other than sugarcane.

100.1,.2 Application Methods/Directions/Rates

CYCOCEL 4L is a water soluble liquid formulation. To achieve a quick uniform spray mix proceed as follows:

1. Fill tank one-half to three-quarters full with clean water.
2. Add the CYCOCEL 4L to the partially-filled tank while agitating and then fill the remainder of the tank with water.

Do not apply when winds are gusty or under other conditions that will allow drift. For uniform coverage, equipment should be clean and properly calibrate. To avoid streaking or overlapping of spray, use either 2 flagmen, 1 on each end of the field, or some other appropriate marking device.

Do not reuse container.

Sugarcane (Hawaii only) Foliar Application

Apply CYCOCEL 4L at the rate of 1 gallon in 7 to 10 gallons of water per acre 4 to 10 weeks before anticipated harvest. Rainfall within 4 hours after application may reduce effectiveness. Within 2 to 4 weeks after application CYCOCEL 4L may cause slight yellowing or slight tip burn. CYCOCEL 4L may not increase the sucrose content of sugarcane under conditions of good natural ripening.

Do not apply to sugarcane to be harvested for seed purposes.

100.3 Precautions

This product is toxic to wildlife. Keep out of lakes, streams and ponds. Do not contaminate water by disposal of wastes or by cleaning of equipment.

101.0 CHEMICAL & PHYSICAL PROPERTIES

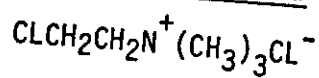
101.1 Chemical Name

(2-Chloroethyl) trimethylammonium chloride

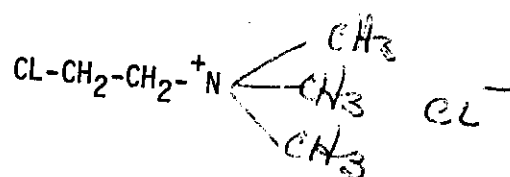
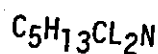
101.2 Trade Name

CYCOCEL

101.3 Structural Formula



101.4 Empirical formula



101.5 Physical state, color, odor

White crystalline solid, typically amine

101.6 Molecular Weight

158.1

101.7 Solubility

Water - soluble: 74% @ 20°C; soluble in lower alcohols such as mentioned; insoluble in ether and hydrocarbons.

101.8 Stability

Aqueous solutions are chemically stable and retain their effectiveness. Crystalline material is very hygroscopic and will cake when stored in polyethylene bags.

102.0 BEHAVIOR IN THE ENVIRONMENT

See previous review by J. Akerman - 1/25/74

103.0 TOXICOLOGICAL PROPERTIES

See previous review by J. Akerman - 1/25/74.

104.0 HAZARD ASSESSMENT

104.1 Discussion

104.1,.1 Adequacy of data

Acceptable

104.1,.2 Additional data required

See 105.0 Conclusions

104.1,.3 Likelihood of exposure to non-target organisms

Approximately 113,000 acres of sugarcane are planted annually in Hawaii. Because of the state's unique geographical location and topography, numerous aquatic as well as terrestrial species will undoubtedly be exposed through the use of this product. However, based upon toxicity data, the only real danger exists to rabbits and domestic dogs and cats. Studies indicate the product is relatively non-toxic to birds and fish. Although fish toxicity data is available, shrimp, crab and oyster data are not. The environmental safety review staff feels this data is necessary prior to any consideration of registration.

105.0/106.0 CONCLUSIONS/RECOMMENDATIONS

- 1) The Environmental Safety review staff objects to the registration for the following reasons.

As per Section III Regulations, certain basic fish and wildlife data are required prior to registration. Data required for this product include:

- a. An acute oral LD₅₀ for either 1 species of wild waterfowl or 1 species of upland game bird.
- b. A 48-hour LC₅₀ for an aquatic invertebrate.

In addition, toxicity data for shrimp, crab and oysters will be required.

- 2) Modify label to read under Environmental HAZARD:

~~"Keep out of lakes, streams and ponds and estuaries.
Do not contaminate water by cleaning equipment or disposal of wastes. Apply this product only as specified on label".~~

*Wait until all basic studies are
Submitted. Ray*

R. W. Felthousen
Environmental Safety
Efficacy and Ecological Effects Branch

7/27/76 *John*