043801

(2)

EEE BRANCH REVIEW

DATE: IN 1/22/76 OUT 1/28/76 IN _____ OUT _____ IN _____ OUT _____

FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. _____

PETITION OR EXP. PERMIT NO. 275-EUP

DATE DIV. RECEIVED January 7, 1976

DATE OF SUBMISSION December 29, 1975

DATE SUBMISSION ACCEPTED _____

TYPE PRODUCT(S): I, D, H, F, N, R, S plant growth regulator - apples

PRODUCT MGR. NO. Libby Zink

PRODUCT NAME(S) ABG-3001

COMPANY NAME Abbott Laboratories

SUBMISSION PURPOSE experimental use permit

CHEMICAL & FORMULATION 6-benzyladenine 0.2% + gibberellins A_4A_7 0.2%

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100.0 Pesticidal Uses

100.1 Apples: 0.5 - 1.0 pints (0.33 - 0.67 lbs. ai) per 100 gal. Apply 100-150 gal/A (0.33 - 1.0 lbs. ai/A) as a uniform mist spray with a properly calibrated and adjusted sprayer. (Maximum of one application per season.)

100.2 Proposed Experimental Program

The program calls for 60 pounds of material for 804 acres. The purpose of the program is to gather efficacy data.

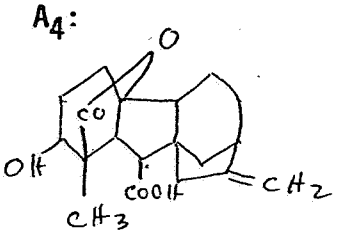
101.0 Chemical and Physical Properties

101.1 Active ingredients:

gibberellins A_4A_7 0.2%
(also known as Abbott Compound X-1928)
N(phenylmethyl)-1H-purin-6-amine 0.2%
(also known as 6-benzyladenine;6-benzylamino-purine;
Shell Compound SD-4901;Abbott Compound A-39313)

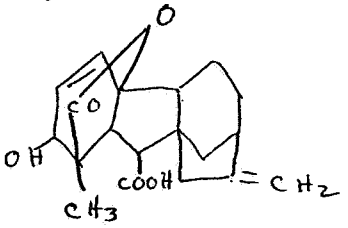
101.2 Gibberellins

102.2.1 A_4:



empirical formula: $C_{19}H_{24}O_5$
molecular weight: 332.19

A_7:



empirical formula: $C_{19}H_{22}O_5$
molecular weight: 330.19

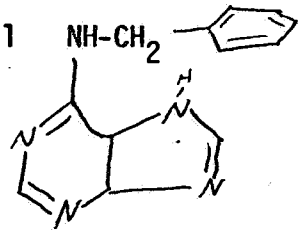
102.2.2 White to off-white granular powder

102.2.3 Solubility at 23°C with stirring within 5 minutes

solvent	mg/ml
distilled water	0.5
methanol	30
ethanol	18
acetone	200
dimethylformamide	200
benzene	<0.5
tolulene	<0.5
pyridine	200

solvent	mg/ml
xylenes	<0.5
dioxane	200

101.3 6-Benzyladenine

101.3.1 

empirical formula: $C_{12}H_{11}N_5$
molecular weight: 225.26

101.3.2 White granular powder

101.3.3 Solubility at 23°C with stirring within 5 minutes

solvent	mg/ml
distilled water	<0.5
methanol	2.5
acetone	1.0
N-methylpyrrolidone	150
dimethylformamide	50
benzene	<0.5
dimethylsulfoxide	100
tolulene	<0.5
pyridine	30
xylenes	<0.5

103.0 Toxicological Properties

103.1 Mammal

mouse acute oral LD_{50} = 1690 mg/kg -- 6-benzyladenine
mouse acute oral LD_{50} > 5000 mg/kg -- gibberellins A_4A_7
mouse acute dermal LD_{50} > 10 ml/mg ---ABG-3001 (product)

103.2 Fish

96 hour static bluegill LC_{50} = 37.87 (24.56 - 54.24)ppm -- 6-benzyladenine
96 hour static bluegill LC_{50} = 20.32 (10.83 - 57.48)ppm -- gibberellic acid A_4A_7
no effect level from above study:

20 ppm - 6-benzyladenine
5 ppm - gibberellic acid A_4A_7

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study title: Report on four-day static fish toxicity studies of 6-benzyladenine and gibberellic acid A_4A_7 in bluegills

date: November 24, 1975

submitted: December 29, 1975 by Abbott Laboratories

testing facility: apparently Abbott Laboratories

103.3 Avian

8-day dietary ringnecked pheasant LC_{50} > 8000 ppm - mixture of equal parts of 6-benzyladenine and gibberellins A_4A_7

8-day dietary mallard duck LC_{50} > 8000 ppm - mixture of equal parts of 6-benzyladenine and gibberellins A_4A_7

study titles: Observations on the toxicity of BA and A_4A_7, and dieldrin in young ringneck pheasants; Observations on the toxicity of BA and A_4A_7, and dieldrin in mallard ducklings

submitted: December 29, 1975 by Abbott Laboratories

date: July 22, 1975 (pheasants)
July 30, 1975 (ducks)

testing facility: AVPD Research Center
(Abbott's lab)

104.0 Hazard Assessment

Numerous songbirds, as well as game birds and mammals, live in or regularly spend time in apple orchards. At the rates of application indicated on the label, the pesticide should not pose any hazard to these non-target organisms.

For final registration, data on rainbow trout and an aquatic invertebrate are required (shrimp, crab and oyster studies have been done and could be referenced).

105.0 Present Environmental Precautions

Keep out of lakes, streams or ponds. Do not contaminate waters by cleaning of equipment or disposal of wastes.

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106.0 Conclusions

We have no adverse comments concerning the permit.

For final registration, acute data on a cold water fish species (rainbow trout) and an aquatic invertebrate are required according to the new Section 3 Regulations and proposed Guidelines.

Jack P. Edmundson, Jr. 1/28/76
Environmental Safety Section
Efficacy and Environmental Effects Branch