

4-6-76

FIELD BRANCH REVIEW

DATE: IN _____ OUT _____ IN _____ OUT _____ IN 11/29/76 OUT 4/6/76
FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 241-243
PETITION OR EXP. PERMIT NO. _____
DATE DIV. RECEIVED 12/23/75
DATE OF SUBMISSION _____
DATE SUBMISSION ACCEPTED _____
TYPE PRODUCT(S): I, D, (H,) F, N, R, S Herbicide
PRODUCT REG. NO. 25
PRODUCT NAME(S) Prowl
COMPANY NAME American Cyanamide
SUBMISSION PURPOSE New use patterns on corn and cotton
CHEMICAL & FORMULATION Penoxalin [N-(iethylpropyl)-3,4-dimethyl-2,6-
dinitrobenzenamine] 43.6% (4 lbs ia/gal)

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200.0 Introduction:

200.1 Uses: See attached sheets.

200.2 Background Information: The American Cyanamide Co. has requested the following changes for the Prowl 4E label:

1. That Black Nightshade and Venice Mallow be added to the weeds controlled in field corn.
2. That Aerial applications be added for all applications of Prowl and Prowl tank mixes except the Prowl/~~Banvel~~ Banvel tank mix on corn.
3. That seven days can elapse between application and incorporation of prowl on preplant applications on cotton.
4. That liquid fertilizers can be used as a carrier for Prowl and Prowl tank mixes.
5. That Prowl/~~Banvel~~^{banvel} (dicamba) be added as a tank mix for weed control in the following states: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, New York, North Dakota, Ohio, Pennsylvania, South Dakota, and Wisconsin.
6. That heavy (fine) textured soils be added for applications on corn for the tank mixes of Prowl/Atrazine and Prowl/Bladex. This was deleted from the label because of insufficient efficacy data.
7. To add the following tank mixes: Prowl + Paraquat, Prowl + Atrazine + Paraquat, and Prowl + Bladex + Paraquat to the Prowl 4E label for preemergence application on field corn grown under minimum or no-tillage systems of cropping.

Prowl 4E was registered on 10/29/75 for use on corn as preemergence applications and on cotton as a preplant incorporated application for the control of germinating weed seed.

- 201.0 Data Summary:
- 201.1.2 Data Summaries: See the attached tables (1) Black nightshade and Venice mallow control, (2) Aerial application, (3) Delay incorporation on cotton, (4) Liquid fertilizer used as a carrier, (5) Prowl/Bomel tank mix, (6) Prowl/Atrazine and Prowl/Bladex tank mixtures on heavy (fine) textured soils, (7) Prowl, Paraquat, Atrazine, and Bladex tank mixture on corn.
- 202.0 Conclusions:
- 202.1 Claims Supported by Data Submitted:
- 202.1.1 Claims for preemergence control of Black nightshade by Prowl/atrazine and Prowl/Bladex mixes and Venice mallow by Prowl alone and in the atrazine and Bladex tank mixes in corn are supported.
- 202.1.2 Claims for use of aerial application of Prowl alone and Prowl two-way mix with atrazine and Bladex on corn and Prowl alone on cotton are supported.
- 202.1.3 Claims for 7 day delay incorporation for preplant applications on cotton are supported (tests which had sequential applications of Cotoran or Karmex which would mask the weed control of Prowl and Prowl tanks mixes were disregarded).
- 202.1.4 The efficacy and crop safety claims for liquid fertilizers as carriers for Prowl and the 2-way tank mixes with atrazine and Bladex are supported.
- 202.1.5 Claims for the use of the tank mix Prowl + ^{37712/1}~~Bomel~~¹ (dicamba) in water as a preemergence application on corn are supported for control of cocklebur only. Other claims must be deleted unless added efficacy data is submitted.
- 202.1.6 Claims for the use of Prowl alone, Prowl + atrazine, and Prowl + Bladex tank mixes on fine textured soils are supported for preemergence application to field corn.
- 202.1.7 Claims for the application of paraquat on emerged weeds followed by preemergence application or Prowl alone, Prowl + atrazine, or Prowl + Bladex tank mixes on no till corn are supported by efficacy and phytotoxicity data.

202.2 Claims Not Supported by Data Submitted

202.2.1 The use of liquid fertilizer as a carrier for the 3 way tank mixes of Prowl + Atrazine (or Bladex) + Paraquat is not supported.

202.2.2 Claims for no mechanical incorporation needed if $1/4$ ^{inch} of rain falls within a seven day period after application is not adequately supported. This statement will have to be deleted from the label or data submitted in which a comparison is made between a plot that is incorporated and one that is not incorporated and either $1/4$ inch of rain fall or irrigation is applied within the 7 day period after application.

202.3 Compatibility data will have to be submitted for the use of liquid fertilizer as a carrier for the Prowl, Prowl + ~~Bomet~~^{Banyal}, Prowl + Paraquat, Prowl + Atrazine + Paraquat, and Paraquat + Bladex + Paraquat. Three way mixes must include surfactant. Insure that effects of various fluid fertilizer types and order of addition to the spray tank are evaluated relative to compatibility, resuspendability and sprayability using maximum rates in minimum volumes of liquid.

202.3.1 Compatibility tests also needed for Prowl + ~~Bomet~~^{Banyal} tank mix in water.

202.3.2 Where both formulations of atrazine and Bladex are recommended in tank mixes with fluid fertilizers compatibility tests must include these alternate formulations as well or delete from the label.

203.0 Label Comments:

203.1 The use of liquid fertilizers as carriers for herbicides usually produce some problems in compatibility. For this reason the label must state a procedure for small scale testing of the various components including amounts and step by step procedures by which the user can test the liquid feritlizer available to him for compatibility. This should be a "jar" technique which the user can easily use and determine the compatibility in a short time.

- 203.1.1 Under the heading of the tank mix "Prowl + ^{Banyal}~~Bladex~~" a statement must be made as to the depth the seed must be covered to avoid injury when this mixture is used as a preemergence application. A caution statement must also be on the label that if this mixture comes in contact with the seed that crop injury may result.
- 203.1.2 Corn Preemergence - on registered label: Since "Most effective" weed control is obtained when rainfall or overhead irrigation follows application, the label must contain the caution, "Application of excessive quantities of irrigation water may remove herbicides from the zone of effectiveness in the soil." Further, clarify this same label statement by changing it to read "Prowl is most effective.....
... received within 7 days after application."
- 203.1.3 "Soil type" must read "soil texture" throughout the label.
- 203.1.4 Label statement must read, "When using ..., mix the preemergence tank mix rates of Prowl plus atrazine (or Bladex)..."
- 203.1.5 Add "DO NOT USE" to rate table to replace dashes for loams and silt loams with 1.5-3% organic matter content.
- 203.1.6 The statement "Paraquat provides knockdown of existing vegetation and Prowl..... provides residual control of germinating annual grasses..... weeds." must be followed by a statement to consult the appropriate portion of the Prowl label list of weeds controlled by residual activity.
- 203.1.7 Cotton preplant incorporated. The statement, "When Prowl is used in cotton can rotate from cotton to other crops." add "the following year".

204.0 Recommendations:

The parts as listed above of this request that are listed as supported are acceptable when the above comments have been resolved. The remainder of the request not acceptable will have to be deleted or efficacy data submitted to support these uses.

William C. LeCroy
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Efficacy Section
EEEB

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9/12/76
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