

COPY

OKok

Date Out EFB:

NOV 20 1981

To: Donald R. Stubbs
Product Manager 41
Registration Division (TS-767)

From: Dr. Willa Garner, Chief III
Review Section No. 1
Environmental Fate Branch
Hazard Evaluation Division (TS-769)

Attached please find the environmental fate review of:

Reg./File No.: 82-FL-07

Chemical: Glyphosate

Type Product: Herbicide

Product Name: Roundup

Company Name: Florida Department of Agriculture

Submission Purpose: Use on emerged aquatic weeds

ZBB Code: Sec. 18

ACTION CODE: 510

Date In: 11/10/81

EFB # 56

Date Completed: 11/20/81

TAIS (level II)

Days

60

2

1.0 INTRODUCTION

In a letter to the EPA Administrator on 10/26/81, Doyle Conner, Commissioner of the Florida Department of Agriculture & Consumer Services requested an emergency exemption pursuant to section 18 of FIFRA for the use of N-phosphonomethyl glycine isopropylamine salt (Roundup®, Glyphosate) on emerged aquatic weeds. Roundup is manufactured by Monsanto Company, and is currently labeled for use in Florida under reg. # 524-308-AA, as well as under EUP # 524-EUP-29.

2.0 STRUCTURE

See previous reviews.

3.0 DIRECTIONS FOR USE (proposed)

(A copy of the proposed label is appended to this review).

Apply three (3) pounds A.I./surface acre (one gallon of formulation per surface acre), over an area estimated to be 50,000 A. An estimated two applications per year will be needed, thus requiring 100,000 gallons of Roundup® (300,000 pounds A.I./year).

Roundup is proposed for use in all types of aquatic sites in all bodies of fresh or brackish water, including but not limited to, lakes, rivers, streams, ponds, ditches, canals, estuaries, and reservoirs. Aquatic sites may contain flowing, non-flowing or transient water. When applied as directed, the product will control the listed perennial weeds growing in water. This product will not control totally submerged plants or plants germinating from seed after application. Repeat treatments may be necessary and will be required for such weeds as torpedograss and paragrass growing in an amphibious state.

Roundup® may be applied with a boom or handgun from a boat or from the ditchbank with terrestrial positioned spray equipment. Exercise caution to avoid drift and passover of treated area with boats. Roundup® may be aerially applied to all approved aquatic sites at the proper rates with a boom at 10 to 20 gallons of clean water per acre. Do not apply Roundup® when winds are gusty or in excess of 5 mph or under any conditions which would allow for drift. (Do not apply within 200 feet of annual crops and within 40 feet of perennial woody crops or residential areas). Do not apply within 200 feet of residential or cropping areas with fixed wing aircraft. Avoid drift by applying from low height to ensure minimum exposure to air currents and prop wash.

When applying Roundup® along shorelines, or banks of moving water, always spray one band while travelling upstream to prevent concentration in the water. Do not spray open bodies of water not infested with weeds, or overlap weed area by more than one foot or spray across streams or ditches to opposite ditchbank. Avoid

applying Roundup® when environmental conditions exist which are conducive to oxygen depletion from decaying vegetation, since oxygen depletion may result in a fish kill. When emerged weeds cover a majority of the water surface, treat the area in strips 30 days apart to avoid oxygen depletion from decaying vegetation. Apply 4-5 quarts of Roundup® in 10 to 100 gallons of clean water per acre to actively growing weeds in the bloom stage. Ensure that thorough spray coverage of all targeted vegetation is provided. Do not use brackish water as reduced activity will result.

Roundup® can be used to effectively control the following weeds: Maidencane, Torpedograss, Knotgrass, Paragrass, Guineagrass, Giant reed-Common reed, Giant Ograss, Southern Wild Rice, Water Millet, Spatterdock, Yellow Cow Lily, Yellow Pond Lily and Cattail.

The use and application of these herbicides shall be limited to only those persons that have a valid certifications in "aquatics" by the Florida Department of Agriculture and Consumer Services.

4.0 ECONOMIC JUSTIFICATION

The need to maintain weed-free waterways in this tropical and sub-tropical climate is well established. Advantages include encouragement of growth of native as opposed to exotic plant species, availability of water resources for recreational activities, aesthetics, public health and flood control. The recent amendments in the registrations of Dalapon and Diuron for aquatic use have imposed the urgent need for the use of alternative, effective weed-control agents in Florida.

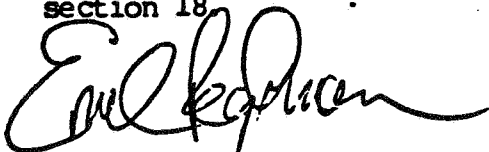
5.0 DISCUSSION

The Agency is currently reviewing studies in support of a proposed tolerance of 0.5 ppm glyphosate in water. It is my understanding (personal communication with R. Perfetti, RCB on 11/19/81) that only one study in support of the proposed tolerance is outstanding at this time. It appears likely that the proposed tolerance will be granted within the next 12 months.

The economic justifications and proposed labeling are reasonable and acceptable.

6.0 RECOMMENDATION

We concur with the granting of this emergency exemption under FIFRA section 18.



Emil Regelman
Chemist
EFB/HED

PROPOSED ROUNDUP LABEL

FOR

EMERGENCY EXEMPTION

DIRECTION FOR AQUATIC USES

This product is labeled for use in all types of aquatic sites in all bodies of fresh water. This includes, but is not limited to, lakes, rivers, streams, ponds, ditches, canals and reservoirs. These aquatic sites may contain flowing or non-flowing water.

When applied as directed, the product will control emerged weeds growing in water. This product will not control submerged plants or plants germinating from seed after application. Repeat treatments may be necessary and will be required for such weeds as torpedograss and paragrass growing in an amphibious state.

EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF SPRAY WITH FOLIAGE, GREEN STEMS OR FRUIT OF DESIRABLE VEGETATION SINCE SEVERE DAMAGE MAY RESULT.

THE USE AND APPLICATION OF THIS HERBICIDE IS RESTRICTED TO ONLY THOSE PERSONS THAT HAVE A VALID CERTIFICATION IN "AQUATICS" BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.

CONTROL OF AQUATIC WEEDS

Apply 4 to 5 quarts of this product in 10 to 100 gallons of clean water per acre to actively growing weeds in the bloom stage. Ensure that thorough spray coverage of all targeted vegetation is provided. Do not use brackish water as reduced activity will result.

Maidencane
Panicum hemitomon

Torpedograss*
Panicum repens

Guineagrass
Panicum maximum

Phragmites, Giant Reed
Phragmites communis

Knotgrass

Paragrass
Brachiaria mutica

Giant Cutgrass
Zizania miliacea

Spatterdock
Nuphar luteum

Cattails
Typha spp.

Cattails/Spatterrock - Apply 4 quarts of this product per acre or use a 1 to 1-1/4 percent solution with hand-held equipment providing thorough coverage. Apply when most of the plants are in bloom. For best results, apply during the summer or fall months. Avoid washoff of sprayed foliage by sprayboat or backwash or rainfall within six hours after application.

Paragrass, or Maidencane, or Knotgrass, or Giant Cutgrass - Apply 4 quarts of this product per acre or use a 1 percent solution, thoroughly covering all weed foliage with hand-held equipment. Repeat treatments may be required, especially to vegetation partially submerged in water. Under these conditions allow for substantial regrowth to the seven to ten leaf stage prior to retreatment.

Phragmites or Giant Reed - Apply 4 quarts of this product per acre or use a 1.5 percent solution with hand-held equipment when this weed is in bloom or during the fall months. Repeat treatments may be required due to the dense growth of this species preventing thorough spray coverage. Allow for the proper regrowth prior to retreatment.

Torpedograss - Apply 4 quarts per acre under terrestrial conditions and 5 quarts per acre under partially submerged or a floating mat condition for partial control. Apply only to actively growing plants at or beyond the seedhead stage of growth. Repeat treatments will be required to maintain control. Fall treatments must be applied before frost.

Guineagrass - Apply 3 quarts of this product per acre or use a 1 percent solution with hand-held equipment. Apply to actively growing guineagrass when most has reached at least the 7-leaf stage of growth. Ensure thorough coverage when using hand-held equipment.

METHOD OF APPLICATION

This product may be applied with a boom or handgun from a boat or from the ditchbank with terrestrial positioned spray equipment. Caution must be exercised to avoid drift and passover of treated area with boats.

This product may be aerielly applied to all approved aquatic sites at the proper rates with a boom at 10 to 20 gallons of clean water per acre. Do not apply when winds are gusty or in excess of 10 mph or under any conditions which would allow for drift. Do not apply within 200 feet of annual crops and within 200 feet of residential areas. Avoid drift by applying from a low height to ensure minimum exposure to air currents and prop wash.

When applying this product along shorelines or banks of moving water, always spray one bank at a time while travelling upstream to prevent product concentration in the water. Do not spray open bodies of water not infested with weeds or spray across streams or ditches to opposite ditchbank. Avoid applying this product when environmental conditions exist which are conducive to oxygen depletion from decaying vegetation. Oxygen depletion may result in fish kill. When emerged weeds cover a majority of the water surface, treat the area in strips 30 days apart to avoid oxygen depletion from decaying vegetation.

Allow 7 or more days after treatment to weeds in the hydro-soil after a drawdown prior to introduction of water. Apply this product within 1 day after drawdown to ensure application to viable plant tissue.

TIMING OF WATER USE AFTER APPLICATION

There is not restriction on water use after application providing applications are made one mile or more from domestic water intake points.

Consult local State Agencies for permits which may be required prior to application of this product to aquatic sites.

INTERNATIONAL RESIDUE LIMIT STATUS

CHEMICAL SYNONYMS: N-(phosphonomethyl)glycine

CCPR NO. ---

Codex Status ---

☒ No Codex Proposal Step 6 or above

Residue (if Step 9): ---

NONE

Crop(s) Limit (ppm/kg)

NONE

CANADIAN LIMIT

Residue: ---

N-(phosphonomethyl)glycine

Crop Limit (ppm)

forage legumes 0.1 ppm
forage grasses 0.1 ppm

(negligible residues)

PETITION NO. DF2427 (R. Peretti)

Proposed U.S. Tolerances

N-(phosphonomethyl)glycine and
aminomethylphosphonic acid

Residue: ---

Crop(s) Tol. (ppm)

forage legumes 0.4
forage grasses 0.2

MEXICAN TOLERANCE

Residue: ---

NONE

Crop Tolerance (ppm)

NONE

Notes:

File List Worksheet 2/6/91

ACCEPTABLE DAILY INTAKE DATA

DATE	TIME	LOCATION	WIND	WAVE	SEA	WAVE PERIOD	WAVE DIRECTION	WAVE HEIGHT	WAVE PERIOD	WAVE DIRECTION	WAVE HEIGHT
10/10/77	10:00	100	0.500	1.000	0.500	1.000	0.500	1.000	0.500	1.000	0.500

... ..

Sample	Conc. (g/l)	Factor	mg/l (5g)
Control (1)	0.00	0.15	0.01350
10% (2)	1.00	13.00	1.00000
20% (3)	2.00	0.02	0.00002
30% (4)	3.00	3.1	0.01170
40% (5)	4.00	0.75	0.00300
50% (6)	5.00	0.7	0.00350
60% (7)	6.00	0.7	0.00420
70% (8)	7.00	0.7	0.00490
80% (9)	8.00	0.7	0.00560
90% (10)	9.00	11.1	0.01000
100% (11)	10.00	2.00	0.01000
110% (12)	11.00	0.00	0.00000
120% (13)	12.00	0.00	0.00000
130% (14)	13.00	0.00	0.00000
140% (15)	14.00	0.00	0.00000
150% (16)	15.00	0.00	0.00000
160% (17)	16.00	0.00	0.00000
170% (18)	17.00	0.00	0.00000
180% (19)	18.00	0.00	0.00000
190% (20)	19.00	0.00	0.00000
200% (21)	20.00	0.00	0.00000
210% (22)	21.00	0.00	0.00000
220% (23)	22.00	0.00	0.00000
230% (24)	23.00	0.00	0.00000
240% (25)	24.00	0.00	0.00000
250% (26)	25.00	0.00	0.00000
260% (27)	26.00	0.00	0.00000
270% (28)	27.00	0.00	0.00000
280% (29)	28.00	0.00	0.00000
290% (30)	29.00	0.00	0.00000
300% (31)	30.00	0.00	0.00000
310% (32)	31.00	0.00	0.00000
320% (33)	32.00	0.00	0.00000
330% (34)	33.00	0.00	0.00000
340% (35)	34.00	0.00	0.00000
350% (36)	35.00	0.00	0.00000
360% (37)	36.00	0.00	0.00000
370% (38)	37.00	0.00	0.00000
380% (39)	38.00	0.00	0.00000
390% (40)	39.00	0.00	0.00000
400% (41)	40.00	0.00	0.00000
410% (42)	41.00	0.00	0.00000
420% (43)	42.00	0.00	0.00000
430% (44)	43.00	0.00	0.00000
440% (45)	44.00	0.00	0.00000
450% (46)	45.00	0.00	0.00000
460% (47)	46.00	0.00	0.00000
470% (48)	47.00	0.00	0.00000
480% (49)	48.00	0.00	0.00000
490% (50)	49.00	0.00	0.00000
500% (51)	50.00	0.00	0.00000
510% (52)	51.00	0.00	0.00000
520% (53)	52.00	0.00	0.00000
530% (54)	53.00	0.00	0.00000
540% (55)	54.00	0.00	0.00000
550% (56)	55.00	0.00	0.00000
560% (57)	56.00	0.00	0.00000
570% (58)	57.00	0.00	0.00000
580% (59)	58.00	0.00	0.00000
590% (60)	59.00	0.00	0.00000
600% (61)	60.00	0.00	0.00000
610% (62)	61.00	0.00	0.00000
620% (63)	62.00	0.00	0.00000
630% (64)	63.00	0.00	0.00000
640% (65)	64.00	0.00	0.00000
650% (66)	65.00	0.00	0.00000
660% (67)	66.00	0.00	0.00000
670% (68)	67.00	0.00	0.00000
680% (69)	68.00	0.00	0.00000
690% (70)	69.00	0.00	0.00000
700% (71)	70.00	0.00	0.00000
710% (72)	71.00	0.00	0.00000
720% (73)	72.00	0.00	0.00000
730% (74)	73.00	0.00	0.00000
740% (75)	74.00	0.00	0.00000
750% (76)	75.00	0.00	0.00000
760% (77)	76.00	0.00	0.00000
770% (78)	77.00	0.00	0.00000
780% (79)	78.00	0.00	0.00000
790% (80)	79.00	0.00	0.00000
800% (81)	80.00	0.00	0.00000
810% (82)	81.00	0.00	0.00000
820% (83)	82.00	0.00	0.00000
830% (84)	83.00	0.00	0.00000
840% (85)	84.00	0.00	0.00000
850% (86)	85.00	0.00	0.00000
860% (87)	86.00	0.00	0.00000
870% (88)	87.00	0.00	0.00000
880% (89)	88.00	0.00	0.00000
890% (90)	89.00	0.00	0.00000
900% (91)	90.00	0.00	0.00000
910% (92)	91.00	0.00	0.00000
920% (93)	92.00	0.00	0.00000
930% (94)	93.00	0.00	0.00000
940% (95)	94.00	0.00	0.00000
950% (96)	95.00	0.00	0.00000
960% (97)	96.00	0.00	0.00000
970% (98)	97.00	0.00	0.00000
980% (99)	98.00	0.00	0.00000
990% (100)	99.00	0.00	0.00000
1000% (101)	100.00	0.00	0.00000

1F2455 1E2490

	1943	1944	1945
1. Sugar, cane (100)	1.000	3.00	0.19360
2. Sugar, beet (100)	12.000	0.00	0.00000
3. Corn (100)	0.100	0.00	0.00120
4. Wheat (100)	0.100	0.00	0.00120
5. Soybeans (100)	0.100	0.00	0.00120
6. Cotton (100)	0.100	0.00	0.00120
7. Rice (100)	0.100	0.00	0.00120
8. Tobacco (100)	0.100	0.00	0.00120
9. Petroleum (100)	0.100	133.00	0.23000
10. Coal (100)	0.100	0.00	0.00120
11. Iron (100)	0.100	0.00	0.00120
12. Steel (100)	0.100	0.00	0.00120
13. Copper (100)	0.100	0.00	0.00120
14. Aluminum (100)	0.100	0.00	0.00120
15. Zinc (100)	0.100	0.00	0.00120
16. Lead (100)	0.100	0.00	0.00120
17. Nickel (100)	0.100	0.00	0.00120
18. Manganese (100)	0.100	0.00	0.00120
19. Potash (100)	0.100	0.00	0.00120
20. Soda ash (100)	0.100	0.00	0.00120

Current Action 12/1/79

	tolerance	food factor	mg/day (1.5kg)
Kidney (203)	0.400	0.03	0.00018
Liver (211)	0.400	0.03	0.00018

III	THC	% ADI
3.0000 mg/day (6.0kg)	0.5923 mg/day (1.5kg)	19.74
