101231

(9)

ECOLOGICAL EFFECTS BRANCH

REVIEW

DATE: IN 6/28/79 OUT 7/12/79

FILE OR REG. NO. Section 18/Monitor: Celery/Florida

PETITION OR EXP. PERMIT NO. IR-4, 6E1794

DATE DIV. RECEIVED N/A

DATE OF SUBMISSION 8/14/78

DATE SUBMISSION ACCEPTED N/A

TYPE PRODUCTS(S): I, D, H, F, N, R, S Insecticide

DATA ACCESSION NO(S). H. Jamerson

PRODUCT MGR. NO. Monitor 4 spray

PRODUCT NAME(S) Chevron Chemical Company

COMPANY NAME

SUBMISSION PURPOSE Section 18 for use of Monitor in celery (Florida onl

CHEMICAL & FORMULATION O,S-dimethyl phosphoramido thioate --
(contains 4.0 lbs active/gallon at 68°F)

Product Name: Monitor 4

100.0 Pesticide Use

Celery (Florida): For control of Dipterous leaf miners apply 1 to 2 pts (0.5 to 1.0 lb. active) per acre Apply as needed. Up to 5 applications may be made at 7-day intervals. Do not apply within 21 days of harvest

100.2 Proposed Section 18

100.2.1 Target Pest:

Vegetable leafminer, Liriomyza sativae

100.2.3 Period of Control Needed:

May 1979 through June 1980.

100.2.3. Area of Place of Application

Area	County	Acreage
Sanford, Oviedo	Seminole	2500 acres
Zellwood	Orange	
Sarasota	Sarasota	
Belle Glade, Pahokee, South Bay	Palm Beach	8500 acres
	TOTAL	11,000 acres

100.2.4. Method of Application

Both ground and air.

Note: This is a renewal of a Section 18 granted by OPP (but not EEB) 1/24/79.

103.0 Toxicological Properties

103.3 Additional Terrestrial Laboratory Test

103.3.1 Avian Reproduction Studies

Species	Results
Bobwhite quail	technical monitor (73% ai) caused impairment at 5 and 15 ppm.
Bobwhite quail	technical monitor (73% ai) had no effect on reproductiv at 1 and 3 ppm
Mallard duck	technical monitor (73% ai) caused no effect on reproduct success.

104.0 Hazard Assessment

See previous review by N. Cook 9/7/79.

104.2 Likelihood of Adverse Effects to Non-target organisms.

See previous review by N. Cook 9/7/78.
In light of the recently received avian reproduction studies demonstrating an effect level of 5 ppm for bobwhite quail the discussion on residues from N. Cook's review is included.

The proposed use provides for the following maximum expected residues, developed as per the articles of Hoerger and Kenaga (1972) and Kenaga (1973).

Vegetation Type/ Insect/Soil Surface	Residues From 1 lb. A.I./A
Sparse foliage (short grasses)	240 ppm
Long grasses	110 ppm
Leafy situations	125 ppm
Dense foliage/small insects	58 ppm
Pods/seeds/large insects	10-12 ppm
Fruits	7 ppm
Soil (0.1 inch)	22 ppm

For those organisms consuming leafy materials it is assumed that on the average 58 to 110 ppm Monitor is likely on feed items. For species consuming insects, seeds, and pods, it is assumed that the range of maximum residues is 10 to 58 ppm: seeds (10 ppm), pods (12 ppm) and small insects (58 ppm). On the average, however, 10 ppm or less is likely on seed/pod feed items and 32 ppm is likely on various insects species. This latter value (32 ppm) is derived from articles by McEwen, Lowell C. (1972) and Davis, B.N.K. (1969). [1] Note, also, that all residue values discussed above concern residues likely after one application of Monitor. Relative to repeated applications, a "build-up" of pesticide in/on feed items may occur but this increase should be minimal (see Figur 1, attached). For example, five applications of Monitor at 1.0 # a.i./A every 7 days should provide for an increase in residue from 10 ppm to 13.5 ppm on seeds (based upon ½-life in plants of approximately 3.5 days and an initial expected residue of 10 ppm).

In the event the application interval is extended to 14 days, the average residues on seeds for the two week period is 4 ppm. Similarly, looking at "dense foliage/small insect residue levels" - after a 31 day interval following a 1.0 lb/A or 0.5 lb application the average residues would be $\simeq$ 13 ppm or 6.5 ppm respectively. Consequently the Ecological Effects Branc anticipates that although an intermittant spraying of monitor is more likely than the requested 5 applications with a 7 day interval, birds will be exposed to average residues likely to cause reproductive impairment during a significant part of crop's treatment period.

107 Conclusions

107.7 Recommendations

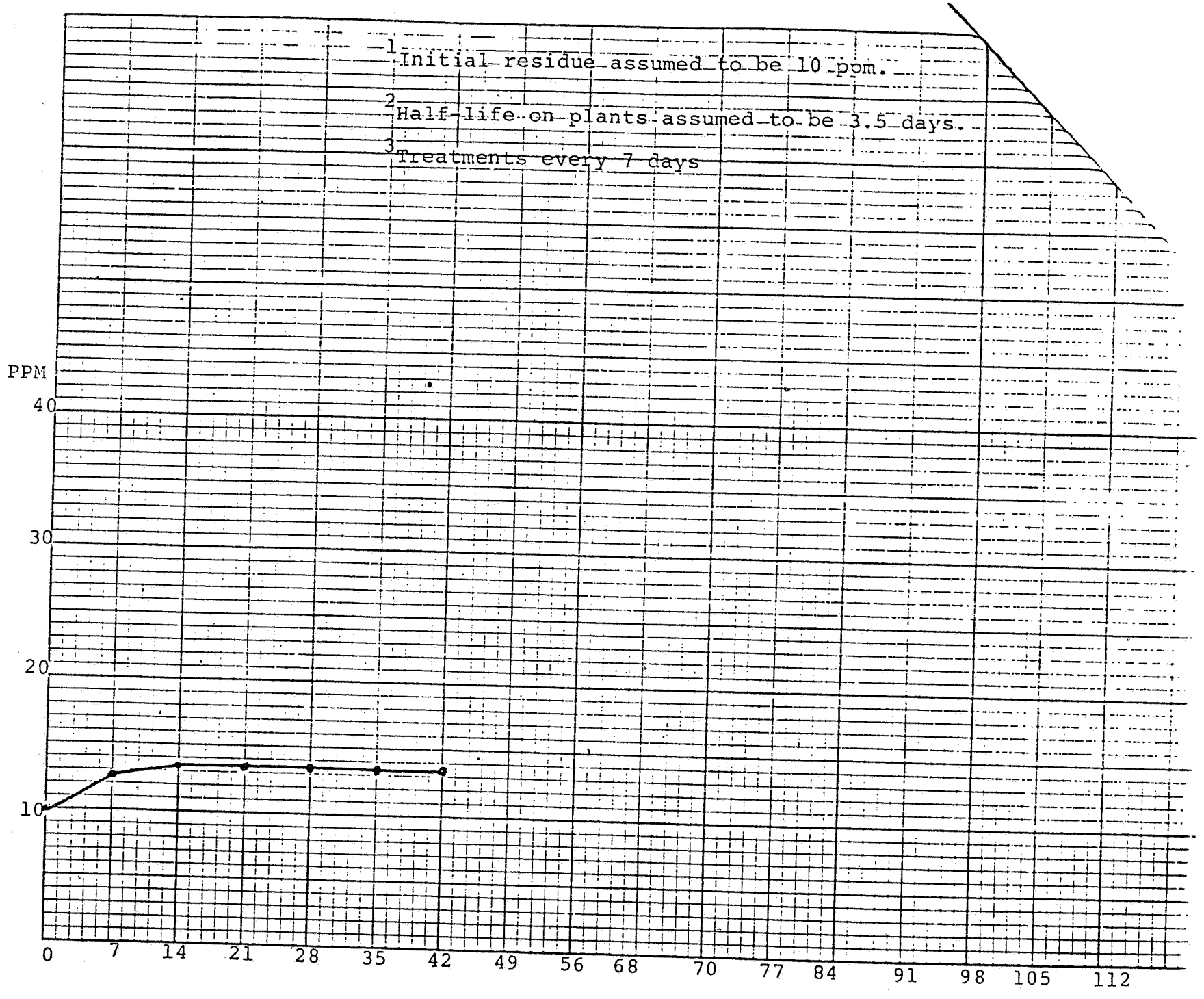
The Ecological Effects Branch recommends against the renewal of monitor for use in celery in Florida. A very limited "field study" conducted by a grower for four days was submitted and reported to show no acute effects to birds; however, residues of Monitor are anticipated to be present at levels in excess of those causing reproduction impairment in bobwhite quail.

Henry T. Craven
Aquatic Biologist
Ecological Effects Branch

7/12/79

N.J. Cook
Section Head #2
Ecological Effects Branch

Clayton Bushong
Chief
Ecological Effects Branch


1 Initial residue assumed to be 10 ppm.
2 Half-life on plants assumed to be 3.5 days.
3 Treatments every 7 days
PPM
40
30
20
10
0
7
14
21
28
35
42
49
56
68
70
77
84
91
98
105
112

A. DUDA & SONS, INC. GROWERS & RANCHERS
P. O. BOX 208, BELLE GLADE, FLORIDA 33430, TELEPHONE (305) 996-762

May 30, 1979

Mr. George Talbot
Florida Celery Exchange
4401 East Colonial Drive
Orlando, Florida 32802

Dear George:

In agreement with the conditions outlined for the Section Eightteen (18) on Monitor on celery, I made the enclosed bird survey. The count is based on a feeding bird count not a record of the resident bird population. Although there was a reduction in the number of tree swallows, night hawks, and boattailed grackles, this should be expected due to their ravenous appetite. As the Monitor reduced the insect population, these species moved into nearby fields with higher insect populations. Two (2) factors convince me that Monitor does not affect birds: (1) no dead or dying birds were observed while walking the fields after application and (2) by an increase in the number of species present the total number of birds increased after the application from sixty-five (65) to seventy (70) birds.

The following schedule was followed:

(1) Five (5) minute stops for counts at each end of five (5) blocks of celery were made just prior to application (7:00 - 8:30 A.M.).

(2) The celery was sprayed at 8:45 A.M. on 4/27/79 with one (1) quart of Monitor per acre.

(3) Another count was made on 4/30/79.

I hope you find this information useful.

Sincerely,

Larry E. Beasley
Crop Research Superintendent

LEB/deb 5/30/79

Enclosure

	Before:						After:					
	BJ2E	BJ3W	BJ3E	BJ4W	BJ4E	Total	BJ2E	BJ3W	BJ3E	BJ4W	BJ4E	
Tree Swallows	20	13	7	6	11	57	17	12	15	4	5	5
Night Hawks			2			2						
Boattailed Grackles					6	6					2	
Killdeers							1					
Blacknecked Stilts							2				4	
Ground Doves									1			
Black Ducks										2	2	
Redwinged Blackbirds											3	
Total						65						

LEB/deb 5/8/79