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## FINAL REPORT Field Trials of Ag Covers to Reduce Cranberry Fruitworm Damage

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Our goal is to reduce fruit damage from cranberry fruitworm. This years effort employed the use of agricultural covers as a means of accomplishing this.

Our cooperators were:

- |                   |                                                                                                                                                                                                                                                                                 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr. Don Mairs     | - Pest Management Specialist, Maine Dept. of Ag<br>Dons enthusiasm and sensibility has always<br>been a source of encouragement to us and his<br>demand of scientific method has continued to<br>keep our efforts honest. Consultations with<br>him have been invaluable to us. |
| Charles Armstrong | Americore IPM Specialist <sup>†</sup> . Cranberry entomologis<br>Charles made a dozen or more field visits to<br>our bog this year and monitored populations<br>and damage through the entire CFW cycle.                                                                        |
| James LaSelle     | Vice chair Maine cranberry Committee, grower<br>His suggestions and advice this year were well<br>recieved and reality based.                                                                                                                                                   |

In an attempt to limit CFW damage, three covers were trialed;

- 1) 30x100 17oz. agricultural fleece put on each night and removed each morning through the nocturnal egg laying cycle
- 2) 5x100 fixed clear vented plastic row cover
- 3) 5x100 fixed spunbonded ag fleece 10oz.

both 2 and 3 were put down over #9 wire hoops and held down w/rebar.

In reverse order, the reason we tried the fixed ag cover was to see if the micro-populations of insects were adequate to insure pollination as well as protect from CFW. This was not the case. Percentage of Loss (POL) was low (0%), but fruit set was also low (based on # of row inches needed to harvest the 50 sample berries). There was also an increase in fruit rot due to increases in humidity.

We had better success with the vented row cover. As last year, pollination was adequate and POL to CFW was also low (0%). The crop was however late to develop we think because of increased weed pressure due to the cumbersome nature of the system itself. Although they seemed to do the job, they proved impractical.

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What we're leading up to is that the movable cover proved to be a real success. It outshined the other efforts. Fruit loss to CFW was again low(0%). Because it was off - bog during the day, maintenance was not impeded and fruit rot was non-existent. Keep in mind that the covers are not used during the final month of ripening. This is our clear choice.

Economics is, however, a sticky issue. It is in fact, the only issue that needs considering. Although the movable fabrics are exceptionally efficient at reducing or eliminating CFW damage, the cost of the covers themselves and the labor to apply and remove them is a limiting factor. Consider the following example;

Let's assume an average harvest of 120 barrels or 12,000 lbs. In my case the large was used on 3000 sq.ft. or .07acre. In organic production @ \$4.00/lb. the harvest covered would be worth

$12,000\text{lb}/\text{A} \times .07\text{A} \times \$4.00/\text{lb}$  or \$3360. If the loss from CFW were 22% the crop saved would be worth  $\$3360 \times 22\%$  or \$739. The cover for this size cost approximately \$200 plus the time and labor to apply and remove it. So you can see that there is a cut-off based on bog yield and also % of loss on the individual site. Keep in mind that the cost of covers and labor per sq.ft. of cover should diminish as sizes increase. One might also determine which areas of the bog are setting the most promising fruit and focus one's effort in those areas. Remember that there is a cut-off below which effort is not economically feasible.

New Ideas. We paid help to apply and remove the cover for eight weeks. If we can monitor the egg laying more accurately, we could probably cut the cost by as much as three weeks. A balance could again be drawn between damage vs weeks of coverage for a finer tuned effort.

We will absolutely continue to use this practice. Before we make a serious investment in this, our yields will have to warrant the expense.

I will tell other growers exactly as I stated above. And a copy of the report will be available to them.

Outreach; Full copies of this report to

- a) all collaborators
- b) Maine Cranberry Growers Assoc.
- c) Massachusetts Cranberry Experiment Station
- d) Maine Organic Farmers and Growers.

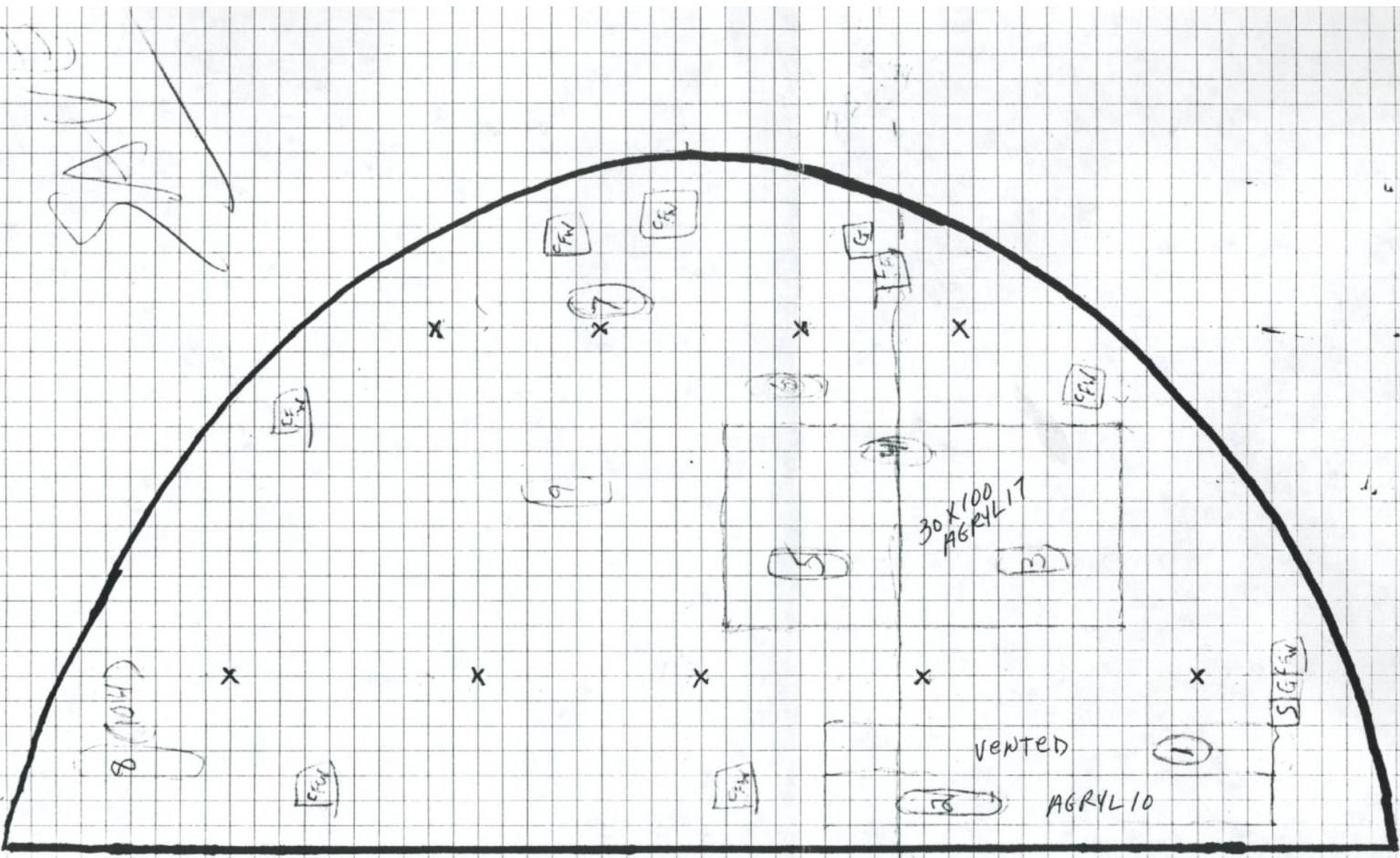
In previous years on request, I have sent articles to MCGA and Mass Exp.St and was a recent speaker at MOFGA's Farmer to Farmer Conference. Happy to continue.

# Berry Sampling

9/10/97 - 9/16/97

Sample	good berries	CFW damage	%	other damage	%	total damage	total %
Retarded ripening 1 50 WENTED COVER	50		0		0	0	0
Retarded ripening 2 AGRY 120 53 ✓	50		0	111	5.6	3	5.6
3 ✓ 52	49		0	111 3	1.057	3	1.057
4 ✓ 51	52		0	111 3	0.55	3	0.55
5 ✓ 53	50	11 2	3.7	1	1.9	3	5.6
6 52	51			1	1.9	1	1.9
7 54	40	 9	16.7	 5	9.3	14	26.0
8 104	52	      39	39.5	 12	11.5	51	49.0
9 57	40	 13	22.8	 4	7.0	17	29.0





- ① = 33"
- ② = 209"
- ③ = 35"
- ④ = 55"

- ⑤ = 47"
- ⑥ = 33"
- ⑦ = 14"
- ⑧ = 57"

⑨ = 11"



Phoremonia traps  
 S = Spalangia  
 G = Galleria  
 CTW = C. tritarsis  
 W = W. m.