Washington State University • Long Beach
Cooperative Extension
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CRANBERRY VINE

December 1998

MEETINGS

Winter Workshop. Kevin Talbot has put together a great program for the winter workshop, which will be held in the South Bend Community Center on January 27. Coffee at 8:00; program at 8:30 a.m. This is a must attend workshop with lots of new information.

Wetland Regulations Meeting. December 15, 3:00, Ocean Spray Receiving Plant, Long Beach. Yes, they have done it again. An informative meeting with the Army Corps of Engineers and Department of Ecology (see comments within on wetlands).

BOG MANAGEMENT

Poor Crop and a lot of small fruit? Although not a banner year, this season was adequate for at least some growers. Other growers, however, faired poorly. There are several speculations as to why consistently high performing McFarlin's and Stevens' beds would do poorly this year. Some growers feel that yield was down because they made a prebloom Orthene application which repelled bees. There is no convincing data to suggest that Orthene has this effect or that beds with or without prebloom Orthene had markedly different yields.

Another idea is that set was poor due to inclement weather during bloom. Although not ideal, this would not explain why adjacent beds would have such disparate yields, as weather would have been the same. Another theory is nutrient related–not enough nitrogen or potassium at the right time to help set. This is hard to prove or disprove, but if you feel this is possible, leave a check for next year and take data. Lastly, some suggest frost damage as being the cause. It is hard to imagine how this can occur on a large scale with all the safeguards in place. Frost damage, however, can be very subtle and can result in more than just the characteristic umbrella bloom effect. For example, damage to only the nectary organs would diminish attractiveness of bees to the flowers. Sprinkler systems set at 15 minute on/off cycles could be inadequate for protection when there is a high wind. Growers may have turned off their systems too early, prior to ice melting, and thus encouraged damage (melting ice can draw heat from a bud) or sensors may have been placed under a shield which can drastically change the reading of the sensor compared to the temperature near the bud. I have measured 2-5° difference between a bare sensor lying at tip level and a protected sensor 12" above the buds. There also can be as much as several hours in lag time between the protected sensor and exposed sensor. This time differential in reaching the critical temperature could result in the bud being exposed to damaging cold. Setting sensors to 40° to compensate for this effect does not always work. Frost on a bed is a very dynamic event and, therefore, it is best to have the sensor mimic bud exposure as closely as possible.

Regardless of the cause, it is important to learn what happened so that it doesn't happen again. Attention to detail, leaving a check, taking annual data on fruit set and return bloom, and other field notes, are critical to moving forward.

Blackheaded Fireworm. Preliminary results and analysis of small plots and commercial trials demonstrated that new insecticides can suppress blackheaded fireworm (BHFW). Two new products demonstrated the ability to persist for several weeks during both generations, but the period of efficacy was extended in the second generation trials by applying pesticides after most BHFW eggs had been laid and were beginning to hatch. Cranberry foliar development had also substantially slowed. In short, timing and application technique may be less important than previously assumed. Section 18's are planned for both products.

MISCELLANEOUS

The PCCRF. The Foundation has been going strong for five years and has been critical to continued viability of the industry. Annual dues are vital for its continued operation. Often the benefit of the Foundation is subtle and long-term and not clearly visible. A few examples, to illustrate: 1) as a non-profit foundation (NPF), the Foundation has been critical in obtaining grants for cranberry research from agencies such as the EPA and the Washington State Pesticide Registration Commission, 2) it provides sites for testing non-registered pesticides and variety trials, 3) allows for demonstration projects such as the bumble bee resource plant garden, 4) presents proactive education to lay people regarding the value and importance of cranberries, and 5) provides a meeting place for extension education. Could all of this be done without the Foundation? Perhaps some of it could be, but not enough to have a real impact.

What are the direct benefits of the PCCRF? Section 18's have been obtained for Stinger in Oregon and Washington in 1996, 1997, 1998 and 1999 (submitted); Confirm in 1998 and 1999 (being submitted) and possibly one other insecticide or fungicide in 1999. Research is being conducted that will provide the transition from FQPA cancellation of organophosphates to newer reduced-risk insecticides and, hopefully, registration of new fungicides and herbicides in the years to come. In other words, without the Foundation new pesticide registration for cranberry in the Pacific Northwest would be unlikely.

Wetlands. As John Donne said, "never send for whom the bell tolls; it tolls for thee." Unfortunately the wetland bell has tolled for the cranberry industry in Washington. Regulatory agencies seem bent on putting nails in the coffin of any industry expansion in order to follow their legal mandate of protecting wetlands and clean water. The Army Corps of Engineers, The Washington Department of Ecology, Washington Department of Fish and Wildlife, US Fish and Wildlife, and the EPA have just put out a special public notice on cranberries stating the full ramification of their regulatory concerns. If you have not received a copy, call Gail Terzi at 206-764-6903. I have attached a few highlights. In essence, the requirements for mitigation have gone through the roof and will add significant cost to any new plantings (many thousands of dollars). Furthermore, the cost (time and money) for violation of permits has become more punitive. If you are planting new cranberry beds in Washington, you will likely need a permit, even if you don't think it is a wetland. Always contact the Army Corps of Engineers before any new planting to be on the safe side.

A mitigation rate of 1:1 or greater for just planting cranberries in wetlands means growers must create, preserve, or enhance an equal or greater amount of land than the area you are planting. We are working on numerous creative mitigation options that perhaps could be used for partial mitigation credits. These include BMP or IPM credits, plantings of native plants that help restore habitat, involvement in research, projects that benefit wetlands or threatened and endangered species, and several others–all practices that serve the ultimate goal of benefitting the ecosystem. If you cannot meet all the mitigation requirements, these may help. Call me if you need more information or suggestions.

What does all this mean to the industry? First of all, from the agencies' perspective come and find out. There is an informational meeting scheduled for December 15 at 3:00 at the Ocean Spray Receiving Plant in Long Beach to discuss the Special Public Notice. Second, it is now economically unfeasible to expand. Third, we will have to become more competitive to accommodate for the increased cost of expansion. Fourth, growers will have to closely follow the requirements for wetland permits. Fifth, there must be alternatives to planting in wetland sites, use of wooden dikes rather than soil-based dikes, and renovation rather than new plantings of unproductive beds. Sixth, growers must become more involved at the policy-making level.

Is all this fair? No! The overall value placed on wetlands is well beyond parity. Wetlands have become a sacred cow. Until changes in state and federal policy are made, however, we will have to live with it.

New Pesticides - Why does it take so long? Hope for many of the woes of the cranberry industry is based on new pesticide chemistry. Many of these have a very safe environmental toxicology profile and are used in very low rates per acre. The scenario for eventual use is as follows: product testing efficacy and phytotoxicity, IR-4's for residues and tolerance establishment, Section 18's , and finally Section 3's (full registration). Products must show consistent efficacy and phytotoxicity, with minimal environmental hazard, and must have the full blessing of the company.

It is a very competitive process within the industry and across disciplines. Just because I get good results with an herbicide doesn't mean it will go through an IR-4 program. Similar data must be obtained in other states. The product also must compete against other pesticides, since only one or two can be submitted to IR-4 per year for cranberries. In other words, be patient!

Washington Ag-Forestry Leadership Program. In this day and age, an industry is only as good as its leadership. This program is extremely valuable and rewarding. Call me, Allen Devlin, Kyle Brewe, Jim Sayce, or Bob Whannell if you want to know more. I highly recommend it.

WEATHER

This past month was one of the wettest Novembers recorded at this station.

	Rainfall (Inches)					Growing Degree Days				
Month	1998	1997	1996	1995	20 yr av.	1998	1997	1996	1995	10 yr av.
January	18.5	14.9	9.8	14.9	10.8	58	43	51	108	40
February	11.4	5.6	13.1	7.4	9.3	69	21	86	84	55
March	10.2	16.2	3.4	8.3	9.5	97	38	108	90	72
April	3.0	6.5	12.9	7.4	5.6	99	91	190	133	116
May	3.8	4.7	4.3	2.8	3.8	265	344	231	280	216
June	1.8	5.1	1.8	3.0	2.8	350	362	315	372	323
July	1.1	1.2	1.6	0.9	1.9	476	476	460	516	421
August	0.2	2.7	1.0	1.6	1.7	484	543	440	418	440
September	0.7	6.9	2.7	3.9	4.1	369	477	385	514	363
October	6.2	15.6	11.5	10.0	6.5	244	229	245	268	217
November	19.6	6.5	14.2	17.3	11.4	99	144	67	183	99
December		9.0	18.4	13.7	12.6		38	20	82	41
TOTAL		94.7	94.7	91.2	80.5		2806	2598	3048	2402

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SPECIAL PUBLIC NOTICE

WASHINGTON STATE DEPARTMENT OF ECOLOGY
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
Seattle, WA

US Army Corps of Engineers
Seattle District

U.S. FISH & WILDLIFE SERVICE
Western WA Office
Lacey, WA

COMPENSATORY MITIGATION

The ratios listed below are expressed as each acre of conversion from wetland to cranberry bog which will require some form of compensatory mitigation (acres of mitigation required per acre of impact). For example, 1 acre of wetland impact/conversion will require enhancing between the range of 1.5 up to 6 acres of other, degraded, wetlands, depending on the functions and values of the impacted/converted wetland and the enhancement proposed.

All compensatory mitigation scenarios will require monitoring reports. It should be noted that the ratios presented below are, on average, lower than the ratios required for other wetland impacting projects, such as building a large shopping center in a wetland. The reasoning behind this is the acknowledgment that cranberry bogs are, in most circumstances, wetlands themselves which may provide some important wetland functions (such as flood storage and water fowl habitat). These ratios are presented as a range since best professional judgment by the resource agencies and the Corps on the degree of mitigation needed will be the basis of the Corps permit decision. The intent of doing the wetland study cited above is to improve our knowledge of the resources impacted both adversely and beneficially so that the interim guidelines can be adjusted, if necessary, to assure no net loss in acreage or function.

	COMPENSATION RATIO GUIDELINES (AREA)	
MITIGATION TYPE	BEDS (wetland conversion)	DIKES (wetland fill)
Restoration	1:1-3:1	1:1-4:1
Preservation	2:1-4:1	≥7:1
Enhancement	1.5:1-6:1	3:1-8:1
Creation	1:1-3:1	2:1-4:1

The following information should be used when reviewing the range of ratios presented above:

- **Mitigation ratios would be doubled if an after-the-fact Corps permit is issued for unauthorized work in waters of the U.S., including wetlands.**
- Restoration was viewed by the committee as a preferred type of compensatory mitigation.
- Preservation of threatened, high-quality wetlands was viewed as a high priority type of compensation. Preservation will be limited to 50% of the compensatory mitigation acreage except in those cases where the wetlands to be preserved are mature forested wetlands, or other high-quality wetlands which the Seattle District Corps or Ecology has determined to be at risk from degradation due to human activities that might not otherwise be expected to be restricted. In all cases, preserved wetlands must be subject to a deed restriction or conservation easement which ensures protection in perpetuity.

- Enhancement of degraded wetlands was viewed as acceptable, but lower priority type of compensatory mitigation than restoration.
- Creation was viewed as an acceptable, but very low priority type of mitigation.
- Conversion of uplands to cranberry bogs is considered as a part of mitigation sequencing - i.e. avoidance or minimization of impacts to wetlands. It is not considered as sufficient mitigation for final permit requirements and therefore, cannot be used to further reduce compensatory mitigation ratios. However, conversion of uplands to cranberry bogs can be used to achieve the "no net loss of wetlands" requirement for NWP 34. In order to comply with this NWP 34 condition, the uplands converted to cranberry bogs must be within the same watershed and in close proximity (determined on a case-by-case basis) to the existing cranberry operation.
- The ratios are guidelines. There may be circumstances where higher or lower ratios might be appropriate. The appropriate ratio is to be determined by best professional judgment or an approved functional assessment procedure. This will be dependent upon the functions and values of the wetland being impacted by fill or by the conversion to cranberry beds, the compensatory mitigation provided by the applicant, and the difficulty of replacing these functions and values.

- Special circumstances may warrant higher or lower ratios. A minimum acreage (area-based) replacement ratio of 1:1 typically will be required except in certain situations. The applicant may propose replacement of wetland functions and values in lieu of area-based mitigation in the form of equivalent functions and values with the following caveats:
    - The wetland being altered is not a Category I wetland under Ecology's rating system;
    - Documentation must be provided from a qualified wetland biologist that describes how the proposed mitigation will replace or improve upon the specific functions and values provided by the altered wetland. This documentation shall include a detailed assessment of the functions and values to be degraded or lost at the impact site and those to be provided by the proposed mitigation action and shall demonstrate (at a minimum) the degree of uncertainty as to the probable success of the proposed mitigation; the period of time between the alteration of the wetland and replacement of lost functions and values and; projected gains or losses in functions and values;
    - This documentation must be coordinated with agencies with expertise and demonstrate that no loss of wetland functions and acreage result from a reduced ratio.
- Mitigation performed in advance of the wetland impacts (i.e. mitigation banking or advanced compensation), demonstrating through monitoring that full wetland function and acreage is replaced, would be required at a 1:1 ratio.
- Ratios would likely be (down) adjusted if a fully functioning compensatory mitigation bank or advanced compensatory mitigation was created for cranberry projects.

The Seattle District, Regulatory Branch, should be contacted prior to beginning construction in any waters of the United States, including wetlands, for site specific jurisdictional determinations and permit requirements. Permit applications can be obtained from the Regulatory Branch at Post Office Box 3755, Seattle, Washington, 98124-2255. Questions regarding this publication may be directed to Ms. Gail Terzi of the Seattle District Regulatory Branch at (206) 764-6903 or Mr. Bill Leonard of Ecology at (360) 407-7273.