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NEWSLETTER VOLUME XIV

With gracious funding from the Wisconsin Cranberry Board, Ocean Spray Cranberries and Cliffstar we can once again publish the Wisconsin Cranberry Crop Management Newsletter. We send this newsletter to all known cranberry operations in Wisconsin at no direct cost. We make every effort to maintain an accurate mailing list. If the address on this newsletter is wrong, please contact Teryl Roper (608-262-9751) with the correct address.

The target audience for this newsletter is the marsh managers. These are the people who make the day-to-day management decisions about fertility, pest management, irrigation, frost protection, etc. In an effort to reduce costs we try to send only one copy per marsh operation.

Teryl Roper, Extension Horticulturist, UW-Madison

ON MARGINALITY

An often-overlooked economic concept is the notion of equating ***marginal revenue*** and ***marginal cost*** when making production decisions. Equating marginal revenue with marginal cost results in optimal economic use of production inputs – making as much (or losing as little) money as possible. This is especially important in tough times like this year, when prices for the 2000 cranberry crop will likely remain depressed and input costs will continue to rise.

The concept goes like this. The yield response to most inputs used in growing cranberries can be characterized by a production function that exhibits declining marginal productivity. In plain English, this means that each additional pound of fertilizer you apply, for example, results in smaller and smaller increases in yield. This is sometimes called the law of diminishing returns. Taken to the extreme, additional fertilizer will eventually reduce yields as burning (and vine overgrowth) starts to occur.

Now let's introduce economics. The increase in cranberry yield (lbs./acre) from an additional pound of fertilizer multiplied by the price of cranberries ($/lb.) is the ***marginal revenue*** from that particular pound of fertilizer. The higher the cranberry price, the higher will be marginal revenue from additional fertilizer. But regardless of price, marginal revenue will start off high and then tail off, eventually becoming negative, as more and more fertilizer is applied.

The ***marginal cost*** of fertilizer is the price of an additional unit of fertilizer. Unlike marginal revenue, the marginal cost of fertilizer doesn't change as more is applied and is not affected by cranberry price. So the marginal cost of fertilizer is

a constant, a target to which marginal revenue is driven. Equating marginal revenue and marginal cost in this case means applying fertilizer only so long as the dollars received in additional cranberry revenue are greater than the dollars you spend to buy the fertilizer. The difference between marginal revenue and marginal cost is the contribution of another unit of fertilizer to your profits.

Too fast for you? OK, look at it this way. You know from experience that if you bump fertilizer use from current levels by 1,000 pounds/acre you can expect to increase cranberry yield by 5 barrels/acre. Say the particular fertilizer you're using costs $400/ton (including application) or $200/acre in marginal cost for the increased use. At a cranberry price of $50/barrel, you're generating $250/acre in marginal revenue by putting on that extra half-ton of fertilizer (5 barrels/acre times $50/barrel equals $250). The extra fertilizer adds $250 to revenue and $200 to cost – and $50 to your bottom line. Good decision; apply even more fertilizer since marginal revenue exceeds marginal cost at this level of use!

But what if the cranberry price is $20/barrel? In that case, the extra $200 worth of fertilizer would bring you only $100 in additional revenue, resulting in a $100/acre loss in profit. Not a very good decision; cut back on fertilizer use since marginal revenue is less than marginal cost.

Obviously this is a "cooked" example. In real life, the yield response to fertilizer, pesticides, and other production inputs depends on a host of factors and cannot be precisely specified. Moreover, some input expenditures incurred this year have carryover benefits in subsequent years, which complicates the decision. There are also environmental factors to consider in determining chemical use. But UW-Extension specialists and other horticulturists can provide you with some reasonable yield response guides to help gauge marginal revenue. Get their help. This is not the year to be caught with your marginal revenues falling short of your marginal costs!

Ed Jesse, Extension Ag. Economist, UW-Madison

CUTTING ON FUNGICIDES

With the current price of cranberry, the rule for fungicide use in Wisconsin is simple: ***unless you have cottonball or are growing fresh fruit, do not spray fungicides***. Cottonball is one disease that should be controlled even in tough economic times. This pathogen persists for years (nobody knows exactly how many years) in the form of "mummies" near the soil surface. If mummies accumulate over the next few years, you will be fighting cottonball for the rest of the cranberry bed's or your life, whichever is shorter.

Data from several years' research in Wisconsin indicate that bloom sprays are more important for cottonball control than are sprays during budbreak and shoot elongation. In fact, under low to moderate disease pressure, spraying only during bloom controls cottonball as well as spraying during budbreak *and* during bloom. There are no clear-cut, research-based definitions of low, moderate and high disease pressure, but the following provides some working guidelines for determining how to spray for cottonball control. In all cases, it is important to monitor and record cottonball levels at harvest to plan for the following year.

- **Low disease pressure:** Cottonball never or only rarely detected in the bed OR during early bloom, primary cottonball (tip blight) not found after 10-15 minute search. **Recommendation:** Don't spray.
- **Moderate disease pressure**: Bed has a history of cottonball (1-10%) OR during early bloom, primary cottonball (tip blight) found after 5-10 minute search. **Recommendation:** Do spray 1-2 times during bloom; if only 1 spray, make it at 10-20% bloom.
- **High disease pressure**: Bed has a history of severe cottonball (greater than 10%) OR during early bloom, you can easily find primary cottonball (tip blight) within the first few minutes. **Recommendation:** Do spray 2 times during bloom at the higher rate.

Patty McManus, Extension Plant Pathologist, UW-Madison

SPECIAL LABELS

If you will be using Bravo before bloom (for upright dieback) or Orbit at anytime in 2000, federal law requires that you have a copy of the special labels for these products. Contact your ag chemical dealer, the WSCGA office, or me (608-265-2047) to get a copy.

STINGER APPROVED FOR 2000

Stinger is a very potent herbicide. It is not intended as a broadcast application for post-emergent weed control. This is a rescue material for areas that are severely infested with susceptible weeds. The Wisconsin label is primarily for goldenrod and clover. It is also effective against Joe-pye weed and ragweed. It is **not** effective against brambles such as dewberry.

Growers who use stinger should expect some crop injury and yield reduction in treated areas. However, in some cases where weeds are severe, injury in the short run will be compensated by long-term weed reductions. Injury can be minimized with proper timing and low rates. Applications when cranberry vines are dormant are best. Spot treatment of clover has also been effective. If you must treat during the season wait until after fruit set. the pre-harvest interval is 50 days.

Before using stinger on cranberry growers must have the 2000 Section 18 label in their possession and sign a waiver of liability. Agrichemical dealers who service the cranberry industry have these forms. You should also contact your handler for any prohibitions for using stinger on fruit that may be exported from the U.S.

Growers who use either of these materials will be required to report your usage at the end of the season. The data are used to assure the EPA that the application targets were not exceeded and to determine the number of treated acres. Part of the application process for these exemptions requires making estimates of usage. Reporting allows us to see if we are "good guessers". Reporting forms will be mailed to all Wisconsin growers towards the end of the season.

> The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must arise with the occasion. As our case is new, so we must think anew and act anew.
>
> Abraham Lincoln

Wisconsin Weekly Weather, Selected Cities, Ending as of 7:00 a.m. on April 2, 2000												
City	Temperature						Growing Degree Days (Modified Base 50)		Precipitation			
	Avg. max .	Avg. min .	High max.	Low min.	Avg.	Avg dep. from normal*	Mar. 1 to Apr. 1	Mar. 1 to Apr.1 normal*	Last week	Since Mar. 1	Mar. 1 dep. from normal*	Year to date
Eau Claire	54	27	62	19	41	4	102	2	0.07	0.76	-1.00	3.51
Green Bay	54	30	64	23	42	6	84	6	0.21	0.92	-1.21	2.83
La Crosse	58	32	67	25	45	5	119	14	0.09	1.38	-0.75	3.75
Madison	55	31	65	24	43	5	97	17	0.18	1.19	-1.05	3.98
Milwaukee	52	35	63	28	44	5	92	na	0.14	1.10	-1.65	3.96

Note the high Growing Degree Day accumulation compared to the 1961-1990 average.

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