Integrated Cranberry Crop Management for Wisconsin

Cranberry

Crop Management Newsletter

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UW Extension Cooperative Extension

Your county extension office

This Issue:

Tobacco Streak Virus—Research and Industry Survey

Patty McManus
UW-Extension Fruit Crops Specialist and Plant Pathologist

Last year Tobacco Streak Virus (TSV) was discovered on cranberry at three marshes near Warrens. Presence of TSV was associated with berry scarring (see photo), although we do not know if it was the virus or something else that caused berry scarring. I think TSV had at least a partial role. Fortunately, the extent of injury was not great, and the affected beds yielded well. Here I will update you on our plans for work on TSV in 2013. We will focus on four questions, with the first one directly relevant to any grower in Wisconsin:

How widespread is TSV in Wisconsin? In 2012 we tested vines from approximately 10 marshes, and except for three marshes near Warrens, all samples were negative. Samples submitted from additional sites by other researchers and growers also tested negative for TSV, or at least no one has reported otherwise to me. In 2013 we will survey beds of different varieties throughout Wisconsin, with a focus on Mullica Queen, since that was the worst affected variety in 2012. If we find beds that test positive, we will also test neighboring beds and weeds to see if they might be a reservoir. We will work with crop consultants to get samples from a range of locations, but we will also accept samples for TSV testing directly from growers. **This survey will begin in July; watch CCMN for more information.**

Does TSV persist in cranberry vines from one year to the next? TSV did persist in plants we dug in fall 2012, overwintered in a cold room, and then put into a greenhouse at UW-Madison. All plants that had berry scarring in 2012 tested positive in 2013. In late May we will sample from beds that tested positive in 2012 to see if the virus persisted in the field through the winter.

Does TSV affect yield components even if symptoms are not seen? It's pretty obvious that berry scarring, regardless of the cause, reduces berry quality and yield. But what about uprights that are TSV-positive yet don't show symptoms? In 2013, we will measure flower number, fruit set, and fruit weight on three types of uprights, provided we can find these in the field: TSV-infected uprights that *have* symptoms; TSV-infected uprights that *lack* symptoms; and healthy uprights that do not have TSV or symptoms.

Is TSV carried on pollen? We will collect pollen from plants that had symptoms in 2012. We will try to detect TSV on that pollen, but we also will use that pollen to pollinate potted, non-infected plants in a UW-Madison greenhouse. In some cases we will gently pollinate as a bee would do, and in other cases we will injure flowers as thrips would do during feeding. A few weeks after pollination, we will test leaves for TSV and monitor fruit for symptoms. We will hang onto these potted plants and retest in 2014, because perhaps TSV is pollen transmitted, but it takes time for the virus to be detected.

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Berry scarring symptoms on Mullica Queen cranberry in July 2012.

Stinger Herbicide Receives 24 (c) Special Local Needs Label for Wisconsin Cranberries

Jed Colquhoun
UW-Extension Fruit Crops
Weed Scientist

Last week, the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) approved a 24(c) Special Local Needs label for Stinger herbicide in Wisconsin cranberries. The previous Special Local Needs label expired on December 31, 2012. The newly approved label is valid in Wisconsin only through December 31, 2017.

The new label will be posted on the DATCP Special Registrations web page and must be in possession of the user at the time of application. The web site is: http://datcp.wi.gov/Plants/Pesticides/Special_Registrations/.

While the herbicides recently labeled for use in cranberry have done a good job cleaning up many weeds, other pests have often taken their place or expanded growth range as opportunists. Clover, for example, seems to do quite well in the absence of other weeds or in a weak patch of cranberry growth, but can be controlled with a spot-spray application of Stinger.

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Address Correction

If you have any address corrections, additions, or deletions, please let us know. If you prefer to receive the CCMN newsletter by e-mail, please call 715-421-8440 or e-mail: mspencer@co.wood.wi.us

Thank you!

Help Us Out Please!

Matt Lippert
Wood County UW-Extension
Agriculture Agent

Benchmarking is the comparing of quantifiable factors within an industry. Comparing your TACY or BRIX at harvest time with other growers at the same market would be an example of benchmarking. You could use this information to evaluate the effects of your variety selection, timing of harvest or other cultural practices.

We are attempting to obtain benchmarks regarding cost of production in the cranberry industry. Difficult times make one a believer in the importance of controlling the cost of production. So, many inputs even in difficult times, still pay for themselves and have short- or long-term negative impacts if not utilized on the marsh. It is never easy to make choices of what inputs possibly should be increased or cut back. Comparing the experiences of other growers, to have some standards of industry-wide normal levels, should be of value to help a grower make better economic decisions for their marsh.

UW-Extension is attempting to compile numbers of industry cost of production. You can help us provide better information by participating in this data collection effort. We have an Excel spreadsheet where you can enter your input numbers. Your sharing of this data will be kept strictly confidential. The spreadsheet can be found on the Wood County UW-Extension website. Pooled results will be shared in future articles in the ***Cranberry Crop Management Newsletter***. Individual specific numbers never will be shared. *See page 5 for a sample worksheet.* Please help out with this survey. Return completed spreadsheets to matthew.lippert@ces.uwex.edu or share with your trusted cooperating consultant that has the ability to forward this information to us without sharing your personal contact information.

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References to products in this publication are for your convenience and are not an endorsement of one product over similar products. You are responsible for using pesticides according to the manufacturer's current label directions. Follow directions exactly to protect the environment and people from pesticide exposure. ***Failure to*** *do so violates the law.*

Calculating Cranberry Cost of Production

Matt Lippert
UW-Extension Agriculture Agent

In my Extension work, for many enterprises, we discuss budgets. We discuss determining cost of production. As educators, we often admonish, how can you run a business, with many employees, many hundreds of thousands of dollars of inputs, thousands to millions of dollars of sales—how can this be done successfully without knowing your cost of production? The short answer is that it can't be done WELL without a grasp of production expenses. However, the more realistic answer is that determining the cost of production is often elusive.

If you are comfortable believing that you have determined your own cost of production, Congratulations! Perhaps you have, but likely it is not a thing that will be productive to share at the coffee shop. You and the next grower, or your production consultant or your banker may all employ different standards or methods to arrive at that number. So, your $30 per barrel may not have the same meaning or represent the same costs as another grower's $30 per barrel.

How can there be different standards? After all, costs are costs, aren't they? Well, let's just consider some obvious ways that the numbers may take on different meaning. There may be such a thing as unpaid labor, you and your family or the family of co-owners, may not charge for their time; it may not even be divided out of the residual at the end of the year, and instead, it may be plowed back into the business as improvements are made. Possibly, benefits such as utilities for a house, or the house itself, may be provided to an owner or employee. It is easy to acknowledge this as a benefit but more difficult to quantify what value you should be charging to the business, sort of an annualized value, charged against the production of your marsh.

Labor is a common one where the lines are blurred for many businesses; certainly, it is a large one on a cranberry marsh where labor is a larger input than on some other agricultural enterprises.

Cost of production often becomes jumbled for people utilizing cash basis tax accounting. If you pay for the inputs of two seasons during the same tax year, intentionally as a tax management strategy or just coincidentally based on when payments were made at the end or beginning of a tax year, your cost of production for a given crop year may be under- or over-estimated unless you allocate for management purposes where the costs truly should be applied—correcting for the inaccuracies possibly with cash accounting systems.

Growing a perennial crop is more complicated and less straightforward than a cost allocation procedure if cranberries were an annual like corn. Some late season cultural practices may not be justified from a cost standpoint on the current year's productivity but may be justified based on the following or even subsequent years' yields.

I have made the case for determining cost of production not being a simple or straightforward procedure. When times are good, when there is margin left for the grower, one might rightfully decide that it is not even a necessary practice to engage in. Instead, we might be inclined to equate maximizing production with optimizing inputs. We might engage in some relatively expensive practices because they can be justified on relatively little improvement in yield. Possibly, the yield won't show up in the first year but hypothetically may express itself over a period of years. We may even justify practices that can't be counted on to increase yield; but in some way, decrease risk or improve the quality of life of those involved on the marsh. Beehives come to mind for me on this one. How does one decide how many beehives to have on the marsh? If we are on the high end of what other growers utilize, can we justify that last hive on a yield basis; or is it possibly a risk avoidance policy. If we have optimal pollinating weather, that hive couldn't be justified; but if the pollinating season is difficult, perhaps it would be worthwhile.

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Early Season Insect Control

Suzanne Arendt
RedForest Crop Consulting, LLC

Before the use of insecticides, cranberry growers used flooding methods to control insects. Over time our industry has re-evaluated the efficacy of such cultural methods in relation to our main insect pests. Research has shown positive kill results on several species including spanworms, black-headed fireworms, loopers and false armyworms. Sparganothis fruitworm flooding has had mixed results but does certainly cause suppression. In some cases, flooding eliminated any need for additional control measures prior to bloom. Flooding causes a deprivation of oxygen which ultimately leads to death of the insects. Removal of the "trash" during a flood is crucial as some insects will seek refuge on tall weeds/trees and grasses. Floods should be maintained over the canopy of the vines in order to accomplish the removal of insect laden debris. The duration of flooding should occur from 24 to 36 hours from start to finish. The water needs to be "on" and "off" as quick as possible. The vine development should not exceed rough neck on the edges in my experience to reduce the risk to the cranberry plants. In some cases, the flooding can cause vines to be held back slightly compared to other acreage that was not flooded; however, it appears that the vines do "catch up" over time. I have not heard of any crop reductions when a proper flood was used.

If the clarity of your water is extremely merky, the oxygen levels may be quite low increasing your risk of vine injury. It would be advisable to monitor oxygen levels. A threshold has not currently been established, but a good rule of thumb is that if the oxygen level is at 5ppm or lower, there could be an increased risk to your vines. The cost per acre of flooding can be lower than an insecticide treatment especially on marshes that can gravity flow water and those with electric pumps. However, on other properties, the cost can be higher due to high fuel costs and difficulties maintaining the flood with additional man hours needed. Flooding your marsh to manage insects fits well in our Integrated Pest Management programs and is more eco-friendly than pesticides. Please keep flooding open as an option for controlling early season pests and discuss any questions or concerns that you have with fellow growers, consultants and University advisors.

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Cash Flow Requirement not the Same as Cost Production

Matt Lippert
Wood County UW-Extension
Agriculture Agent

Remember the story of the two marshes with the black-headed fireworm infestation? I had the old poorly designed beds and the less productive vines. My neighbor was going to out yield mine by over twice as much. In this scenario, likely the neighbor has an obligation not only for interest on the loan for the improvements which are a true production cost, but they probably have committed to retire some of the debt as well as is typical with a loan amortization. This is a cash flow obligation, but it is not part of the cost of production. Similarly, if they had invested in a non-business related asset, perhaps a yacht, that would generate a cash flow obligation the business may face that is not related to the cost of producing cranberries. It is fun to think of a yacht!

When the margin between revenue from the marsh and the cost of production is very low, growers also have difficulty servicing debt they have committed to their loans. Many would put the entire payment obligation as part of their cost of production; but, as I alluded to above, only the interest associated with the loans related to the business should be counted as part of your cost of production. ❖❖❖

Benchmarking Survey Sample
Operating Inputs Cranberry Marsh XYZ

Raw material inputs		**Type**	**Notes**				**Dollars**
Fertilizer				acres	units/ac.	$/unit	total
	example	13-13-13	cost/ton ($0.00) @ 100# per acre	0	300.00	600.00	
	example	0-0-50	cost per ton (0.00) @ 100# per acre	40		800.00	0.00
	example	10-10-20	cost per ton (0.00) @ 100# per acre	50	100	575.00	1437.50
Pesticides							
Herbicides	*exam-ple*	Caseron	cost per pound (0.00) * appl. Rate * acres	50.00	40.00		10000.00
	example	Callisto	cost per gallon (0.00) * appl. Rate * acres	50.00	0.13	575.00	
Insecticides							
	example	Lorsban	expected used * acres				40000.00
	example	Diazinon	expected used * acres				
	example	Altacor	expected used * acres				
Fungicide	*exam-ple*	Abound	expected used * acres	25.00	10.00	12.40	3100.00
			Total Raw materials				54537.50
Operation Inputs							
Diesel/gas/propane			type cost * gallons used				25000.00
Oil & grease			type cost * drums used				2500.00
Electricity			KWH * rate				10000.00
Accounting			taxes and monthly reports				1500.00
Crop Scouting IPM			acres * rate per acre				5000.00
Equipment Repair & Maintenance			total parts, labor				6000.00
Interest							8000.00
Insurance(crop, vehicle)			multi perril, liability, hail				5000.00
Irrigation supplies							1250.00
Office Supplies							500.00
Pollination			hives per acre * acre * rate	50.00	3.00	65.00	9750.00
Property Taxes							5000.00
Cellphone/communications/frost alarm							2000.00
Wages							120000.00
WSCGA/ Crop dues/ Membership dues							2300.00
			Total Inputs				258337.50
Acres		50	Yield/acre	240			

See Wood County-UW Extension website at www.wood.co.us/departments/UWEX/agriculture for Benchmarking Worksheets

Calculating Cranberry Cost of Production, ***Continued from p. 4***

Capital expenditures, investments in improved equipment or buildings, may provide for a better working environment for the workers, but possibly not in improved efficiency that can be justified in reducing labor or increasing yield. Like the house mentioned above, even if the capital purchase does improve efficiency, one needs to have some method to annualize the cost of the long-term investment and allocate it over the useful lifetime of the purchase to accurately reflect the cost of production.

If we were sharing notes with our peers at the proverbial coffee shop that I alluded to earlier, say I and another grower purchased two identical harvest tools at the same price on the same date, but I decided the useful life should be allocated over three years and the other grower estimates that it should last 15 years, that could make a real difference in our calculated cost of production. Likewise for large capital purchases, let's say we both made that same purchase, and I will use mine on my 30 acres, but my neighbor can get by with the same unit and spread its value over 300 acres, it will be a much more expensive input for me than it will be for the larger grower.

Nobody ever said that life was fair either. I may own a poorly drained, older marsh with older less productive varieties. Right across my ditch another grower may have in place the newest, most productive hybrids placed in the most correctly designed beds known. We both face the same black-headed fireworm infestation and use the same insecticide at the same rate on the same date with the same success. At year end, my old vines produce at below state average yield while the new vines produce at double state average yield. Per acre, our insecticide costs are the same; but per barrel, theirs may be less than half of mine. Possibly the expenditure can be justified for both of us, but the choice is less clear cut for me with the lower production potential. Might I have to make more conservative choices considering my lower yield potential? During good times likely not, but during times that may be no-margin times for me with below average yield potential, I may have to make different choices.

Determining cost of production is a difficult process. It is an extremely important business practice for each grower to make an effort at this and to be aware of the nuances of their particular method and what it implies for their business. ❖❖❖

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