Volume XIV, Number 2, May 5, 2000

NO CROP?

With the CMC having voted to recommend to the USDA Secretary a producer holdback of about 15%, some growers may choose to **not** produce a crop on some beds. I think this is a reasonable strategy. One could examine previous cropping history and not produce a crop on the least productive beds. Because of the vagaries of nature, it is not prudent to purposely eliminate what historically would be 15% of your crop, but perhaps 10% is a reasonable figure.

There are at least four approaches to eliminating a crop on an otherwise producing bed.

1. Mow it off
2. Don't frost protect (unless a severe frost is forecast)
3. Flood during bloom
4. Burn & scalp for renovation

The first three strategies will require some ongoing management on your part. The fourth requires no management but requires a larger subsequent investment. Consider the following ideas from Carolyn DeMoranville at UMass if you choose to eliminate your crop on some beds.

- ✓ Maintain dikes and flumes. Keep ditches clear enough to avoid drainage problems.
- ✓ Irrigate so that the plants are preserved. Use a tensiometer or water level float for scheduling. Take the opportunity to manage the water table so that rooting depth is increased. Production of deeper roots takes energy from other plant processes such as fruit production, but when crop is eliminated, this is not a problem. With deeper roots, the bed should be more productive in later years.
- ✓ Consider frost protection only when the prediction is for more than 5º below tolerance.
- ✓ Scout for and control foliage chewing insects such as cutworms, army worms and especially fireworms.
- ✓ Control dodder. Failing to control dodder will lead to run-away infestations and reduced plant vigor (poor bud production) for next year and will allow seed production that may plague you for years.
- ✓ Use 1/3 to 1/2 the fertilizer rate as that for a producing bed. Split apply in late spring and mid-July.
- ✓ Roper's opinion is to apply no N to beds that will not be producing a crop unless observations warrant more vigor.

If you have a young bed that perhaps has not vined in as well as you would like you might consider eliminating the crop on that bed. Removing the crop will allow the vines to partition more resources into vine production since fruit will not be competing for nutrients or carbohydrates.

Teryl R. Roper, UW-Madison Extension Horticulturist

ANSWERS TO COMMON NUTRITION QUESTIONS

Nitrogen

Many of the questions that arrive at my desk are repetitive. This article will answer some of the most common nutrition questions related to nitrogen. Subsequent articles will cover other nutrients or nutrition related topics. The information presented here is research based unless otherwise indicated.

A. *What is Nitrogen used for?* Nitrogen in the ammonium form is used in the formation of amino acids. Amino acids are assembled in appropriate order to form proteins. Enzymes that mediate plant metabolism and regulate uptake and movement through membranes are proteins. Proteins as enzymes are essential for energy capture and sugar formation via photosynthesis.

B. *Do N fertility guidelines vary by cultivar?* The optimum tissue level is the same. The optimum rate for Stevens is 20 lbs N/a. The optimal rate for Stevens in Wisconsin research was different for different soils. A sand soil did best at one year at 40 pounds and a peat-based bed did best at 20 pounds. In all cases 20 pounds was better than 0 pounds N/a. Stevens appears to be a bit more forgiving of above optimal N than Searles.

C. *What is the optimum timing for N application?* Research in Wisconsin has shown that the best time to apply N on Stevens is: budbreak, peak bloom, fruit set, and preharvest. Data for Searles were inconclusive. The optimal rate for bearing beds was 20 lbs/A. Interestingly, there were no treatment effects the first year as the buds for that crop were already in place. The treatment effects appeared in year two as a result of N fertilization in year one. This is common in fertility experiments.

D. *How much N comes from thunderstorms?* In rural Wisconsin precipitation amounts to about 10-15 lbs N/A. However, this N is NO_3^-, not NH_4^+ and so is not useful for cranberries. Further, this natural precipitation is also present in all fertility studies and in your experience, so this should not be counted as part of the 20 lbs N/A.

E. *After application how long does it take for the N to be in the young fruit?* Actually you don't want it in the fruit, you want it in the leaves so it can be used to make sugars that will cause the fruit to grow. In field studies using ^{15}N we can find ^{15}N in the uprights by 24 hours after application. It takes about 1 week before this levels off, depending on the air (soil?) temperature.

F. *Can I estimate N release from organic soils?* Mineralization, the process through which organic N is released as ammonium, is microbe mediated and therefore the process is temperature dependent. Further the soils must not be "wet", just moist. During hot weather (>85°F) postpone or eliminate N applications to peat beds as much N will be mineralized. There is no "formula" to determine mineralization.

G. *N released from peat below a 6-8" sand lift?* Cranberries are relatively shallow rooted. In my opinion little to no N would be available to cranberries under a 6-8" sand lift.

H. *Foliar applications*? Foliar N applications have their place. They are most effective when uprights are

growing poorly or look pale. Foliar applications are expensive, but will "green" vines up in a short time. However, cranberry uprights cannot absorb sufficient N through the leaves to meet their full N requirement.

I. *Fall applications to enhance bud set?* A fall application is included in the best fertilizer timing protocol described above.

J. *What about drainage and leaching?* Ammonium N does not leach appreciably (but may leach or run off in surface water if a significant rain event quickly followed application). When pH is 5.5 or below there is no significant nitrification. Drainage is important because NH_4 uptake is energy dependent and oxygen is required for this process. When soils are saturated air is excluded and the root zone becomes anaerobic→no N uptake.

K. *What about slow release products for new beds?* We have recently done that research using Ammonium sulfate, SCU, MEU, Milorganite and composted chicken manure. All treatments were adjusted to provide the same amount of N, P, & K. Our results show that **none** of the slow release products performed as well as ammonium sulfate, not even close. We did not test osmocote as it is very expensive.

L. *At what soil temp does N uptake begin?* About 50°F.

M. *Are there guidelines for optimum growth of current season uprights?* Some of this work has been done in MA. We have not done that work in Wisconsin. My opinion is that it would be highly variable based on location, crop load, etc. However, the MA recommendations are:

Cultivar	**Optimum growth before early bloom**
Early Black	50-60 mm (2-2.5 in)
Howes	45-55 mm (1.75-2 in)
Ben Lear	55-65 mm (2-2.5 in)
Stevens	60-70 mm (2.5-2.75 in)

Teryl R. Roper, UW-Madison, Extension Horticulturist

Manners are of more importance than laws. Upon them in a great measure, the laws depend. The law touches us but here and there, and now and then. Manners are what vex or soothe, corrupt or purify, exalt or debase, barbarize or refine us, by a constant steady, uniform insensible operation, like that of the air we breath.

Edmund Burke

ROUNDUP LABEL CHANGE

Roundup Ultra may now be used to control weeds growing in the interior and perimeter ditch area of cranberry production areas. Make application with hand-held sprayers with nozzles that emit medium to large droplet sizes to minimize drift. Use a 1-2% solution of Roundup Ultra on a volume-to-volume basis. Spray to wet vegetation, not to run-off.

Drop water levels in the ditches to remove standing water before making application. Allow seven or more days after application before raising water level in ditches. The 30 day pre-harvest interval applies to these applications as well. Do not apply by air. Do not apply through an irrigation system. Do not apply directly to water. Do not allow this herbicide to contact desirable vegetation.

You should have the supplemental label in your possession at the time of application. You should be able to obtain a copy of the label from your supplier.

REST ASSURED

Early this spring while some of our pests were taking flight, I want you to know that my trusty "Bug mobile" and I were touring the marshes. With the mighty bug shield in place we splattered tons of pests. Integrated pest control is just what we are about!

Our mild winters are a two-fold blessing. With bed temperatures rising we do indeed see hatch. But guess what? When there isn't anything to eat, these early pests starve. Even though the daytime temperatures have risen the temperatures fall at night and the plants did not move—buds remained dormant. Once again nature is on our side in controlling our potential 2000 insect pests.

When you plan your 2000 pest control, please keep in mind that the first generation and first application are the most important. I hear some of you are contemplating cutting rates or not putting out any insecticide at all. Now listen, the first generation is a mere reflection of what the whole year has in store for you.

Time that first application perfectly, use a product that will control many many insect species, be aware that some insecticides are temperature sensitive, and note this: IF you allow the first generation to get away from you, you could face this issue—50 BHFW female uncontrolled could easily mean 2500 larvae because one female lays 30 to 50 eggs (50 eggs X 50 females = 2500). Then for the 2001 spring (*assuming all survive the winter*) you could face this: Of the 2500 BHFW let's say that half are female 1250 x 50 eggs = 62500 BHFW YIKES!!!

- By the way, BHFW thresholds are 2-3
- Is treating the first generation necessary? You decide.

Jayne Sojka, Lady Bug IPM

YOUTH SAFETY SEMINARS

We're going to try it again. We have planned two youth safety seminars for 2000. The meetings are planned for Friday June 16. A morning session will be held at the Russell Rezin & Son Marsh in Warrens and the afternoon session in the Cranmoor area (probably at the Lake Dexter Park). These sessions are designed for young people who will be employed on cranberry marshes through the summer. The general age we are looking for is 14 to 18.

Three topics will be addressed:

- Large Equipment safety
- Small Equipment safety
- Environmental safety

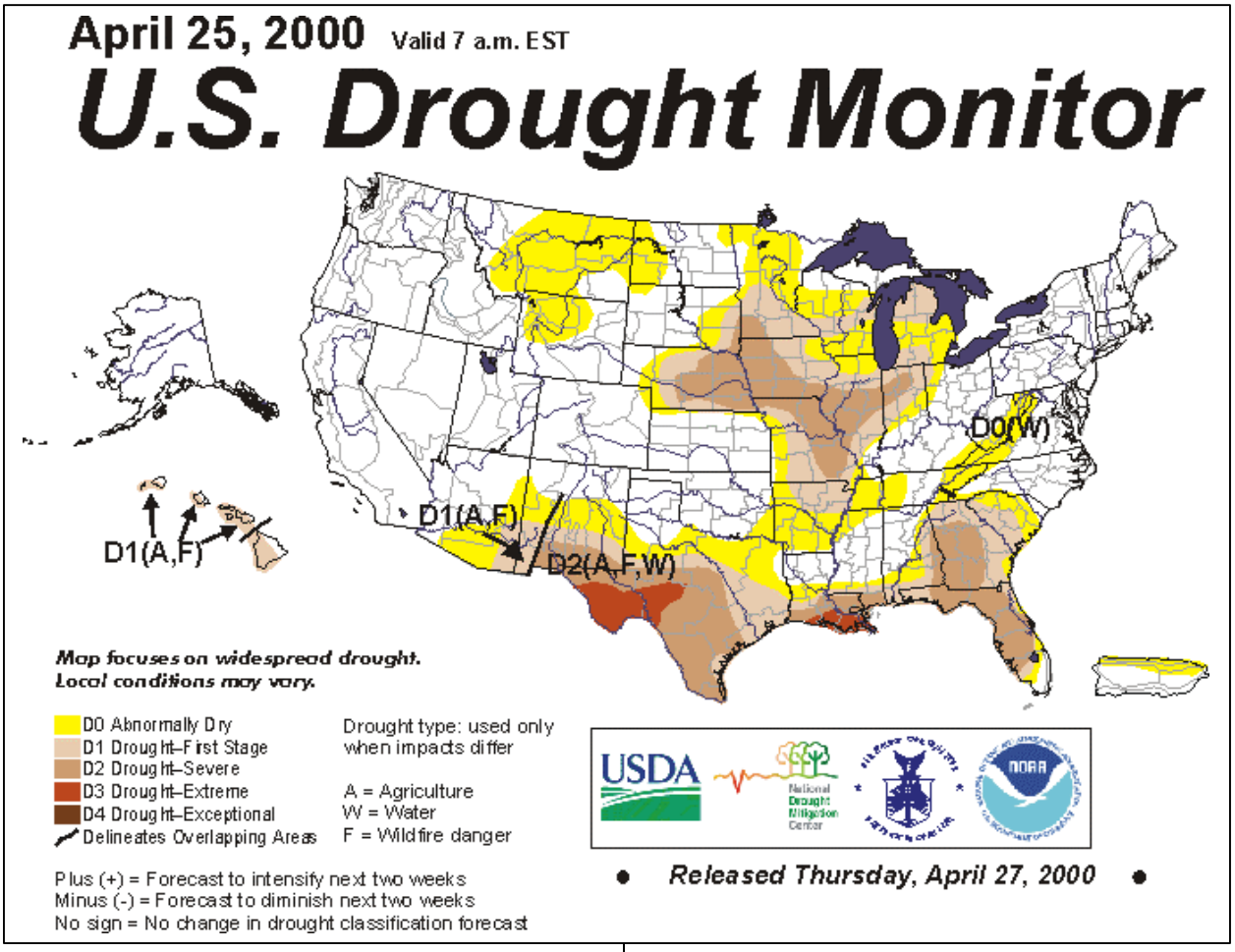
There is no fee to attend the safety seminars, but we do ask that you call the Wood County Extension Office (715-421-8440) to tell them how many young people you are going to send. This will allow us to produce enough material, (and purchase enough cool safety glasses) and have sufficient munchies at the end (Yes, that's a bribe).

We'll have more information later, but we wanted to get these dates on your calendars so that you can get your helpers trained in safety.

Teryl R. Roper, UW-Madison, Extension Horticulturist

What do we live for if it is not to make life less difficult for each other.

George Eliot



DROUGHT MONITOR

Regardless what you may consider the cause, significant portions of U.S. agriculture is in the midst of a drought. The graphic above shows the severity of drought conditions as of April 27. The map changes regularly. You can monitor the maps at:
http://enso.unl.edu/monitor/monitor.html

The current map shows regular moisture conditions in the Pacific Northwest and Northeast production areas. Drought conditions prevail across Central Wisconsin in the cranberry production areas. (the map is clearer in color than B&W).

ON THE WEB

This newsletter is also sent out electronically via e-mail and is available on the web. If you wish to belong to the cranberry e-mail list send an e-mail to Teryl Roper (trroper@facstaff.wisc.edu) and I will add you to the list. Besides the newsletter some other discussion occurs via this list, but not so much to keep your in-box full.

You can also find the newsletter posted to the Internet at:
www.hort.wisc.edu/cran/
There is also an archive of previous volumes from 1998 and 1999.

Teryl R. Roper, UW-Madison, Extension Horticulturist

Wisconsin Weekly Weather, Selected Cities, Ending as of 7:00 a.m. on April 30, 2000												
City	Temperature 1/						Growing Degree Days 1/ (Modified Base 50) 2/		Precipitation 1/			
	Avg.max.	Avg.min.	High max.	Low min.	Avg.	Avg dep. from normal*	Mar. 1 to Apr.29	Mar. 1 to Apr.29 normal*	Last week	Since Mar. 1	Mar. 1 dep. from normal*	Year to date
Eau Claire	71	38	78	33	55	5	241	130	0.00	2.84	-1.61	5.59
Green Bay	63	35	70	30	49	0	172	110	0.00	3.13	-1.25	5.04
La Crosse	71	43	77	37	57	4	270	166	T	2.78	-2.06	5.15
Madison	65	36	73	32	51	1	215	166	1.12	4.30	-0.61	7.09
Milwaukee	57	40	66	36	48	-1	164	na	0.33	4.37	-1.67	7.23

T = Trace. 1/Data from the NCEP/NOAA Climate Prediction Center http://www.cpc.ncep.noaa.gov 2/Formula used: GDD = (Daily Maximum (86°) + Daily Minimum (50°)) / 2 - 50°; where 86° is used if the Maximum exceeds 86° and 50° is used if the Minimum falls below 50°. *Normal based on 1961-90 data.

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