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CRANBERRY TISSUE TESTING

The only reliable means of assessing the efficacy of a fertilizer program is tissue testing. The correct time to collect tissue and soil samples for analysis is late August through early September. Cranberries require proper amounts of 13 mineral elements in addition to carbon dioxide, water and sunlight. When any of these items are in short supply growth and yield will be reduced. However, if they are in adequate supply, adding additional amounts will not increase growth or yields. Tissue testing is the single reliable means of determining if adequate amounts of the 13 required mineral elements have been supplied and to gauge if your fertility program has been effective.

Good tissue testing requires consideration of three factors:

- *Sample at the correct time*
- *Sample the correct part*
- *Normal nutrient ranges*

Taking a sample

Collect tissue samples during the last two weeks of August through the first week or two of September. The reason to take samples during this time is that the concentrations of the 13 required minerals are stable during this period so the exact date you take the sample is less critical. Also, the standard values against which the results are compared are based on sampling in this time frame. Samples taken at other times are not interpretable based on these standards.

Sample the correct part

A good cranberry sample consists of current season growth from both fruiting and non-fruiting uprights. Clip the uprights just above the fruit and be sure to get only current season growth. Collect about 20 tips from about 10 different locations within a bed.

Don't collect all the samples from one corner or along one edge. Walk a zigzag pattern throughout the bed, or walk from one corner to the opposite corner collecting samples along the way. Collect from about 10 separate locations within a bed. The total sample will consist of about 200 uprights or about 1 to 1 cups of tissue.

Do not wash or rinse the uprights. Washing will remove soluble nutrients and give you an inaccurate test. Allow the sample to dry overnight before mailing. Use paper bags or envelopes to mail the samples. Please don't use plastic bags or cellophane. Be sure to label each bag with a bed number or other identification code. Submit the samples promptly to a reputable laboratory. Your county Extension office can help you locate a suitable lab. If the lab is ASCS certified you can be sure of reliable results.

Soil Testing

Take a soil test at the same time you collect tissue samples. Use a trowel or soil probe to sample to six inches. Collect the soil samples in the same area where you collected tissue samples. The UWEX lab will run a routine soil test accompanying a tissue test at no additional fee ($18.00 in 1998).

Interpreting the results

Once the results come back from the lab you should compare the results against the nutrients standards for North America and against previous results for the bed or section.

In addition to the lab results you should pay attention to vine growth. Vigorous growth or weak growth may be explained by your test results and will help you alter your fertility program for the following year.

The report will not tell you how much fertilizer to apply next season, but will allow you to monitor the efficacy of your current program and point out potential concerns to watch out for later. If you plot the results of tissue testing over time you can begin to see patterns of nutrient changes over time and work to prevent deficiencies.

In a consumer society there are inevitably two kinds of slaves: the prisoners of addiction and the prisoners of envy.

Ivan Illich

In nature there are neither rewards nor punishments—there are consequences.

Robert G. Ingersoll

A tart temper never mellows with age, and a sharp tongue is the only edged tool that grows keener with constant use.

Washington Irving

Nutrient	Normal Concentration[1]
Nitrogen (N)	0.9-1.1%
Phosphorus (P)	0.1-0.2%
Potassium (K)	0.4-0.75%
Calcium (Ca)	0.3-0.8%
Magnesium (Mg)	0.15-0.25%
Sulfur (S)	0.08-0.25%
Boron (B)	15-60 ppm
Iron (Fe)[2]	>20 ppm
Manganese (Mn)[2]	>10 ppm
Zinc (Zn)	15-30 ppm
Copper (Cu)	4-10 ppm

1. Normal levels are based on samples taken between August 15 and Sept. 15.
2. Cranberry researchers have not found a normal range for Fe and Mn.

More information about tissue sampling is found in the bulletin A3642 "Cranberry tissue testing for producing beds in North America". This bulletin was mailed to all marshes last year. If you need additional copies contact your county Extension office or Teryl Roper at UW-Madison.

Teryl Roper, UW-Madison Extension Horticulturist

PRE-HARVEST INTERVALS

While harvest is still some time off, now is the time to think about pre-harvest intervals to ensure pesticide residues are within tolerance. A listing of pre-harvest intervals for cranberry pesticides is found in Cranberry Pest Management for Wisconsin (A3276).

Abbreviated Farm Hazard Checklist

Mentally check your farm and write down the number of times each potential hazard listed below is found on your farm.

Tractors

___ does not have ROPS or ROPS cab
___ PTO master shields missing or badly damaged
___ broken or missing lights, flashers, SMV emblem
___ seat belts missing (for tractors with ROPS)

Skid-Steer Loaders

___ missing ROPS or side screens
___ missing or inoperable seat belt or operator protection bar

Implements and Other Mobile Equipment

___ PTO shields broken or missing
___ other shields missing or damaged
___ missing or faded SMV emblems (for implements taken on road)
___ badly worn or damaged tires
___ worn or damaged hydraulic hoses

Farmstead Equipment

___ guards or shields missing or broken
___ no way to lock out power to work on machine

Structures

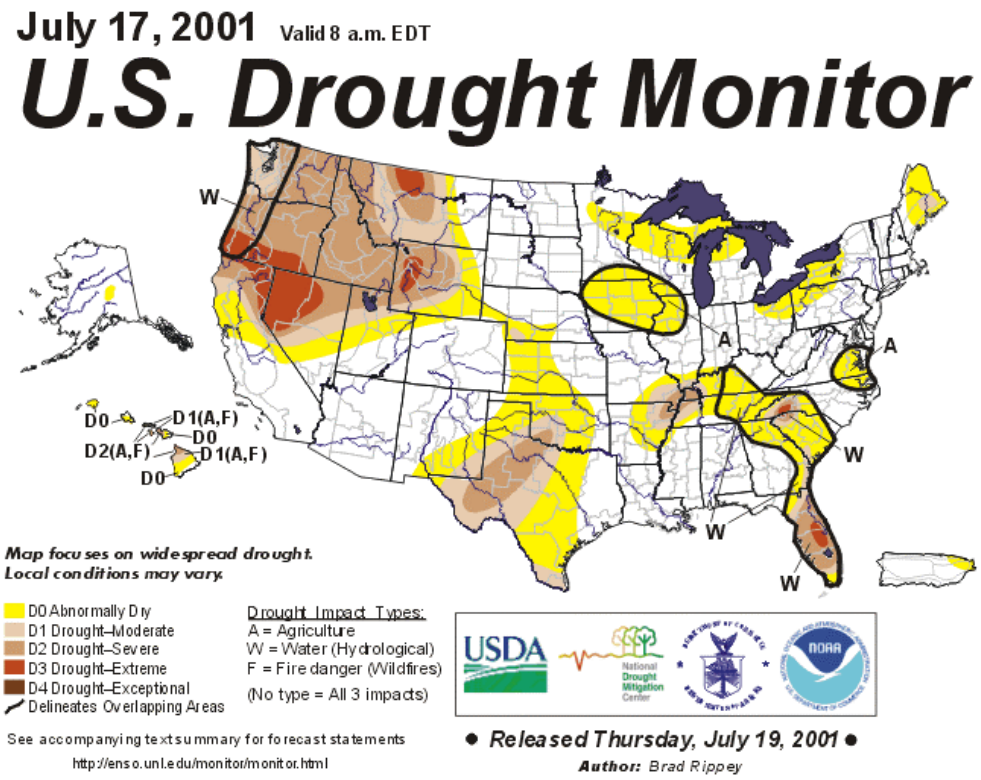
___ broken or loose ladders
___ exposed and/or unsafe wiring
___ overhead power lines could be contacted by auger or raised loader

Chemicals

___ not stored in original containers
___ not stored in a secure place
___ no sign to warn fire fighters or others of chemical storage

Personal Protective Equipment

___ not available in shop
___ not available for chemical use
___ not available for dusty conditions



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