



CRANBERRY STATION NEWSLETTER

MARCH 25, 2019

UMass Cranberry Station

1 State Bog Road

PO Box 569

East Wareham, MA 02538

508-295-2212

ag.umass.edu/cranberry

Vol. 20:2

UMass Pesticide Safety Training

(4 contact hours)

Thursday, April 25, 2019

8:00 AM – 12:00 PM

Rosebrook Event Center, Wareham, MA

Registration form is on page 5

\$55.00 per person

Must be postmarked by 4/16/19

NO-TILL RENOVATION OF CRANBERRY BOGS

Jeff LaFleur, Mayflower Cranberries, LLC - Plympton, MA

The main purpose of this project was to evaluate a new method of renovating cranberry bogs by employing no-till technology utilized in other sectors of agriculture. No-till transplanting of cucurbit and tobacco rooted plugs has been done for many years. No-till in those crops involves killing off the existing vegetation and either mowing or crimping the vegetation to create a mulch layer. The no-till transplanter consists of a coulter and shank to slice the mulch and soil before transplanting a rooted plug into the soil. In order to evaluate this method in cranberry bogs I obtained a USDA Northeast Sustainable Agricultural Research and Extension (SARE) Farmer Grant. SARE Farmer Grants are for commercial producers who have an innovative idea they want to test using a field trial and on-farm demonstration. For more information on applying for a NE-SARE Farmer Grant, please go to <https://www.northeastsare.org/Grants/Get-a-Grant/Farmer-Grant>.

The project set out to determine if no-till renovation was possible from a mechanical, horticultural and economic perspective. The project took place on 2 plots of roughly equal size. One was planted with the variety Howes and the second was a vigorous vegetative variety called Whiting Randell's. Total area of project was 0.93 acre. One plot was treated as a true no-till with no soil alteration, the second plot (sand plot) was treated similarly to the first but we spread a 2-3" of sand on top of cranberry turf after mowing the vines.

SARE requires that all projects have a technical advisor. The advisor for this project was UMass Cranberry Station Director Hilary Sandler. In consultation with Hilary, I evaluated using a few different options to kill off the existing vegetation. Glyphosate was ultimately chosen for its broad spectrum kill and ability to translocate throughout the plant. The main goal was to eliminate any regrowth of the old cranberry varieties that would jeopardize the purity of the bed and regrowth of perennial weeds such as poison ivy and saw brier.

The first step in the project was to kill the existing cranberry vines and weeds. I sprayed the plots with glyphosate on May 9, 2018 using a boom sprayer. Following the application, the weather was cooler than normal, which slowed the effectiveness of the herbicide. I began to see dieback 10-14 days following the application. A second glyphosate application was made on May 23, 2018; this was followed by warmer than normal temperatures and the plots died back very quickly.

I mowed the first plot of Howes on June 6 with a traditional flail mower. The result was a perfect bed of mulch that one could easily transplant through. The vines were mowed to about 2 inches above the soil and mower pulverized the dead vines, leaving little residue. The section planted in the Randell Vines was more of a challenge as the Randell vines were extremely thick. On June 12, we had a local farmer come in with a traditional hay mower to mow the Randell plot. The vine was extremely thick and had to be windrowed and physically removed from the bog. In perfect conditions, these vines would have been baled with a hay baler for easy removal, but because of the plot size, we had to mechanically remove them with a thumb on the front of a loader, which created a lot of disturbance of the soil. Fortunately, this was the plot we intended to use as a sand plot and we were able to regrade the plot with sand. In both plots the existing irrigation system was reused.



The rooted plugs arrived on June 6. Planting of the Howes plot commenced on June 11 and was completed on June 13. After the vine removal on the Randell plot, we hauled sand to the plot and spread about 2-3 inches over the vine stubble. The sand was spread with a tracked skid steer. We planted the Randell plot June 19-20.



Project Outcomes:

Mechanical: We used a traditional transplanter in this project, however to make this work in cranberry turf there is a need to make some modifications to a transplanter to properly place the rooted cuttings. First, I would attach a pre-slice coultter that would cut the turf layer at least 6 inches in front of the coultters that open

the turf. Second, the wheels that close the furrow need additional down pressure to insure the furrow is properly closed to maintain soil contact with the rooted cutting.

Horticultural: I clearly saw a difference in the plant growth response in the true No-till without sand applied compared to the plot that had 2-3" of sand applied. The sanded plots responded to nitrogen fertilizer quicker and developed runner growth exceeding the non-sanded plot. I hypothesized that the soil microorganisms used up nitrogen as they degraded the woody material that was left behind. I did not account for this in my fertilizer applications. I would suggest that nitrogen needed to be increased in no-till plot above the Extension recommendations for normal sand plantings. I adjusted nitrogen levels towards the end of the season, but it was too late to achieve optimum growth. I expect to see vigorous growth the second year. The plots will be sanded (in 2019) as normal new plantings prior to the start of the growing season.



Control of perennial weeds was also a challenge. We had re-emergence of poison ivy, poverty grass, running bramble and saw brier. The saw brier re-emergence was in perfect rows through the slices made by the coulter of the transplanter. One option for bogs with significant perennial weeds is to conduct the kill-off in the prior fall after harvest or even take a crop loss the prior year by killing off all vegetation one year prior to the actual planting. This of course impacts the economic model as you would lose an additional year of crop, so this loss would have to be taken in account. One grower made the suggestion of holding a long-term flood during the prior year to kill off all vegetation. In this project, I only replanted two sections of an existing bog, and thus I could not flood the entire bog. Another option is to be more aggressive with selective herbicide applications during the first growing season after the plugs are planted.

The glyphosate applications did successfully kill off the existing vine and I did not witness any regrowth of the old varieties. This was a critical aspect in maintaining varietal purity and ultimately, productivity of the bed.



Economics: The final cost of the renovation was about \$14,500/acre or almost 1/3 of that of conventional renovation. I am convinced with proper fertilization, you can achieve the same vine growth and achieve full production within the same time period as traditional renovation, but that will only be proven after the second year of growth.

The variety we choose to replant with is a new early ripening variety developed by Valley Corp of Tomah, Wisconsin. Crimson King is a cross of Ben Lear/Stevens X BG. According to Valley Corp., plot yields range from 600-900 bbl/acre with uniform coloring throughout canopy and firmness numbers in excess of 700.

Special thanks to Dana Miller, Miller Cranberries; Cass and Kirby Gilmore, Bensons' Pond; Hilary Sandler and Katherine Ghantous, UMass Cranberry Station; Ed Grygleski, Valley Corp; and Rod Serres and Erika Saalau Rojas, Ocean Spray Cranberries.

RESPIRATOR TRAINING

2 Pesticide Recertification Credit

Respirator Requirements, Training, Medical Evaluation and How to Fit Test – review of the requirements for using a respirator, choosing the correct respirator, required training with paperwork, Medical Evaluation reviewed, handed out, where you can have it completed, and the information, technique and tools of how to run a respirator fit test.

Monday, April 15, 2019
Cranberry Station Library
8:00-10:00 AM

\$30/per person.

Space is limited to 25 seats so please register.

Bring your respirator.

Contact **Marty Sylvia: 508-295-2212 x20**

UMASS CRANBERRY STATION WPS HANDLER TRAININGS

Worker Protection Training using the new materials from the EPA for cranberry workers in the handler category for Spring 2019 will be held in the Cranberry Station Library 2:00-4:00 PM on the following Wednesdays:

April 24th
May 29th
June 26th

There is a \$10 fee to cover the cost of the WPS training manual. If you have a pesticide license, you do not need this training. If you have workers, they do need this training!

Contact **Marty Sylvia: 508-295-2212 x20** to sign up or for more information.

2019 EPA WPS Update and Train-The-Trainer Workshop

Sponsored by UMass Extension Risk Management Crop Insurance Education Program

All farmworkers must be trained under the EPA Worker Protection Standard (WPS) if a farm uses any pesticides, including those approved for organic production and other general use pesticides. The agricultural employer is responsible for complying with all components of WPS including the training of farmworkers. This training can only be provided by an individual who has a pesticide certification license or has attended an approved EPA WPS Train-The-Trainer workshop.

A workshop (with 4 contact hours) will be offered at the **UMass Cranberry Station** on:

Thursday, May 2, 2019
8:00 AM – 12:30 PM

To register please visit: http://www.umass.edu/pested/training_workshops/2019_EPA_WPS_Workshops.htm or Natalia Clifton at 413-545-1044 (M-F 10 am-4:00 pm) or email nclifton@umass.edu

CRANBERRY STATION NEWS

Hold on to your Chart Book! The Cranberry Station published a multiple year Chart Book in 2018 covering 2018 to 2020. An update sheet will be available mid-April.

If you do need a Chart Book please contact the Robyn Hardy, 508-295-2212x10, for availability.

The Diagnostic Lab is now open! Please bring your samples for identification to the new diagnostic lab located in room 149. To contact the lab please call 508-295-2212x25.



Hilary Sandler, Station Director

UMASS PESTICIDE SAFETY TRAINING REGISTRATION FORM

Thursday, April 25, 2019
7:30 AM – 12:00 PM
Rosebrook Event Center
TownePlace Suites Marriot
Wareham, MA

\$55.00 per person
Must be postmarked by 4/16/19
After 4/16/19 you are considered a "walk-in":
cost will be **\$75.00 per person**
Please contact the Station to be added to the list.

Please make checks payable to **UMass** and return
registration form along with payment to:

UMass Cranberry Station
PO Box 569
East Wareham, MA 02538

Don't forget your Photo ID and Pesticide Number

PLEASE PRINT

ALL Pesticide Safety Training (4/25/19) attendees **MUST** register and pay (whether receiving credits or not)

Name: _____

ADDITIONAL ATTENDEES:

COMPANY: _____

EMAIL: _____

PHONE: _____



**CRANBERRY STATION
NEWSLETTER**

Inside this issue:

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PO Box 569
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OFFICIAL BUSINESS