



Vermont Vegetable and Berry News – January 2, 2023
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TWENTY-THREE PRACTICES TO CONSIDER FOR 2023

Happy new year! Here are some “best practices” to consider this year, provided as a reminder. Not all are appropriate to every farm, and some may already be implemented on your farm. Hopefully, these prompt you to take an action or two, even if it’s just making a note on the calendar to remember to do something. Feel free to send me ideas that should be included in future reminders.

1. [Renew](#) your farm's membership in the Vermont Vegetable and Berry Growers Association, or join for the first time by [creating an account](#). The annual fee is \$70 per farm (includes all people on your farm), increasing to \$80 after January 31. Businesses and organizations can [become members](#) for \$80. When you sign up, you can also register for the [annual meeting](#) on January 24 in Montpelier, enroll in the [CAPS](#) produce safety program, and/or make a donation to support research and extension programs.
2. Service your greenhouse / high tunnel heating and ventilation systems before you start them up. Make sure furnaces, fans, louvers, etc. are in optimal condition. This can improve efficiency and avoid problems such as heating or cooling failures, or ethylene damage from combustion gases. For details, see this UVM Extension Ag Engineering [blog post](#) and this [check list](#) by agricultural engineer John W. Bartok, Jr.
3. Reduce heat loss from greenhouses / high tunnels. Seal cracks in wooden walls and around doors (bicycle inner tubing or old drip tape can work). Insulate sidewalls / endwalls up to bench height. Inspect and lubricate louvers to make sure they are shutting tightly. For more information see these fact sheets from [UMass](#) and [Penn State](#).
4. Check greenhouse thermostats for accuracy and proper installation (in an aspirated box). Consider upgrading thermostats for improved efficiency and production quality. For details, see this UMass Extension [fact sheet](#) and this UVM Extension Ag Engineering [blog post](#).
5. Sample high tunnel soils well in advance of planting, using the correct soil test. For established tunnels, we recommend that you use the Long Term/Combined High Tunnel Package offered by the [UMaine soil test lab](#). This includes the Basic High Tunnel Test (modified Morgan’s extract, like a field soil test) PLUS the Saturated Media Extract (potting soil test) for all major and micronutrients, and it includes soluble salts and available forms of nitrogen. Test results report both season-long nutrient availability and short-term nutrient intensity.

6. When using compost-based potting mixes, obtain test results from the supplier, or send a sample off for analysis using the saturated media extract test. Plant a few bioassays ahead of time to confirm potting mix quality. This is especially important if you are trying a new brand or making your own mix. Doing a bioassay is simple: plant a few flats of fast-growing crop like beans, cress, lettuce and/or oats and observe plant performance. Having a 'control' flat filled with a standard commercial mix for comparison can be informative. For details see this [fact sheet](#) from Penn State.
7. Perform maintenance on tractors and trucks to extend operating life and be ready for use come spring, see this [check list](#) from Utah State Extension. If you're using tractors in winter, here's a shorter [checklist](#) of maintenance for cold weather operation. And, here's a tractor pre-use [checklist](#) from OSHA.
8. Get your wash and pack shed ready for harvests. Replace food contact surfaces with materials that are easy to clean, see this UVM Extension Ag Engineering fact sheets on [smooth and cleanable surfaces](#). Upgrade your [cleaning tools and supplies](#) such as brushes, brooms, scrapers, squeegees, mops, sponges and scrubbers. Order materials for cleaning (soap or detergent to removes germs, dirt, and impurities from surfaces), sanitizing (to lower the number of germs on surfaces) and disinfecting (to kill germs on surfaces). To understand more about these process see this [brief guide](#) by Chris Callahan
9. Upgrade bins, buckets, and totes for produce harvest and storage to increase efficiency and ease of cleaning. See this [blog post](#) by UVM Extension Ag Engineering as well as this [one-pager](#) on how to clean bins properly
10. Develop SOPs for crop harvest, washing, packing and share with your employees. To support this, you may want to use the 2012 Roxbury Farm Crop and Harvest Manual which was updated in 2022 by Jean Paul Cortens and is available [here](#). This highly practical guide was developed with input from 20 other farmers. It describes indicators for harvest readiness, harvest procedures, cleaning/washing and storage procedures for 48 crops.
11. Use hot water treated seed to reduce seed-borne pathogens, especially in tomato, pepper, and brassicas. UMass offers a low-cost heat treatment service. Here is a [description](#) of the treatment, its pros and cons, the crop/disease combinations it is most effective for, and the cost. They also explain how to [do it yourself](#) and the equipment you'll need.
12. Identify crop disease problems early, before they get out of control. Meg McGrath at Cornell's Long Island Horticultural Research and Extension Center maintains an extensive [photo gallery](#) of vegetable crop diseases that can help. If you're unsure, e-mail pictures of plant problems for diagnosis to Ann Hazelrigg at the UVM [Plant Diagnostic Clinic](#), or to your Extension plant pathologist in other states. Here are some [tips for submitting a 'digital sample'](#) for diagnosis. A live sample may eventually be needed, but you can save time by sending the right kind of images first.

13. Plan to take leaf samples from perennial fruit crops. Leaf analysis, or tissue testing, is the most reliable way to determine the nutrient needs of berries, grapes, and tree fruits so you can apply the correct types and amounts of fertilizer. (Soil tests are still need for soil pH and lime or sulfur recommendations). Samples should be collected in mid-summer using fully mature leaves before they start to senesce. This ~\$28 test is an excellent investment in optimizing fruit production. [Dairy One](#) performs this analysis and provides Cornell recommendations with results. [Penn State](#), [UConn](#), and many other land-grant universities also perform this analysis.

14. Optimize drip irrigation, by adding lines in high tunnels and in the field if the entire root zone of a crop is not getting wetted, especially during dry periods. This is most common on light-textured, sandy soils, where water tends to move down rather than sideways. [This article](#) has a couple of good images showing water movement over time in different textured soils.

15. Test your irrigation water. The smaller the rooting volume, the more important this is because small growing containers are less buffered than larger volumes (e.g. trays compared to pots compared to the field). But in any situation, testing irrigation water may avoid problems with pH, alkalinity, conductivity, hardness, chloride, and sodium. Penn State offers [guidance](#) and [irrigation water tests](#) start at \$35.

UMass offers an [irrigation water test](#) for Pythium, Phytophthora, and Rhizoctonia that may be useful if you irrigate from a pond that has potential to be a source of infection for crops

16. Install monitoring systems – at least for greenhouse temperature, and maybe much more. A simple temperature alarm can save you a bundle if the heat goes out, or vents aren't open when they should be. Keeping tabs on vegetable storage conditions is a good idea, too. Here's some information from UVM Ag Engineering about [monitoring options on the farm](#).

17. Buy a decent backpack sprayer. There are several battery-powered models that growers seem to like, based on a recent posting to the VVBGA grower listserv (another benefit of membership). These include the [Dramm BP4](#) series and the [My4Sons](#) sprayer. No endorsement intended, just saying.

18. Monitor spray coverage by using water sensitive cards. If you apply pesticides, organic or conventional, good coverage is important. Here's [an article with images](#) that shows how these cards can help you assess coverage. Here's a [video](#) with a lot more information.

19. Assign someone on the farm to conduct regularly scheduled pest scouting and monitoring practices so that problems are identified early, when they can still be managed. Michigan State University has a good [summary](#) of IPM scouting in vegetable crops, and UMass Extension has developed crop specific [scouting guides and forms](#). Going through your crops carefully once a week can help avoid major losses.

20. Take steps to prevent bird damage to blueberries, strawberries, and other small fruits and tree fruits. This comprehensive [fact sheet](#) from 2016 by UNH Extension summarizes available techniques and their effectiveness, including visual and auditory deterrents, repellents and toxicants.

If you're concerned about SWD damage as well, consider netting specifically designed for excluding that insect, which will also exclude birds. A comprehensive [blog post](#) on exclusion netting was published by Chris Callahan last year.

21. Develop an employee handbook. I say this every year because it's important and not as hard as it sounds. Many benefits derive from being clear about employee expectations. Use this [personnel policy generator](#) to edit pre-existing text that makes it easy to create your own farm employee handbook.

22. Keep pollinators in mind. Check out the UVM Extension pollinator support [web site](#) to learn about the many practical things you can do to support wild and managed bees and other pollinators, such as allow cover crops to flower longer, minimize ground disturbance, leaving woody debris and plant residues on the ground, using Integrated Pest Management to avoid pesticide use, and mowing less total area, less frequently, at a higher height (to allow more flowering.)

23. Adopt as many positive practices for labor management as you can. This [booklet](#) produced by ATTRA describes ten areas in detail; hopefully it will give your farm some new ideas for enhancing employee satisfaction and thus performance and retention.