PENNSYLVANIA CERTIFIED ORGANIC

Organic Bramble Production

Producing brambles such as raspberries and blackberries organically can be no more difficult than producing them nonorganically, but success demands careful planning, vigilant management, and attention to organic requirements. Growing and selling organic brambles requires the producer to follow National Organic Standards and to obtain certification from a USDA-accredited certifying body such as Pennsylvania Certified Organic.[1] (Getting involved with a certifier early in the planning process can help a producer avoid prohibited practices that could delay certification.) This guidance sheet addresses issues and practices specific to certification of organic bramble production. Information on bramble production in general can be found in many helpful guides such as those offered on the resource list at the end of this document.

Organic Standards for Bramble Production

The National Organic Standards[2] require certain practices in organic crop production and prohibit others. A producer who wants to grow and sell organic products must develop and submit an organic system plan, which details what the producer's management plan will be. Here are some particular issues bramble growers should consider when submitting an organic system plan and seeking organic certification:

Site Selection: Organic production requires that the ground be free of prohibited substances for at least 3 years.[3] If the current owner has owned the land for less than 3 years, he or she must obtain signed statements of management history from the previous owner or manager.

Dave Sandy, a horticultural research assistant at Penn State University, picks organic raspberries at the research plots at Rock Springs, Centre County.

Bed Preparation: Some growers choose to plant in raised beds to ensure ground that is well drained and fertile. If building enclosed beds, the producer must be aware that lumber treated with prohibited chemicals is not permitted in organic production[4] (unless it was already in place before the producer applied for certification); instead producers should consider such alternatives as lumber species that are resistant to decay (e.g., black locust or Eastern red cedar) or plastic (e.g, recycled plastic lumber or plastic/wood composite lumber).

Planting Stock: Nonorganic planting stock may be used to produce a perennial crop. However, such perennials must be managed organically for a minimum of one year before producing an organic crop.[5] In addition, it is important to use only certified, disease-free, virus-indexed stock to reduce the risk of introducing viruses into the system. Root cuttings or plants are often used. Because regular rootstock can be contaminated with viruses or insects, some growers prefer to use tissue culture plugs. Although using tissue culture is more expensive, it helps producers avoid the problem of virus-infected stock.

Trellising: While some varieties of red raspberries are compact and don't require a trellis, most benefit from some type of support system. Trellising allows better exposure to light and air circulation for the plants; holds the berries in place to reduce wind damage; and facilitates harvest by lowering stoop labor effort. With trellised bramble

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Graduate student Graham Sanders in a summer-bearing raspberry plot dedicated to Penn State University brambles research project "In Search of Sustainable Botrytis Management: A Research and Extension Effort".

plants, cleaner picking is possible, resulting in fewer overripe berries, and thereby lessening the attraction to beetles. Many materials may be used for a trellis, including PVC piping or metal posts, but wood treated with prohibited chemicals must not be used in organic production for new installations or replacement purposes in contact with the soil.[6] Certain copper products and boric acid may be used in wood treatments, but compounds such as CCA (copper chromium arsenate), pentachorophenol and creosote are prohibited.

Mulching: Mulch serves as an important tool in controlling weeds and retaining moisture. Straw or other natural materials used for mulch need not be organically produced but they must not contain substances prohibited under the National Organic Standards. Some producers use pasteboard or cardboard boxes to mulch. Mulching with fully biodegradable materials is allowed by the standards.[7] Certifiers might not allow certain paper mulches if they contain prohibited substances such as fungicides. In addition, organic producers may use newspapers or other recycled paper (without glossy or colored inks) or plastic mulch and covers (petroleum-based other than polyvinyl chloride (PVC)).[8]

Weeding: During the growing season, it is important to cultivate regularly around plants, but not more than 1 inch deep, as the root system of raspberries and blackberries is quite shallow. A scuffle hoe may prove useful. Because weeds prevent adequate air circulation, most diseases are generally more serious in plantings with poor weed control than in those with good weed control. Synthetic herbicide control of weeds is generally not allowed in organic production, although soap-based herbicides are allowed in non-food-crop areas for use in farmstead maintenance (roadways, ditches, rights of way, and perimeters).[9] Organic producers who have mulched heavily often rely on hand weeding or cultivating. Planting systems that allow for annual mowing also reduce perennial weed buildup.

Pruning: Pruning is critical for good organic berry production — it helps maintain adequate air circulation and prevent disease and insect outbreaks. Once plants have been pruned to remove virus-infected, diseased, broken and dead canes, all infected pruning waste should be removed from the field and destroyed. Burning to suppress the spread of disease is allowed in organic systems.[10] Primocane fruiting raspberries produce fruit in late summer on first-year canes, as well as in the spring on two-year-old canes. These types are often managed by mowing to the ground in early spring and sacrificing the spring harvest in favor of the higher quality fall harvest.

Soil Fertility: Organic producers must manage crop nutrients and soil fertility through rotations, cover crops, and the application of plant and animal materials, and yet these materials must be managed in a manner that does not contribute to contamination of crops, soil, or water.[11] Before using a fertilizer, producers should verify that it is allowed for use in organic production. Raw manure may be incorporated into the soil around the plants, but the timing of manure applications is very important (it cannot be applied to plants within 120 days of harvest). If manure is fully and properly composted according to the NOP standards, it can safely be applied at any time of the season.[12]

Watering: Berries require significant amounts of water, generally 2 inches per week during the growing season and up to 4 inches per week during harvest, but overly wet soils can promote problems with disease. Drip irrigation is preferable to overhead sprinklers—watering the roots and not the leaves minimizes disease. Any inputs applied through the irrigation system, such as fertilizers, must be approved for organic production.

Preventing and Managing Diseases and Pests: Because the materials allowed to treat diseases and pests are limited in organic production, it is especially important to prevent and manage bramble diseases in the following ways:

- Carefully prepare site
- Choose disease-resistant cultivars
- Use practices to control disease, such as frequent picking, pruning, and insect removal
- Keep plants in good vigor through weed control, good fertility, and moisture management
- Develop the knowledge to identify and understand major bramble pests and diseases
- When needed, apply allowed fungicides or biological control agents in a timely manner

While some disease and pest treatments are approved for use in organic production, they should be used as a last resort. Picking frequently is the best preventive measure against berry rot and fungal diseases. Organic growers often find that, if they don't spray, naturally occurring enemies of aphids will eventually exert control. Allowed fungicides are effective in controlling a number of diseases, but not all. Before using any disease or pest treatment product, growers should always determine whether it is approved for use in organic production.

Harvesting: Maintaining a tight harvesting schedule to reduce the presence of overripe fruit will greatly suppress gray mold. In a combined organic and non-organic operation, separate picking containers and segregated storage are needed.

PCO-certified farmer Mike Byers, of Demeter's Garden in Spring Mills, PA, discusses different varieties of raspberry bushes at a field day on his farm in August 2005.

Processing: Raspberries and other bramble fruits are quite perishable; fruit not sold within 24 hours of picking will likely need to be frozen or processed. To sell organic processed products, a certified organic grower may be required to be certified as a processor, which requires an additional organic system plan.

Conclusion

Organic production of bramble fruits offers a number of advantages to producers and consumers. Growing brambles without pesticides is healthier for farm workers and encourages healthier soil and water. Brambles produce delicate fruits that deteriorate quickly with washing, and organic fruit produced without pesticides need not be washed as vigorously. Organic farms offer an ideal site for pick-your-own operations as parents need not be concerned about children having contact with pesticide residues.

Organic production of any crop requires the producer and certifier to work together closely to ensure that practices and materials used comply with the National Organic Standards. Some certifiers publish a list of materials allowed for use in organic production.[13] It is important to consult such a list when looking for allowable materials to be used for fertilizer and pest, weed, and disease control. The Organic Materials Review Institute is a well recognized non-profit organization that reviews organic products nationwide and provides a frequently updated list at www.omri.org.

This Organic Guide was developed and produced by Pennsylvania Certified Organic with funding from EPA's Strategic Agriculture Initiative Program. PCO is USDA-accredited non-profit organic certifying agency that educates and certifies growers, processors, and handlers of organic products.

References

1. A list of USDA-accredited certifiers can be found on the National Organic Program website at: www.ams.usda.gov/nop/Certifying Agents/Accredited.html
2. 7 CFR Part 205, available at www.ams.usda.gov/nop/NOP/standards/FullRegTextOnly.html
3. §205.202(b)
4. §205.206(f)
5. §205.204(a)(4)
6. §205.206(f)
7. §205.206(c)(1)
8. §205.601(b)(2)
9. §205.601(b)(1)
10. §205.203(e)(3)
11. §205.203(b) & (c)
12. §205.203(c)(1)(ii)&(iii)
13. PCO's materials list is available to clients free of charge.

Resources for Organic Bramble Producers in Pennsylvania and the Mid-Atlantic Region

■ **Integrated Management of Bramble Diseases**
Organic Small Fruit Disease Management Guidelines prepared by Mike A. Ellis, Professor, and Mizuho Nita, Graduate Research Associate, Department of Plant Pathology at the Ohio State University/Ohio Agricultural Research & Development Center.

Available for download at: www.oardc.ohio-state.edu/fruitpathology/organic/brambles/home.html or by contacting The Ohio State University, Extension Publications Office, 385 Kottman Hall, 2021 Coffey Road, Columbus, Ohio 43210-1044, 614-292-1607.

This 50-page organic guide includes a detailed description of diseases and pests that plague brambles; provides photos of diseased plants, roots, and berries; and offers methods for preventing and treating diseases.

■ **Organic Culture of Bramble Fruits**
Horticulture Production Guide, by George L. Kuepper, Holly Born, and Janet Bachman, NCAT Agriculture Specialists, Appropriate Technology Transfer for Rural Areas (ATTRA), June 2003. Available for download at www.attra.ncat.org or by calling ATTRA at 1-800-346-9140. Both ATTRA and PCO can provide free copies upon request.

This 20-page guide addresses the nuances involved in the production and marketing of organic bramble fruit, leaving out many of the basics of bramble culture that are the same under organic and conventional management.

■ **The Mid-Atlantic Berry Guide for Commercial Growers**
Kathleen Demchak, Coordinator. Penn State College of Agricultural Sciences, Cooperative Extension, 2005. Available for download at http://pubs.cas.psu.edu/ Publications.asp. Order for $15 (plus tax in PA and P/H) from Penn State's Publications Distribution Center, 814-865-6713.

This 212-page, full-color guide produced by Penn State in cooperation with Rutgers, U. of Delaware, U. of Maryland, Virginia Tech, and West Virginia U. provides general information on pre-plant considerations, soil management and nutrition, and pest management, as well as specific information for planting strawberries, blueberries, brambles, gooseberries, and currants. Includes a discussion of organic production.

■ **Red Raspberry Production**, *Agricultural Alternatives*
prepared by Kathleen Demchak, Jayson K. Harper, and George L. Greaser, Penn State University College of Agricultural Sciences, Agricultural Research and Cooperative Extension, 2001.

Available online at http://agalternatives.aers.psu.edu, or by contacting Penn State's Publications Distribution Center, 814-865-6713.

A five-page fact sheet that includes sections on marketing, production considerations, pest control, harvest and storage, and sample budgets.

■ **Fruit Production for the Home Gardener**
Robert Crassweller, Coordinator. Penn State College of Agricultural Sciences, 2006.

Available online as a searchable webpage: http://ssfruit.cas.psu.edu Order for $12 (plus tax in PA and P/H) from Penn State's Publications Distribution Center, 814-865-6713.

While not focused exclusively on organic production, this guide provides a chapter with helpful information on brambles, including recommended raspberry cultivars for Pennsylvania, as well as pest and disease identification, management and control strategies.

■ **Bramble Production Guide**
(NRAES-35) (1989). Edited by M. Pritts and D. Handley. 189 pp.

This guide was planned and written by seventeen specialists from seven states. Marvin Pritts, professor of fruit and vegetable science at Cornell University, and David Handley, vegetable and small fruit specialist with University of Maine Cooperative Extension, edited the guide.

A revision is planned for 2006.

Can be ordered for $45.00 per copy from NRAES, Cooperative Extension, PO Box 4557, Ithaca, New York 14852-4557. The shipping and handling charge is $6.00 for a single copy within the continental United States. New York residents, add sales tax.

For more information see www.nraes.org/publications/nraes35.html.

This book in loose-leaf binder format provides detailed information about all aspects of bramble production. Excellent illustrations on pruning and trellising. Other topics discussed include site selection and preparation, plant selection, pest and disease management, spray technology, harvesting and handling, and marketing. The guide contains 15 chapters, 10 pages of color illustrations with over 115 photos, a glossary, a disease diagnostic key, a list of supplementary materials, and an extensive reference list.

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