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OFF-SEASON MANAGEMENT TASKS AND CONSIDERATIONS FOR SELECTED SMALL FRUIT CROPS

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Late fall, winter and early spring is an important period of management for small fruit crops such as strawberries, blackberries and raspberries, blueberries, and currants/gooseberries. Paying attention to management details during this time helps to ensure a successful crop the following season.

This article touches on the primary management issues related to these crops during the "off-season" months. Grapes will not be addressed because of the greater complexity of issues affecting commercial vineyard management, and readers are encouraged to visit the Virginia Viticulture Resources web site for in-depth information:
<http://www.vaes.vt.edu/winchester/grape/>.

Strawberries:

Strawberries will continue vegetative growth and development of flower buds under short days and mild fall temperatures, until growth is halted by significant freezing temperature events, and dormancy sets in. For the matted row system, an extended fall season allows growth and increased flower number for daughter plants, and in the plasticulture system, increased crown and floral development in the fall-set plants. In matted rows and between plasticulture beds, fall to early winter is a good time to apply a pre-emerge herbicide to control winter weeds such as napropamide (Devrinol) or terbacil (Sinbar), and once the plants are sufficiently dormant, 2,4-D may be applied over the field as a post-emergence control. In warmer areas of the state, and in plasticulture, where true dormancy is questionable, 2,4-D injury may occur, and growers should be careful with its use over the tops of berries.

Matted row plantings in colder regions of the state should be mulched with straw when temperatures regularly start falling in the 20-30F degree range (usually mid to late November). Apply clean wheat straw to a depth of 2-4 inches. Straw will help to insulate the planting from temperature extremes and lessen root damage caused by frost heaving of soils, along with suppressing some weeds. Make sure herbicide applications are made before the straw is spread.

Depending on location in the state, plasticulture plantings may need protective covering with a floating row cover. Unlike matted row berries, because of varieties used and the nature of the plasticulture system (covered, warm soils), plants generally undergo a "quasi-dormancy" during the coldest part of the winter, and are quicker to resume growth than matted row berries in the early spring; in some situations they may grow slowly all winter. Recent studies have shown that limited fall application of a row cover will help crown growth and fall flower bud set, and late winter/early spring application will help protect early growing and flowering plants. The use of row covers in plasticulture plantings has been the focus of much research, and their proper use in fall, winter and spring is very site specific.

Commercial pest management and weed control recommendations for small fruit crops are found in the Horticulture and Forest Crops PMG, VCE publication # 456-017, which can be obtained through your local county extension office.

Brambles:

Like strawberries, pre-emerge herbicides should be applied to bramble plantings in the fall and/or spring to control winter weeds and early spring weeds. There are several compounds available: simazine (Princep), norflurazon (Solicam), terbacil (Sinbar) and oryzalin (Surflan). Each has specific weed spectrums and rate/use restrictions that should be understood before application.

For floricanes blackberries and raspberries, pruning can be done once plants are dormant, late fall through early spring prior to bud break, with very early spring a more preferable period. If not done during the summer, spent floricanes should be removed first. The primocanes left should be thinned to a desirable count depending on bramble type, age and vigor of the planting. In non-suckering, semi-erect blackberries, generally 6-8 canes should be left per plant. In hedgerow systems, for erect blackberries, leave 3-4 canes per linear foot, and on average 1-2 canes per foot with red raspberries. Always remove weak and insect damaged canes first.

Red raspberries are generally not headed back to maximize flowering, however if canes are too tall, they can be trimmed to 5-6 feet, or pruned past the point of any occurring winter injury. If no support is provided, canes can be cut back to 3-4 feet for greater stability as they flower and fruit in the spring. Black raspberry and blackberry canes can be headed back to bring them within bounds of the support trellis, and lateral branches should be shortened. Less in vigor, black raspberries laterals should be trimmed to 8-12 inches or 8-12 buds/lateral, while erect blackberries and purple raspberries should be trimmed to 12-18 inches or an average of 15 buds/lateral. The laterals of large, semi-erect

thornless types can be left alone or trimmed to 1.5-2 feet in length, depending on vigor and size.

For primocane raspberries which were fruited on the current seasons growth, the old canes can be mowed at any point from late fall through early spring prior to shoot re-growth. Select a time when soils are relatively dry to lessen compaction, and mow canes as close as possible to the soil surface. Follow-up mowing with a pre-emerge herbicide application to the newly exposed soil surface.

There has been some research to indicate that placement of row covers in the spring may advance growth of primocane shoots in the spring. Growers may want to experiment with this technique to advance fruiting dates, and thereby improve yields in late cultivars.

Lastly, just prior to bud-break and before shoots are 1/2 inch long, liquid lime sulfur (at 24-31%) or a Bordeaux formulation (copper sulfate plus hydrated lime) should be applied to reduce the potential for anthracnose infection of the canes.

Blueberries:

The key off-season tasks for blueberry plantings is application of pre-emerge herbicides where warranted, appropriate pruning, and supplemental application of mulch. Registered herbicides for blueberries are similar to brambles, and should be used to target specific weed problems. On older mulched beds, encroachment of winter weeds in the decaying mulch should be monitored. Supplemental mulching should be done when bare soil begins to show through. Apply 4-6 inches of fresh mulch in a circular area under new plants, and in older plantings in a continuous strip the length of the row, and out to, or just beyond the canopy of the plant. Where mulching is not practiced in the warmer parts of the state and in rabbit eye plantings, increased attention to weed control is needed.

Blueberries in general need minimal pruning until the third year after planting. "Clean-up" pruning, dead branches, and short branches of low vigor near the surface should be removed every year. Once plants are 5-6 years old, it is important to begin renewal pruning and removal of some of the oldest canes each winter. In general for high bush types, an ideal plant framework is 5-7 older canes, along with 1-2 newer canes at any given time. Once this level of growth is reached, 1-2 older canes can be removed annually at ground level, and those should be replaced by new canes. For increased fruit size, detail pruning can be done on the tips of fruiting branches, by thinning/cutting them back to 4-8 fruit buds/branchlet. This will reduce yield overall but create noticeably larger berries. Fruit buds can easily be distinguished from vegetative buds by their plump size.

For mummy berry and phomopsis twig blight control, make plans to apply a delayed dormant (late dormant) application of lime sulfur and an early spring application of Ziram fungicide when bud scales begin to loosen (and again 7 days later). Consult the Small Fruit Spray Recommendations for further detail and caution using lime sulfur and other fungicides in blueberries.

Currants and Gooseberries:

Ribes species (currants and gooseberries) will require attention to weeds, pruning and disease control during the winter months. As there are limited herbicides available for use in Ribes, the use of an organic mulch will help to control weeds, and for this drought sensitive crop, also help to retain soil moisture during the next growing season. Apply straw or composted manure, or both, in the fall to a depth of 3-4 inches. Coarse wood chips can also work well, but apply only a 1-2 inch layer. Supplemental nitrogen may be needed in the spring to off-set the seasonal breakdown of wood chips.

Currants and gooseberries need to be pruned annually. Fruits develop from buds near the base of 1 year old shoots, and will continue to fruit on "spurs" on older wood for up to three years. Pruning involves an understanding of fruiting habit, focusing on retention of fruiting wood and removing unproductive, older canes at the ground level. Ultimately, a mature bush will be pruned to leave 4-5 three-year old canes, 4-5 two-year old canes and 4-5 one-year old canes. For a new planting this is a gradual process until plants reach maturity. After the first year, leave 6-8 strong canes, after year two, leave 4-5 new canes and 4-5 two-year canes. By the third year a full complement and blend of cane ages will be achieved. Additional selective pruning includes removing any dead canes, and canes very low to the ground, and weaker, bent and broken canes in the center to keep the bush open.

An important disease control measure with currants and gooseberries is to apply lime sulfur or Bordeaux formulation (at rate mentioned for brambles) to canes just prior to bud swell and break. This will help to reduce the incidence of foliar and cane diseases in the coming season. Also when pruning, be sure to remove canes that are swollen or knotted, which may harbor over-wintering, cane boring insects.