



The Berry Basket

Newsletter for Missouri Small Fruit and Vegetable Growers

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From the Editor

By Marilyn Odneal

It seems as though everyone is settling down for the winter in this issue. Winter weed control, putting the garden to sleep, winterizing both plants and people are among our topics for fall. Once you get the garden tucked in and your operations squared away, put some time aside for yourself to reflect on the past year and plan for the new one.

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Top 10 Reasons to Grow Blueberries

by Ben Fuqua

The first commercial blueberry plantings in Missouri were established in the mid-1970s. In less than 30 years, the highbush blueberry has become a favorite fruit of both growers and consumers. While income (or potential income) is always the underlying goal when starting any new venture, growers often express other reasons for selecting blueberries as a crop to grow. Borrowing a popular gimmick from one of the late-night television shows, the following reasons made my "top 10" list.

Reason # 10. Colorful plants. The highbush blueberry is a perennial deciduous woody plant, which exhibits an array of colors throughout the year. Pink buds, opening to a multitude of white blossoms in the spring, dark-green summer foliage adorned with large, blue-colored berries, plus the brilliant red leaves followed by bright yellow- and red-colored canes during the fall and winter months provides colorful, year-round scenery.

Reason # 9. Easy to Grow. While some veteran growers may dispute this reason, highbush blueberry plants are relatively easy to grow IF adequate planning and preparation has been done. Pre-plant operations such as site selection, soil preparation (including soil pH adjustment), planning the irrigation system, selection of varieties, and developing marketing strategies are essential when starting a blueberry planting. After planting; mulching, pruning, fertilizing, irrigating, and weed control become necessary cultural practices for any successful blueberry enterprise.



Highbush blueberries are one of the easiest fruit crops to harvest.

Reason # 8. Great Variety Choices. Several varieties (cultivars) of highbush blueberries are recommended for planting in Missouri. While plants of different varieties vary slightly in physical properties (size, growth pattern, new cane production) and in berry characteristics (number, size, taste, color, maturity dates), they produce high yields of quality fruit. Varieties differ in ripening dates, with early-ripening varieties normally producing the first ripe berries in early June; mid-season varieties begin ripening in late June; and the late-season varieties in early to mid July. Since most of these varieties produce ripe berries for about 4 weeks, the actual berry harvest can be as short as 4 weeks or extended to 12 weeks by selecting varieties with different times of ripening.

Reason # 7. High Yields. Healthy, mature, well-managed highbush blueberries should produce high yields of quality fruit for many years. Yield data from over 25 years of research in Springfield show a rapid yield increase during the first 5 to 6 years of production, then a general leveling off in yield as the plant matures. While minor fluctuation in yields occurred from year to year due to adverse weather conditions and other cultural problems, the plants, in general, have continually produced good yields. Healthy, mature highbush blueberry plants in Missouri should be producing from 6 to 12 pounds (1 to 2 gallons) of ripe berries per plant by the fifth or sixth year of production. While some plantings require a longer time to reach this level of production, several growers in Missouri have

reported yields exceeding 12 pounds per plant by the fourth year of harvest.

Reason # 6. Easy to harvest. Highbush blueberries are one of the easiest fruit crops to harvest. Most blueberries in Missouri are harvested by hand rather than by mechanical pickers. Ripe berries should be rolled from the cluster into the palm of the hand with the thumb and not plucked or pulled from the fruit cluster. Mature blueberry plants in Missouri generally range from 5 to 8 feet in height and most of the berries are located on the outer branches and shoots, thereby placing most of the ripe berries in easy reach of pickers. Because of their compact size, ladders or other climbing devices are not needed to harvest blueberries. Blueberry plants do not have thorns, very few (if any) insect problems, and the ripe berries are easy to distinguish by their blue color.

Reason # 5. Easy to market. Blueberries have rapidly become a favorite fruit crop among consumers. To date, demand for Missouri grown blueberries has far exceeded the available berries, making marketing of fresh blueberries relatively easy. Missouri growers sell mostly fresh berries, either through U-pick, on-farm stands, or local Farmers' Markets. Some growers have extended their markets by offering "value-added" blueberry products, such as jams, vinegars, sauces, rolls, cakes, pies, etc.

Reason # 4. Large Berries. Consumers usually rate berry size as the #1 factor when selecting blueberries for use as fresh fruit. Consumers like the large-sized berries produced by the highbush blueberry varieties grown in Missouri. Blueberries in the 2 to 3 gram-range (150 to 225 berries per pound) are common during the first 2 to 3 weeks of harvest, with berries becoming somewhat smaller near the end of the harvest season. Berry size is influenced by both variety (genetic) and cultural factors. Proper pruning of plants and providing adequate water during fruit development are two major keys in producing large berries.

Reason # 3. *Multiple Uses of Berries.* The large, flavorful, blueberries are great as fresh fruit or processed into delicious pies, cakes, muffins, jams, and other treats. Fully ripe blueberries have sugar contents (sweetness) as high as 14 to 16%, making them popular as a tasty snack or delicious dessert. Fresh blueberries can be stored in a refrigerator for up to 2 weeks without serious deterioration. (One consumer reported leaving blueberries in the refrigerator for 4 weeks, and said they were still delicious!). Blueberries can also be frozen for use at a later time.

Reason # 2. *Blueberries are Healthy.* Blueberries are touted as one of the healthiest fruits you can eat. According to USDA analyses, one-half cup of blueberries has nearly 2 grams of fiber, contains less than 0.3% total fat, 0% cholesterol and only 42 calories. Blueberries are a rich source of Vitamins A and C, and contain significant amounts of calcium, iron, phosphorus, potassium and magnesium. In a USDA study at Tufts University, blueberries ranked number one in antioxidant activity when compared to 40 other commercially available fruits and vegetables. Antioxidants have been shown to be beneficial in reducing cancer, heart disease and other effects of aging. Blueberries have also been shown to be beneficial in fighting urinary tract infections and to improve eyesight.

And the # 1 Reason. *Meeting Great People.* Missouri blueberry growers are great people to be associated with. They readily share ideas, problems, experiences and information about growing blueberries with others. Growers formed the Blueberry Council of Missouri, an organization devoted to educating the consumers about blueberries and to promote Missouri grown blueberries. They participate in numerous events throughout the year, often serving tasty blueberry products at conferences, dinners, fairs, and other meetings. The success of blueberries as a “new” fruit crop in Missouri can be traced directly to the efforts and expertise of these fine people.

Blues News

by *Earnie Bohner*

The Blueberry Council participated in the Governor’s Conference on Agriculture last year. This year the conference will be held November 17-19 at Tan Tar A, Lake Ozark, Missouri. For information on the Blueberry Council and its plans for the Governor’s Conference, contact:

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Winter Weed Control

by *John Avery*

Fall is here, the fruit is harvested, and it is time to clean up the plantings. This is the time of the year to evaluate your weed problems and plan for the coming year. Some of the weeds, which cause problems in the spring and early summer, actually germinate in late summer to early fall. These weeds need to be dealt with during the winter. They can compete with fruit plants early in the growing season, tying up nutrients and moisture that may be needed at that time. What are some of the questions we need to answer to formulate a plan of action? **First**, what are the weeds we are dealing with in the planting? **Second**, what methods do we need to use for best control in the crop? **And last**, when do we need to control the weeds that are present in our fruit planting?

There are basically two types of weeds which we have to deal with on a yearly basis. The first are the summer weeds. They generally germinate in spring, grow during the summer and produce a seed crop from midsummer through fall. I will not be dealing with these weeds at this time. The second are the winter weeds that generally germinate in late summer, grow fall to early spring, and then produce a late spring/early summer seed crop. Examples of these weeds are henbit (*Lamium amplexicaule*), dandelion (*Taraxacum officinale*), Black medic

(*Medicago lupulina*), pepperweed (*Lepidium virginicum*), annual bluegrass (*Poa annua*), and cheatgrass (*Bromus tectorum*). Some plants might be beneficial between the rows but are competitive when found in the row with the fruit plants for example the clovers (*Trifolium* spp.).

The other classification we need to consider is perennial versus annual weeds. Annual weeds live one year and will be easier to control than the perennial weeds that live two or more years. Our strategy for dealing with the weeds in fruit crops will depend on the composition of the weed population. The chemicals we choose to use or not use will depend on what weeds are present in the planting. Thus it is important to identify the weeds present and to know whether they are annual or perennial.

Other plant characteristics of weeds need to be considered in the overall control strategy. Such characteristics as height, overall size, competitiveness, growth cycle, and rooting depth can have effects on the fruit crop. Plants such as cheatgrass, pepperweed, and sweetclover (*Melilotus* spp.) grow fairly tall, mature late in spring or early summer and can be very competitive with the crop while interfering with pruning, training or harvest. Other plants like henbit or annual bluegrass are short, mature early and are not very competitive. These plants may be unsightly but are otherwise beneficial in the planting by controlling erosion, keeping nutrients in the top layer of soil, taking up excess moisture in the early spring or inhibiting germination of other weeds in the spring. Dandelions can be a problem because they flower with many of the fruit crops and are more attractive to pollinators. The growth characteristic of each weed species will need to be studied in order to develop the best overall control strategy for your crop.

The second question is “What do we want to use to control weeds in our crop?” There are three primary methods of controlling weeds. The first is mechanical removal of the weeds. The old trustworthy hand hoe works for a few weeds or a small planting. Other devices include tractor mounted weed hoes or weed badgers. A newer concept is the use of fire to burn weeds down.

These devices use a torch with a portable propane gas tank pulled behind the tractor.

The second method is the use of postemergent herbicides. There are two basic types of postemergent herbicides to use. The *contact* type kills any green tissue the herbicide contacts. The *systemic* type is translocated within the plant killing the tops as well as the root systems. The systemic types include herbicides that kill only plants within the grass family, herbicides that kill only plants within the broadleaf family, and herbicides that kill both. Glyphosate and sulfosate are systemic herbicides that kill both grasses and broadleaf weeds. The use of any particular herbicide will depend on the type of weeds that are present. Emerging seedlings of annual or perennial weeds are best controlled by the use of contact herbicides while the presence of mature perennial weeds may require the use of a systemic herbicide. A note of caution here: systemic herbicides will do damage to the crop if any green tissue is contacted. This can be severe when the herbicide is sprayed late in the fall. For winter weed control, systemic herbicides should be used only in the winter after the fruit crop is dormant and leaves are no longer present. For some crops like the brambles, systemic herbicides should never be used because canes can take up the herbicide even when dormant.

The third method of weed control in crops is the use of pre-emergent herbicides. These herbicides work by creating a chemical barrier to the germinating weed seedling. As the seedling grows through the barrier it takes up the chemical and will be killed. There are a number of pre-emergent herbicides on the market. Each has its strengths and its weaknesses for the weed species it will control. It is very important to identify the species that are causing problems in the fruit planting and then study the labels of the herbicides available for the crop to determine which herbicide to use. Over time the composition of weed species causing trouble will change and the use of herbicide(s) will need to change too. As a general rule it is best to rotate the use of several suitable pre-emergent herbicides on an annual basis. This will help to control more of the weeds without letting one or two build up large populations. Pre-emergent

herbicides are a good choice for season-long control.

The timing of herbicide sprays in the fall or winter is crucial to the success of a control program. Cool season weeds will not grow all winter and may even appear to be dead during the cold days of December and January but will re-appear and grow during late winter. Generally a fall application of a contact herbicide will take care of emerging annual or perennial species and may help to weaken established perennial plants. With contact herbicides there is not much danger of hurting the fruit crop if some spray contacts green tissue. But as stated previously, systemic herbicides can do major damage at this time of year if green tissue is contacted because of translocation to the root system. It will be better to wait until late winter (February) to apply systemic herbicides, which can be applied as a tank mix with your spring/summer pre-emergent herbicide program. Where the predominant weed species are annuals such as henbit or annual bluegrass you may want to leave

them till spring to help with winter soil erosion in the planting especially where the crop is planted on a slope. Keep in mind that these annuals need to be allowed to mature a seed crop every second or third year if you wish to use them to your benefit. When more competitive weeds predominate then control needs to take place before the fruit crops begin to break buds in the spring so that systemic herbicides can be used to good advantage.

Use the fall season to develop a good weed control program for the next growing season. Identify your weed problems, study herbicide labels, and develop a spray program that will help reduce competition with your fruit crop. Also, use the cool beautiful days of fall to use that hand hoe to your benefit.

Pruning Grapevines

by *Susanne Howard*

Winter pruning can be a fruit grower's least favorite chore. It has to be done no matter what nature decides to throw at you. You can gain a much better attitude about grape pruning if you keep in mind your pruning goals and the steps involved to achieve your goals.

The way a plant is pruned depends largely on the training system used, especially where grapes are concerned. Home growers often train their plants to cover an arbor or other type of support and they might not be concerned with getting as much fruit as possible from their plant. Pruning in this case should consist mainly of shortening canes to stay within the trellised area and out of the way, and of removing some canes entirely (cut them off right at the trunks) to "thin out" the area covered by the vine.

For commercial growers or home growers who wish to have a consistent crop from year to year, it is important arrive at and maintain a balance between fruiting and vegetative growth. Leaving too many shoots to grow on a vine might increase yield for the first year, but the plant will have a very dense canopy.

This dense canopy will restrict airflow and light exposure on the inside of the canopy. If you have

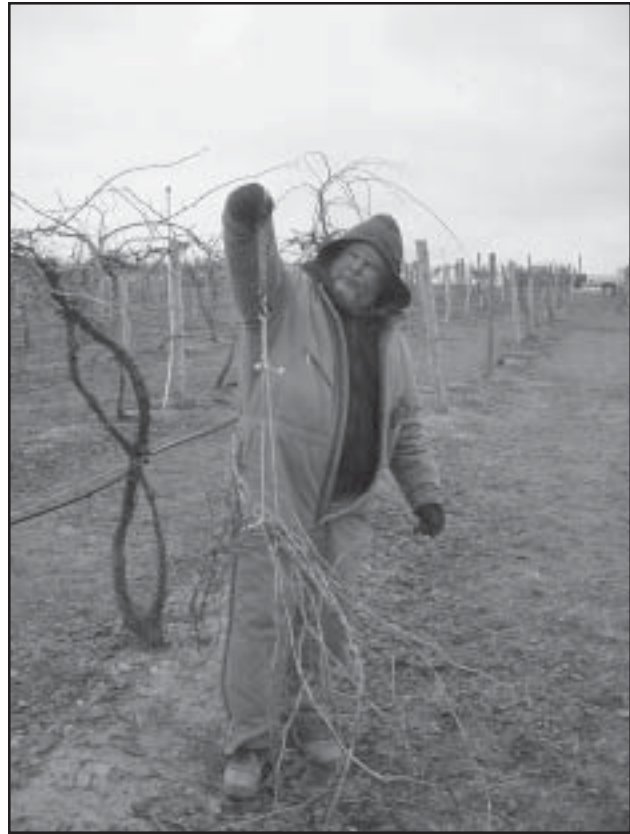


Susanne demonstrates pruning grapes in winter.

ever seen a plant with such a canopy, you might have noticed that the leaves on the inside, which were covered by several layers of other leaves, were yellow or had even dropped off. These leaves cannot produce food for the plant.

The effects of the overly dense canopy do not end there, however: the buds in the axils of the shaded leaves are also shaded. These buds will be less fruitful because of the shading, and since they will produce next year's crop, the yield will be lower. And what happens to the fruit? It is also covered by several layers of leaves, and might ripen more slowly. Red grapes might have less intense coloring. Worst of all, there is no air movement under all those leaves, keeping the fruit wet for a long time after each rainfall. So you have warm, dark, wet conditions that are just right for fungus growth. And there are lots of different fungi out there to take advantage of those conditions. This all translates into more disease on the fruit and on the leaves. So you think spraying is the answer, right? Well, consider this: these overlapping leaves, especially if still slightly wet, act like shingles on the roof of your house, whose main purpose it is to keep water (or the spray solution) out! In other words, overly dense canopies can reduce the effectiveness of any sprays that you apply, simply by preventing the spray from reaching its intended target. To prevent the growth of dense canopies, grapes are pruned until it seems like there is 'hardly any wood left'!

As mentioned before, the way you prune is determined by the training system. The most commonly used training system in Missouri is the high cordon system, which is a spur-pruned system. If you are using this system, you should have one or two trunks trained straight up and perpendicular to a wire at about 6 feet from the ground where two horizontal cordons, supported by the wire, start. This is your permanent 'framework' that always remains in place, unless a trunk or cordon has to be replaced due to injury or other reasons. All canes grow from the cordon, and when they are trimmed back, they are called spurs, giving the pruning method its name. During winter pruning, most canes are completely removed, cut off flush with the cordon. All dead, diseased, broken, very thin or very thick and long canes are removed like that.



Weighing the one-year-old canes that grew last summer to determine how many buds to leave to achieve balance.

The remaining canes are then thinned out further, until only 4-5 canes per foot of cordon remain. Half of these canes are then shortened to about 5 nodes (or buds) each and are called fruiting spurs. When counting the buds, the one closest to the cordon does not count (it will most likely not be fruitful). The other half of the canes are shortened to 2 nodes. These very short spurs are called renewal spurs. The shoots growing from them will eventually be next years fruiting spurs. The buds on these renewal spurs are also not counted when determining the total number of buds left on the plant.

To figure out exactly how many buds to leave on a plant, pruning formulas have been developed from experience in growing the same cultivar of grape for many years. The numbers used in these formulas are different for different cultivars of grapes. They reflect factors like the number of clusters borne per shoot, the size of the clusters and whether the buds directly on the cordon will bear fruit. An all-purpose example for the pruning formula is 20+10.

To use any pruning formula, the weight of the one-year-old canes has to be determined. This gives you an idea how vigorously the plant was growing last year. The more vigorous, the more buds will be left on the plant. If your plant had a pruning weight of 2 ½ pounds and you are using the general formula of 20 + 10, 20 buds are left on the plant for the first pound of pruning weight, determined by the first number in the pruning formula. Then there are 1 ½ pounds of additional pruning weight to consider: the 1 ½ pounds are multiplied with the second number in the formula, in this case 10, resulting in 15 more buds to be left on the vine for a total of 35 buds. If 5 buds were left on each fruiting spur, this means there should be 7 fruiting spurs left on the plant, 3 and 4 to each side of the trunk, and these 3-4 spaced out as evenly across the length of the cordon as possible. For each fruiting spur, one or two renewal spurs should be left on the plant also.

To use the formula in the following table, rough prune the plant, leaving several more fruiting spurs on the plant than will be needed. Weigh the one-year old wood that you pruned off. Use the first number for the first pound of prunings, multiply the remaining weight by the second number. Add both numbers together and 'fine tune' the number of buds on the vine.

The table below lists the pruning formula for several cultivars:

Cultivar	Pruning Formula
Seyval blanc	5 + 10
Vidal blanc	15 + 10
American varieties (Norton, Concord, Niagara, and others, very vigorous)	30 + 10
Other American hybrid cultivars	20 + 10

Of course in most vineyards not every single plant will be adjusted this way. For large plantings, divide plants of one cultivar into uniform groups. Weigh a few plants for each group and average the resulting number of buds. Then adjust the number of buds

accordingly, using your own best judgment to estimate if a given plant is more or less vigorous than the average, and adjusting the number of buds accordingly up or down.

Considering the temperature fluctuations common in Missouri in late winter/early spring, the rough pruning could be done early in the winter and the 'fine tuning' or adjusting of the numbers of buds left, could be done in late winter, even as late bud break. This way there is a 'reserve' of buds available in the case of severe freezes around the time of bud break. These late freezes often kill more buds than the low temperatures occurring earlier in the winter.

Hopefully this introduction to pruning should make the process just a bit less confusing. Now, if someone could please appeal to Mother Nature, maybe we could get through the pruning process without having to prune icicles from the plants at the same time

Putting the Garden to Sleep *by Jennifer Barnes*

With winter soon upon us, it is important to prepare your gardens for the harsh toll winter weather can take on your plants. Plants need to be protected from heavy snow and ice, damaging winds, alternate freezing and thawing of the soil, and heat from sun on very cold days.

A plant's ability to survive dry winter weather can be improved if you make sure the plant has sufficient water until the soil freezes. This is important to all plants, but especially so to broadleaf evergreens such as azaleas, rhododendrons, and newly planted trees and shrubs of any kind. An anti-transpirant or anti-dessicant can be applied to the foliage of broadleaf evergreens to reduce transpiration (moisture loss). At least two applications per season, one in December and another in February, are usually necessary to provide protection all winter. A number of garden products are available in most garden centers.

Applying a 2-3 inch deep layer of mulch after the ground freezes will reduce injury from plant roots

heaving (coming out of the soil) because of alternate freezing and thawing. Most plants, including perennials, strawberries, and other shallow-rooted species benefit from being mulched. Some commonly used mulches include bark, compost, peat moss, straw, and pine needles. Leaves can also be used if they are free of disease.

Protect trunks of trees with tree wrap for protection against desiccation from the sun and wind and drift from de-icing salts applied to drives and streets. Some plants in the landscape become a food source for moles, mice, and rabbits during periods of extended snow cover. When their normal food supply is covered with ice or snow, rodents turn to the bark and stems of young hawthorn, flowering crabapple, mountain ash, apple, viburnum, euonymus, among others. If rodents completely girdle the stems, the plants may die. Partial girdling creates wounds for borers and disease organisms to enter, as well as weakens the plant. Stems should be protected in late fall with plastic collars cut in a spiral fashion so they can be slipped around tree trunks. Hardware cloth can also be used as a stem wrap along with aluminum foil.

Tips for Individual Plants

Roses: Throughout the summer we deadhead our roses, but as winter approaches you want to leave the hips (seed pods) on rose plants. This signals the plant to shut down for winter. Remove any diseased leaves that have fallen, as they can harbor diseases which can over-winter. Prune any long canes that will whip around in winter winds, but save major pruning until spring. An 8-12 inch layer of mulch or soil should be applied around the base of plants after the ground has frozen.

Chrysanthemums: Although garden mums are often referred to as “hardy”, they don’t often over-winter well. Alternate freezing and thawing of the soil during winter months can heave plants out of the ground and cause severe damage or even death. Damage is most severe in poorly drained soils. Apply a 2-4 inch layer of mulch around the plants, and do not cut them back in the fall. Research has

found that un-pruned plants survive the winter better than those that are pruned.

Strawberries: Applying a 3-5 inch layer of straw mulch in the fall after the ground is frozen is the best way to protect strawberries.

Other Perennials and Ground Covers: Remove any leaves that have accumulated in beds, as these can smother your plants. Remove stems and foliage that are infested with insects or disease. Mulch plants after the soil has frozen.

Lawns: Mow at lower heights when cool weather sets in. The last mowing of the season should be 2 inches in height. Fall is the best time to fertilize your lawn. Rake up any leaves that fall on your lawn. They can smother your grass, resulting in bare spots next spring.

Other tips:

Fall is the best time to plant spring flowering bulbs. It is also the time to start forcing bulbs for holiday and winter blooming.

November is the time to start feeding wild birds. Remember birds need food, water, and shelter.

Start planning for next year. Winter is a good time to do some thinking. Make notes on what you liked or didn’t like about your plantings this year. Read gardening books and magazines to get new ideas for next year.

While winter can be a difficult time for plants, those that are adequately protected should survive well. The time spent preparing your plants for winter should pay off next spring, summer, and fall.

Is Commercial Vegetable Production for You?

by *Gaylord Moore*

If you are a part-time farmer looking for a commercial operation, vegetable production may fit the bill. It is relatively easy to enlarge a home vegetable garden to a small profitable enterprise. Very little capital is required to grow a vegetable crop, plus many types of conventional equipment can be used, reducing the need for added investment. However, there are some most important considerations before you venture too far into the idea of vegetable production.

- Time and labor: Will you or family members have adequate time to care for the crops on a regular basis throughout the growing season?
- Desire: Do you and your family have the interest and commitment to grow vegetables in view of the sustained time and effort required?
- Capital: Can an appropriate amount of money be invested in equipment, tools and supplies to grow quality vegetables?
- Technical knowledge, experience: Do you or family members have the necessary knowledge of the culture of specific vegetables to successfully grow the crop? Are you willing to learn from appropriate references?
- Markets: Are there dependable markets for the vegetables, some of which are highly perishable? Can you creatively sell vegetables in local communities?
- Adverse weather: Do family members understand that the weather during some seasons may result in crop damage or failure? Is the family able to accept this possibility and “weather the storm”?
- Site: Does your farm provide a satisfactory soil and climate for successful crop production? Do you have ample water for irrigation.
- Time for business establishment: Does your family realize that few businesses become fully operational and successful in only 1 or 2 years? Is the family willing to work during a 3 to 5 year period to fully establish a business?
- Quality products: Do family members realize that the best chance for success is when high-quality products are grown?
- Cooperation: Are others in the area interested in growing vegetables so that some cooperative efforts are possible?

For the greatest chance for success, the answer to these questions should be yes. An excellent guide from Kansas State will help determine the feasibility of vegetable production in your future. *Farming a Few Acres of Vegetables* by Dr. Chuck Marr goes into detail on steps to determine if this enterprise is for you. Find this information on the internet at <http://www.oznet.ksu.edu/library/hort2samplers/mf>. You may also contact Gaylord Moore, University of Missouri Extension, 833 Booneville, Springfield, MO 65802 for a copy. You may also e-mail me at mooreg@missouri.edu.

Winterizing Fruits, Vegetables and Yourself

by *Suzi Teghtmeyer*

With falling leaves, colder temperatures, and diminishing sunlight, it is time to set about preparing the garden, the fruit patch, and the flower beds for the long winter's nap. I have located a number of websites to guide us in this endeavor of “tucking in” the canes and runners so they will rest easy.

Brambles - Production Management and Marketing by Richard C. Funt, et. al.

<http://ohioline.osu.edu/b782/index.html>

Winterizing of brambles is touched on in Chapter 3 - Selection and Care of Plants, under the section Pre-cooling, Storage, and Shipping and [linking to] Winter Protection.

Small Fruit in the Home Garden by Diane Relf, et. al.

<http://www.ext.vt.edu/pubs/envirohort/426-840/426-840.html>

Winterizing strawberries and other fruits grown above ground (pyramids, barrels, etc.) is addressed in the strawberry section of this web publication. It also describes strawberry bed mulching techniques.

Effects of Cold Weather on Horticultural Plants in Indiana by Larry A. Caplan of Purdue University

<http://persephone.agcom.purdue.edu/AgCom/Pubs/HO/HO-203.html>

This graphic and table-laden site describes the warning symptoms and prevention of cold injury to vegetables, fruit crops, ornamental plants, and flowers. Tables illustrate crop frost resistance, symptoms of freezing injury, the floral development stages for fruit crops, critical temperatures for flower bud kill, and critical temperatures and cold injury evaluations for small fruit crops. Specific cold protection measures are described at the end of the document, including sprinklers (and their settings) and row covers.

Commercial Blueberry Production in Minnesota and Wisconsin

<http://www.extension.umn.edu/distribution/horticulture/DG2241.html>

This publication describes protecting blueberries from both the cold and wind desiccation on the "Planting" page under the heading, "Winter Protection."

Overwintering Plants in the Landscape by Mary Ann Rose and Elton Smith

<http://ohioline.osu.edu/hyg-fact/1000/1016.html>

Preparing for your ornamentals for winter is the thrust of this bulletin. It describes the types of winter injuries, then how to acclimate plants and protect them against damage.

Horticulture In North Dakota: Seasonal Tidbits and Tips by Ronald C. Smith.

<http://www.ext.nodak.edu/extpubs/plantsci/landscap/er21w.htm>

Divided into the four seasons, this handy report describes prevention techniques of winter troubles such as winter injury, rabbit and mice damage, and de-icing salts. The fall section provides hints for dividing perennials and seeding of lawns.

This last bulletin has nothing to do with winterizing your garden, but winterizing and protecting yourself. North Dakota State University Extension Service Extension Publication **Stalled . . . but Safe** [by George Maher, Agricultural Safety Specialist, <http://www.ext.nodak.edu/extpubs/ageng/safety/ncr170w.htm>] addresses such topics as "Winter Driving", "Water, Food and Medicinal Supplies", "What To Do If Caught In A Storm", and other safety protocols. We want you back next spring!!

Persimmon Report

by *Patrick Byers*

Recently I had the opportunity to attend the American Persimmon Conference, held September 27-28, 2002, in Terre Haute, Indiana. This conference, sponsored by the Indiana Nut Growers Association (INGA), was titled "Commercializing the American Persimmon." Traveling with me was Andy Thomas, from the University of Missouri Southwest Research and Education Center in Mount Vernon. In addition to persimmons, Andy and I learned a great deal about pawpaws on this trip, which will be the subject of a future column. This article hits the highlights of the persimmon meeting.

The first day of the conference included lectures and presentations by persimmon scientists and enthusiasts. Bill Heiman and Tom Sears, among the conference organizers, discussed the contribution of Jim Claypool to the development of the American persimmon. Beginning in the 1970s, Mr. Claypool gathered together all the improved persimmons he could find and initiated a breeding program on his farm in Illinois. Among his goals were large fruit, concentrated ripening, attractive color, tough skin, seedlessness, pulp free of black specks, disease resistance, good taste, and good quality processed product. Among the hundreds of seedlings that resulted from his efforts, Mr. Claypool and

members of the INGA have identified over 30 that have potential for further testing. Two of the seedlings have been named Elmo and Dollywood.

Martha Davis, INGA, next discussed methods of evaluating persimmon pulp quality and processed persimmon products. She shared with us her evaluations of a number of persimmon cultivars and Claypool selections. We had a chance to evaluate persimmon pudding, cookies, and bread personally



Nikita's Gift is an interspecific persimmon hybrid.

at the break. Following the break we learned about breeding techniques for persimmon from Jerry Lehman. Mr. Lehman discussed the parentage of leading persimmon cultivars and Claypool selections. Those interested in the Claypool selections can investigate this project at www.claypoolpersimmonfarm.com. The next speaker was Scott Kinzie, Indiana State Entomologist, who discussed persimmon insect and disease problems. Several insect problems, including the bark phloem beetle, the persimmon borer, webworms, and the asian ambrosia beetle, can be economically damaging. Anthracnose, verticillium wilt, and persimmon wilt were mentioned as potential disease problems. At present there are few pesticides labeled for control of persimmon pests; sanitation and cultural practices are important in managing problems.

Following lunch we learned about shipping and processing persimmon. Wally Payne described his family's business of shipping American persimmons to Chicago. Mrs. Dymple Green managed a successful business canning persimmon pulp, and

she shared information on pulping and processing the product with equipment designed by her family. Ken Neighbors, of White Owl Winery, shared information on producing persimmon wine. Attendees' ears perked up when Ken mentioned that he would pay fifty cents per pound for fresh persimmons. Among the wines produced by White Owl Winery is a persimmon wine that retails for \$20 per bottle.

Greg Reighard, from Clemson University, shared his experiences with Kaki and American persimmons. At present most Kaki persimmons are not reliably hardy in the Midwest. Breeding efforts are underway, however, to produce hardy Kaki persimmons and hybrids between Kaki and American persimmons that will withstand Midwest weather. Among these are "Nikita's Gift" and "Rosseyanka," developed in Russia. Dr. Reighard also discussed a problem in Kaki persimmon called "sudden death syndrome," which causes the collapse and death of trees.

Jerry Lehman returned to the podium to discuss persimmon establishment and culture. Rootstock seeds are planted in the permanent site, 6 seeds to the hill. Hills are spaced 20 feet apart in rows 30 feet apart (75 trees per acre). The strongest seedling is grafted to the desired cultivar in the spring of the third year. Several grafting techniques



Several seeds are planted at each hill. The strongest of the resulting seedlings is grafted to the desired cultivar.



Patrick Byers at the Claypool Orchard.

succeed with persimmon, such as bark graft, splice graft, or “v” graft. Allowance must be made for staminate trees, at a ratio of 1:5 (15 trees per acre). The first fruit is usually produced from a grafted tree in year 5-7. According to Jerry’s figures, a mature tree will produce 70 pounds of fruit, which will yield 35 pounds of pulp. Jerry estimated the gross income of one acre of 9-year-old trees to be \$8120.

The second day of the conference included two orchard tours. We first visited Jerry Lehman’s orchard at Terre Haute. The Lehman orchard included many interesting plants, such as pawpaw, heartnut, walnut, and jujube, but the main attraction was persimmon. We had the opportunity to taste many of the cultivars and selections mentioned in the previous day’s talks. We observed orchards of several ages. Jerry’s family then treated us to a delicious barbecue lunch. The highlight of the lunch was homemade persimmon ice cream – wow! Following lunch we drove to St. Elmo, Illinois, to visit the Claypool orchard. Andy and I had arrived

in the Promised Land (as far as persimmons are concerned). We sampled literally hundreds of persimmons, and listened as Mr. Claypool described his project and his hopes for the persimmon. Mr. Neighbors accompanied the tour, and invited us to sample persimmon and pawpaw wine. Following the tour we hit the road for the trip home, full of enthusiasm for the persimmon and plans for planting orchards at Mountain Grove and Mount Vernon.

Selecting Seeds for Perfect Plates

by Teresa Hoy

Harvest Connection, the Missouri program that links farmers and chefs, moved into the southwest area of the state this last spring. *Selecting Seeds for Perfect Plates* is the theme of a meeting currently being planned in Springfield to bring chefs and farmers together. The purpose is for the chefs and farmers to connect, begin building relationships and gain first-hand understanding of what they can do to help each other succeed. Information farmers gather can be used for future planting decisions as they learn what produce chefs are interested in. Chefs will discover the wide range of produce and other specialty products available to them.

Chef and owner Eric Zackrison is hosting the November meeting at his newly-opened restaurant, Agrario. Farmers are encouraged to bring seed catalogs. Chefs should bring their produce wish lists. Anyone interested in attending should RSVP Teresa Hoy by phone or email by **November 4, 2002**. Contact information follows:

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Harvest Connection Project Coordinator
University Outreach and Extension
135 W. Market
Warrensburg, MO 64093
Ph: 660-747-3114
Toll Free: 877-684-0669
Fax: 660-747-9867
Email: hoyt@missouri.edu

The Flower Lady

by Marilyn Odneal

It was about 20 years ago that I heard about the flower lady who lived down south. I heard she grew daylilies, but I couldn't believe my eyes when I finally saw her garden. The flower lady had more types of daylilies than you could imagine along with hostas, dahlias, and other interesting annuals, perennials, shrubs and trees. She told me she caught "daylily fever" years ago, and it spread to other plants. Faye Coble's knowledge of plants and her willingness to share her experience has helped many gardeners throughout the years.

Faye passed away on August 7, 2002 at the age of eighty-nine. Many stories were recounted by friends and relatives at her funeral. It was said that everyone there had their own favorite "Faye Story". I remember once when Patrick Byers and I went down south to visit Faye. She confessed to us that she got so excited in anticipation of the blooming of a new daylily, she ran outside barefoot, in her housecoat, to see if the bud opened yet. Driving back to Mountain Grove, Pat remarked that it must be quite a sight seeing Faye running through her daylilies barefoot and in her housecoat. I believe that is how we will both remember our dear friend. Most of us only appreciate beauty. Faye became absolutely overjoyed.



Marilyn, Faye and Patrick at the 2000 Missouri Spring Horticulture Conference.

Coming Events

Governor's Conference on Agriculture

November 17-19, 2002, Lake of the Ozarks, MO

Contact Buffy Berendzen

Phone: 1-877-398-3305 (toll free)

Phone: 1-573-751-5622

E-mail: Buffy_Berendzen@mail.mda.state.mo.us

Getting Started in Grapes

December 13, 2002, Mountain Grove, MO

Contact Patrick Byers

SMSU Fruit Experiment Station

9740 Red Spring Road

Mountain Grove, Missouri 65711

Phone: (417) 926-4105

E-mail: plb711t@smsu.edu

Great Plains Vegetable Conference

January 9-11, 2003, St. Joseph, MO

Contact Keith Hawksby

816-279-1691

Mid America Fruit Growers Meeting

January 28-30, 2003, Olathe, KS

Contact Dr. Michelle Warmund

Department of Horticulture - University of Missouri

Columbia, MO 65211

Phone: (573) 882-9632

Midwest Grape and Wine Conference

February 8-10, 2003

Lake of the Ozarks, MO

Contact Denise Kottwitz

MO Dept. of Agric. - Grape and Wine Program

P. O. Box 630

Jefferson City, Missouri 65102

Denise_Kottwitz@mail.mda.state.mo.us

Phone: (573) 751-6807 or 1-800-392-WINE

Missouri Small Fruit and Vegetable Conference

February 17-19, 2003, Springfield, MO

Contact Patrick Byers

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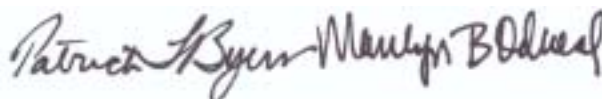
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