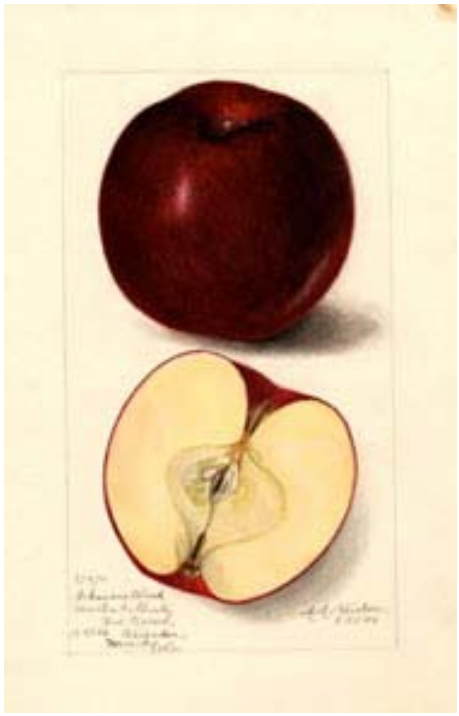
Arkansas Fruit and Nut Newsletter



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Inside this issue:

Selecting your herbicides

M. E. Garcia –Horticulturist

Weed management is an important aspect in apple productions that sometimes is over-looked with devastating consequences. The effects of weed competition can be direct or indirect. The direct effects of weed competition can be measured by decreased tree vigor and/or yield. The indirect effects, due to interaction of weeds with other components of the orchard system, can be more difficult to assess.

Although the use of herbicides is the preferred method for weed control, several factors such as ground water contamination, unintentional pesticide poisoning, and weed resistance, have led orchardist to be more cautious when choosing herbicides.

Successful weed management involves a variety of control tactics which impose multiple, temporally variable stresses on the weeds which: (1) reduce the density of weed propagules and seedlings; (2) decrease the rate of weed emergence; (3) decrease the rate of weed dispersal and; (4) decrease the proportion of available resources consumed by weeds. Table 1 summarizes the advantages and disadvantages for the various weed management practices growers can use in order to minimize weed competition in their orchard.

Table 2 was compiled from the MP-44 Arkansas 2005 Recommended Chemicals for Weeds and Brush Control Use this table for general reference to help you decide on the most effective and most environmentally safe herbicide to use in your weed management program. Refer to the actual tables in the publication MP-44 for

more detailed information such as application amount and method of application. The type of herbicide used in any orchard is determined by the age of the plant, the major weed population that needs to be controlled, and the soil type. In addition, keep the following in mind:

- Management of the orchard floor is an essential and often expensive piece of the overall orchard management scheme.
- Post-emergent herbicides effective against grass, broadleaf weeds, and woody perennials are most useful.
- The most commonly used herbicides are glyphosate, paraquat, simazine, diuron, 2-4 D, norflurazon, oryzalin, and sulfosate.
- Weeds compete for soil moisture and nutrients in newly planted and mature orchards.
- Weeds may host pests including plant viruses and can compete for pollinating bees in spring.
- Thick orchard floor cover encourages meadow voles and trunk borers, both of which can be lethal to fruit trees.
- Plant cover on orchard floor in late season prevents nutrients from leaching from soil, prevents erosion, and provides some protection to shallow roots from low winter temperatures.
- Weed management is critically important in new plantings.
- You need to be able to identify the weed to determine where and when does it occur.

Where trade names or commercial products are used for identification, no discrimination is intended and no endorsement is implied. Always read the label before using any pesticide. **The label is the legal document for the product use. Disregard any information in this newsletter if it is in conflict with the label.**

Table 1. Comparison of various weed management practices		
TOOL	ADVANTAGES	DISADVANTAGES
Cultivation	Effective Non-selective Equipment readily available Considered “Green” Increase availability of soil nutrients and water for about a month after cultivation	May damage soil structure Spreads perennial weeds May damage tree /roots Short term control Repeated cultivation depletes OM Compaction
Mulching	Effective Non-selective Holds moisture Considered “Green” Long-term control Beneficial soil amendments	Availability of mulch Cost of mulch/application Attractive to rodents Must be free of seeds Expense and durability varies depending on type
Mowing	Rescue treatment Quick suppression Equipment available Reduce seed spread	Weeds may still compete Quick regrowth Several mowings required May damage young trees
Herbicides	Effective Easy to apply Can be selective Timely Short-term benefits include conserving soil nutrients and moisture; optimal growth and early cropping	Requires at least 2% OM Directed spray equipment Effects on pest complex Cost varies Prolonged use depletes soil OM Some residue may persist in the soil

TABLE 2. GENERAL REFERENCE FOR MOST COMMONLY USED HERBICIDES FOR FRUITS					
PESTICIDE	**ACTIVITY**	**CROPS LABLED FOR USE**	PROS	**CONS**	**COMMENTS**
norflurazon: Solicam	Grasses	Tree fruits Blueberries, blackberries, raspberries Grapes Pecan	May be tank mixed with Gramoxone	Do not use on newly planted trees or vines. Do not graze treated areas	Pre-emergent activity
oryzalin: Surflan	Grasses	Tree fruits Blueberries, blackberries, raspberries Grapes Pecan	May use in year of planting trees No PHI Nontoxic to bees Low toxicity to birds	Low to moderately persistent in soil (half life = 20-128 days) Requires significant moisture for incorporation Do not apply when blueberry fruit is present	Pre-emergent activity
paraquat: Gromoxone Extra	Grasses and broadleaf weeds	Tree fruits Blueberries, blackberries, raspberries Grapes Pecan	May use in year of planting trees Nontoxic to bees	Highly persistent in soil (half life = 100 days) High mammalian toxicity Restricted use Do not graze treated areas	Widely used Post-emergent activity
simazine: Princep Simizine	Broadleaf weeds	Tree fruits Blueberries, blackberries, raspberries Grapes Pecan	No PHI	May not use until trees are one year old and vines 3 years old Moderately persistent in soil (half life = 28-147 days) Plants need to be established before using Princep	Most widely used preemergence herbicide
terbacil: Sinbar	Broadleaf weeds	Tree fruits Blueberries, blackberries, raspberries		May not use until trees are three years old Highly persistent in soil (half life = 50-180 days) 60 day PHI Not for use on sandy soils or exposed roots	Pre-emergent activity

TABLE 2. GENERAL REFERENCE FOR MOST COMMONLY USED HERBICIDES FOR FRUITS (CONT.).					
PESTICIDE	**ACTIVITY**	**CROPS LABLED FOR USE**	**PROS**	**CONS**	**COMMENTS**
diuron: Karmex Direx	Grasses and broadleaf weeds	Tree fruits Grapes Pecan	No PHI Nontoxic to bees	May not use until trees are one year old Moderate to high persistence in soil (half life = 1+ years) Moderate mammalian toxicity	Pre-emergent activity
fluazifop: Fusilade	Grasses	Tree fruits Blueberries, black-berries, raspberries Grapes Pecan	May use in year of planting trees Low persistence in most soils (half life = < 1 week) Low toxicity to bees	Non-bearing apples and pears only Do not apply to pecan with 30 days of harvest Do not apply to plums, peaches, nectar-ines within 14 days of application	Post-emergent activity
glyphosphate: Roundup Touchdown Glyphomax	Grasses and broadleaf weeds, woody brush and vines	Tree fruits Blueberries, black-berries, raspberries Grapes Pecan	Low mammalian toxicity	May not use until trees are two years old 14 day PHI 1-2 week interval before effects on weeds is noticeable Some species are highly sensstive	Widely used, except in first year plantings Post-emergent activity
napropamide: Devrinol	Grasses	Blueberries, black-berries, raspberries Grapes Pecan	May use in year of planting trees Nontoxic to bees Useful in light soils	Moderately persistent in soil (half life = 56-84 days) 35 day PHI Requires significant moisture for incorpo-ration May be used around new pecan plantings	Pre-emergent activity
2,4-D: Hi-Dep	Broadleaf weeds	Tree fruits		May not use until trees are one year old Do not harvest stone fruits within 40 days of application High oral toxicity to humans	Post-emergent activity

Fruit Cultivar Decision - Look, Listen and Study

Curt R. Rom—Horticulturist

Selecting the appropriate fruit cultivars for your orchard is one of the most important decisions you can make. And, many of the management and marketing decisions you will make for the next two or more decades will be dependent upon your cultivar selection. Therefore, you are strongly encouraged to carefully study the cultivars before you plant.

Use every source of information available to you to gather information, facts, ideas and opinions on cultivar performance. However, be aware that many if not most cultivars are locally adapted. Understand that because an peach does well in California or Michigan or an apple does well in Washington or New York, that does not mean that the same cultivar will do well in Arkansas. Before you decide to plant a large acreage or significant number of trees of any cultivar you should visit the Fruit Substation in Clarksville or the Main Station in Fayetteville to look at how the cultivar performs in Arkansas, then plant 5-20 trees yourself to see exactly how it does on your farm. You might use an automobile as an analogy; would you buy a car that you did not test drive, have a service mechanic evaluate, and or you did not study all style, comforts, fuel efficiency and safety data? So, you should "test drive" new cultivars before you invest in a purchase.

There are some general ideas you should consider regarding fruit cultivars. I suggest you take a "market-first" approach to your cultivar selection decision. Ask yourself the following questions. How will you sell this cultivar(s)? Who will buy this cultivar? Why would they buy it? How will your customer use this fruit? It will be a waste of time, energy and resources to plant cultivars that do not have a strong market - especially a market willing to pay the price for quality, local fruit.

Because we think the most market-sustainable orchards in Arkansas must cater to local and regional markets, it is important that you have a range of cultivars - both in appearance and character, and range of maturity. If you only grow one cultivar, you have very strong risk due to a frost or a lost market due to bad weather, disease, etc. Also, if you only have one cultivar, you will need to be able to harvest, market and sell all your fruit at one time. This increases your need for market size and strength, your reliance on labor, and the need to store quantities of fruit. It is better to have fruit ripen in a sequence over a period of weeks. This will extend your cash-flow income period and spread your risk. It will reduce your labor need (at one time) and your need to store fruit.

After market and season of harvest, there are a number of fruit characteristics to consider. Whenever possible, select cultivars that bloom after the last average frost for your area. For example, the last average killing frost in Clarksville is approximately

March 18-22; the last average killing frost in Northwest Arkansas is April 10-15. Select cultivars that will bloom after that period to increase your chance of survival and marketing a crop.

You are encouraged to use cultivars that have low disease susceptibility. For peaches select cultivars that are resistant or have some resistance to bacterial leaf spot. The use of antibiotic pesticides to prevent this disease is very expensive and success is variable. Peach cultivars from the West Coast often are generally susceptible to spot while those developed, tested and recommended in Arkansas and the local region typically are much less susceptible.

For apples, although scab resistant cultivars are highly touted, it is a relatively minor disease in Arkansas when compared to cedar apple rust and fireblight. These latter two diseases will kill a tree outright or debilitate it over the long term. It is critical to select cultivars with resistance or plan a disease management program.

Many popular “commercial cultivars”, such as the red ‘Delicious’ apple are produced widely because of its uniform ripening; all the fruit can be harvested at one time with a single picking. Other cultivars such as ‘Gala’ or ‘Jonathan” tend to ripen over an extended period of one to three weeks. In a large scale commercial operation, nonuniform ripening and an extended harvest is an undesirable trait, but in a local market, a farmers’ or roadside market, and especially a pick-your-own operation, a long harvest period means repeat business and sales. For most direct, local market operations, a long harvest period is a good characteristic.

Some cultivar characteristics are not really important to us in Arkansas. For instance, winter hardiness is only a minor consideration. All apple and peach cultivars will survive the average winter in Arkansas. However, cultivars with lower chill requirements (less than 900 hrs) may satisfy their winter chill by late winter, and loose its hardiness prematurely. Then, it may become sensitive to temperatures in the “teens” in February and March which does happen every few years. These cultivars should probably not be grown north of Conway.

Heritage or “antique” cultivars have strong appeal in local and direct markets. But, as a grower you should realize there are reasons many heritage cultivars were abandoned particularly due to poor quality or other problems. For instance, there is tremendous romantic notion about the ‘Elberta’ peach. However, this peach blooms relatively early and is frost prone, can loose leaves and become spotted by bacterial leaf spot. At maturity, it is not very well colored (although there are some more highly colored strains and selections available - but realize some are named Elberta but are not really ‘Elberta’ peaches). When ripe, the fruit are very juicy and flavorful - that is what customers remember. But, they are very soft and tender, bruise readily, and the skin sloughs-off easily. They do not cook or freeze well but are mushy and stringy. It is diffi-

cult to get a ripe ‘Elberta’ from the tree to the table. I have heard people credit the tenderness of ‘Elberta’ with the trend in shipping industries to pick fruit hard, green, and flavorless and almost destroy the peach-eating market.

Similarly, people often request ‘Ben Davis’ and ‘Arkansas Black’ apples. Both of these apples were originally useful in the 19th century because they could be packed into wood barrels with a hammered-on lid, then rolled into rail cars, shipped to distilleries for manufacturing in hard cider, brandy or other liquors. ‘Ben Davis’ was also locally grown for processing as a dried apple because it had low moisture (meaning dry-fleshed) and very hard (meaning woody) and easy to cut into slices for drying. These apples were really never meant to be eaten fresh. It has been said that if the public had eaten ‘Ben Davis’, it would have “cured them” from ever eating apples again. However, ‘Arkansas Black’ may be more popular today with greater acreage in production than in its “hey days”. It is very attractive, has some reasonable disease resistance, blooms relatively late, and it is so strongly associated with our state, that we must consider growing it.

Many of the most popular apple cultivars still grown are essentially heritage apples. For instance ‘Jonathan’ is an 18th century apple, and ‘Rome Beauty’, ‘Winesap’, ‘Delicious’, ‘Golden Delicious’ all appearing in production in the 19th century. These apples have persisted because of their quality while others have been left behind.

Thus, there are many considerations to selecting the cultivars for your farm. For your decision, make a list of characteristics of your market, your customers, your farm, your management skills. Then make a list of cultivar qualities you think would fit your operation. This will help you match cultivars to your farm. Next, look at what is grown locally and regionally and see what is being tested on the university experiment farms. Study the characteristics of the cultivars in farms similar to your in size, scale, operations, market, and region. Get as much information about the cultivars as you can find. Develop an area on your farm that is your “experimental” orchard and conduct your own small-scale trials. There are many more cultivars that will not do well than will do well - the fun is to find that gems that work best for your situation. The following article lists some cultivars of peaches and apples that are worth considering.

Blackberry Variety Choices

John R. Clark– Horticulturist

Potential and existing blackberry growers must make decisions on what variety to plant as a first step in establishing any new planting. Here are a few up to date comments on blackberry varieties for you to use in selecting a variety for planting.

Ouachita. This is the newest thornless variety from UA, released in 2003. Ouachita first was planted commercially in 2004 and first harvests were had in 2005. The reports on Ouachita were outstanding in its first year. Comments on excellent fruit quality were common, and for those that ship blackberries, the variety delivered as anticipated – a good complement to other UA thornless varieties for postharvest handling. Ouachita ripens between Arapaho and Navaho, about June 12 at Clarksville. It has medium-large berries, about 6-7 g on average. Berries are shiny and attractive and plants are very productive. This variety has had few reports of white drupes, and is currently a good choice for planting for either shipping or local sales.

Navaho. Most everyone is familiar with the 1989 release of this first thornless variety from UA. It continues to be planted commercially, and remains the top UA variety for shipping. It has medium-sized berries, averaging 5 g. It ripens its first fruits about June 20 at Clarksville. It is also the sweetest of the Arkansas varieties. It has proven to be an excellent variety and one to still consider as a good choice for planting.

Arapaho. This is still the earliest of the UA thornless varieties, averaging June 7 for first ripe at Clarksville. Early ripening and good fruit quality are its major attributes. Yields are always lower on Arapaho compared to all other UA varieties, though the early fruit is still valuable to many growers. Arapaho continues to be planted commercially.

Apache. Apache has one major fault, that being the occurrence of white drupes on fruit. This problem is more common early in the ripening season, which begins about June 25 at Clarksville. Some growers comment that the problem goes away after substantial fruit is ripe, while others say white drupes are a problem for much of the season. This is very disappointing because Apache offers the largest fruit (10 g), is of good quality, ships well, and has fabulous plant health. Apache is still popular in the marketplace, but unfortunately one must be aware of the white drupe concern –check with other growers on their experiences with this variety.

Chickasaw. Although thorny, the 1999 released Chickasaw continues to be planted and has high yields of excellent quality fruit. The fruit average 10-12 g and have the best postharvest handling capability of any UA thorny variety. Chickasaw begins its fruit season about June 12. Some commercial planting for the shipping market has been established of this variety. Some reports of virus concerns have been made, and this can be a concern. Growers should inquire with the nursery if any virus symptoms have been seen on their stock and avoid any chance of getting infected plant material.

Kiowa. This very large-fruited variety (up to 15 g) continues to be a top choice for pick-your-own and local sales producers. The fruit is good quality, though not recommended for shipping. The fruiting season begins about June 10 for Kiowa, and the season is long – usually 6 weeks. This offers a long marketing season for growers that prefer this ripening habit. Over the years it has not had many reports of double blossom, and is likely more tolerant to this disease than any other UA thorny blackberry.

The older UA varieties such as Choctaw, Shawnee, Cherokee, Cheyenne, and Comanche are occasionally planted, particularly the first three mentioned. However, most agree that the new releases have displaced these as current choices.

Remember that nurseries licensed to propagate UA fruits can be found at www.uaex.edu then click on agriculture, then horticulture, then fruits and nuts. Choose the crop and icons for variety descriptions and licensed nursery listings.

Up-coming Events: Mark then on your calendar

Friday, Feb 10

Attend the first **Farmers' Market Association Statewide Member Meeting and Conference** in downtown Hot Springs. Who should attend? Farmer's market mangers, Extension CDC & RC&D personnel, local market supporters, and state and federal agencies. Pre-registration ends on Feb 3rd. The contact person is Hunter Hauk athhauk@uaex.edu or 501-671-2259.

Saturday, Feb 11

The Arkansas Strawberry Growers Association will have its Annual Spring Pre-Harvest Meeting. The meeting will be held at the Farm Bureau Building 1st floor conference room 10720 Kanis Rd. In Little Rock. The Meeting will begin with registration at 8:30 am. For further information, please contact: Jim Goodson at : 501-951-6830.

Tuesday, Feb 15

There will be a **pruning demonstration workshop** scheduled for Tue, Feb 14th (or Tue, Feb 21st in case we have to cancel due to inclement weather) at the U of A Fruit Research Substation in Clarksville. In this workshop, you will learn about the principles of grafting along with a hands-on demonstration for pruning apples, blueberries, brambles, grapes, and peaches. Registration will begin at 12:30 p.m. and the workshop will begin at 1:00 p.m.

Please call 479-754-2406 to pre-register or to get further information

Tuesday, Feb 28

The U of A Cooperative Extension Service, has scheduled a **Peach Pruning Workshop** to be held from 10:00 AM to Noon at Smith's Orchard in White County on February 28, 2006. This should be a great hands-on training for the public to come and learn about pruning.

Smith's Orchard is located on HWY 87 between Denmark and Bradford—Watch for signs.

This workshop is open to all eligible persons without regard to race, color, national ori-

gin, religion, gender, disability, marital or veteran status, or any other legally protected status. Persons with disabilities who require alternative means for communication of program information (large print, audiotapes, etc.) should notify the county Extension office as soon as possible prior to the activity.

For additional information, call our office at 501-268-5394 or 1-800-467-8166. You can also reach me by email at swesson@uaex.edu.

Monday, March 20

Grape Best Management Practices Tailgate Meeting. Mid-America Viticulture and Enology Center, Missouri State University and the University of Arkansas will present this informal meeting to update you on viticulture practices. This meeting will be held at two locations: Wiederkehr winery in Altus in the morning and at Hindsville in the late afternoon. Details on this meeting are not definite, but for more detailed information, please contact Andy Allen at: raa898t@MissouriState.edu

Saturday, April 1

There will be meeting to organize an **Arkansas Pecan Growers Associati**on at the house of Arthur A. Davis at 3514 Walker Corner, Scott, AR. This is an informal meeting to meet people and determine the needs of the pecan industry of the state. The meeting will begin at. 11:00 am Lunch will be provided by Mr. Davis. If you are planning to attend, please call Mr. Davis at 501-680-0917 or me at 479-575-2790

UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE
Cooperative Extension Service

A Commitment to Excellence and Service:

We a committed to excellence and service to you. If you have any questions, problems or want to arrange for an orchard visit regarding your concerns, please contact your county extension agent or call or write me.

For questions concerning this letter contact:
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In addition, this newsletter is meant to help you in your orchard management practices. If there is any topic you wish for me to cover, let me know and I will do my best to bring you the information. I am open to suggestions on how to improve this newsletter.

Where trade names or commercial products are used for identification, no discrimination is intended and no endorsement is implied. Always read the label before using any pesticide. **The label is the legal document for the product use. Disregard any information in this newsletter if it is in conflict with the label.**