

FACTS FOR

Fancy Fruit



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Crop Conditions

Apple harvest is going well with excellent quality fruit being harvested. Grape harvest is underway. Fruit quality is excellent this year. Fall raspberry harvest continues.

Featured Apples – Big Red Gala and Grand Gala



Figure 1. Big Red Gala Apple

Over the last few weeks we’ve been harvesting ‘Big Red Gala’ and ‘Grand Gala’ apples from the Purdue Meigs farm. The quality has been fantastic, and in my opinion, better than other Gala strains.

First, what are Big Red Gala and Grand Gala? Both these varieties arose as spontaneous bud mutations, often called “sports”. In the orchard, there is very little difference between Big Red Gala and Grand Gala. Big Red Gala was discovered by Ed Fackler as a limb

mutation of Kidd’s D-8 Gala at his farm in southern Indiana, while Grand Gala was discovered by Charles McSpadden in Tennessee, as a mutation of Royal Gala. Both these varieties have since been patented and licensed to Protree Nursery, California (Big Red Gala) and Stark Bros. Nursery, MO (Grand Gala).

While there have been over 20 different strains of Gala marketed, most of these have been on the basis of fruit color (amount of red color, blush vs stripe, etc). What’s different about Big Red Gala and Grand Gala is that they are fruit size mutations, the fruit size is dramatically larger than other Gala strains. Fruit size is about 50% larger than other Gala’s. We have been studying this increased fruit size at Purdue for the last few years. The reason Big Red Gala and Grand Gala have larger fruit is not due to more cells, but due to larger cells. The cells also have larger nuclei with more DNA, but that’s another, more complicated, story. The fruit also have higher soluble solids (sugar) concentrations. My impression is that the large-fruited strains mature a little earlier. I don’t have any comparisons for storage life, but suspect the larger strains may not keep quite as well.

Before you order thousands of trees, a couple of words of caution. Some of the fruit of these large strains tends to be less regular in shape than other Gala strains. This is likely to be more of a detriment in the wholesale industry than for those selling directly to the consumer. The fruit is also rounder and less conical than other Galas. The trees seem to have less apical dominance and the leader wants to flop over, but this can be managed with attention to staking.



Overall, Big Red Gala and Grand Gala tend to be crisper and sweeter than other Gala strains. The fruit are much larger than other Galas, but the shape is not as regular. These varieties offer promise for retail growers, but the irregular shape probably disqualifies them for wholesale growers.

ReTain on apples

ReTain is a fairly new growth regulator that basically prevents the tree from making ethylene. As many growers know, ethylene is a hormone that causes abscission and pre-harvest drop and also plays a key role in fruit ripening. ReTain is a harvest management tool that allows growers to spread out their harvest to better fit their labor or marketing schedules. This could be especially useful in U-pick operations. With most varieties, harvest delays of 7-10 days can be obtained using ReTain.

ReTain should be applied as a single application 4 weeks before anticipated harvest. It should be applied in enough water to ensure good coverage and an organo-silicone surfactant should be added. Application during slow drying conditions will increase absorption and better results will be obtained. Avoid spraying when temperatures are over 90F. On sensitive varieties such as Gala, Jonagold and Honeycrisp, some growers will use lower rates (as low as half rates) but this may also decrease the response.

One of the benefits of delayed harvest with ReTain is that fruit size and color continue to increase and are improved when fruit are harvested. Typically, lower incidences of

superficial scald, watercore and internal breakdown are seen with the use of ReTain. ReTain is certified as an organic product. (Hirst)

Control Of Preharvest Drop with NAA

The traditional material used for stop drop control on apples is NAA (Fruitone N), a synthetic auxin. Other synthetic auxins you may have heard of include 2,4-D and 2,4,5-T. Of course you also know Fruitone N as a chemical thinner. Early in the season NAA knocks them off and later towards harvest it sticks them on. This highlights the importance of timing when using plant growth regulators.

Another newer stop drop material is ReTain. Although both NAA and ReTain can reduce preharvest drop, they do this in different ways. ReTain delays apple maturity whereas NAA does not delay maturity (and may even hasten it) but just reduces the fruit dropping. ReTain must be applied well ahead of the anticipated harvest date so a considerable amount of planning is required. NAA on the other hand needs to be applied just before apples start dropping, so in this regard can be viewed as a rescue treatment.

Once NAA is applied it takes about 3 days for the activity to kick in. After that you can expect about 7 days of drop control. Rates of 10-20 ppm are usually effective, but knowing exactly when to apply it can be tricky. If the application is made too soon, the effect may wear off before harvest is complete. If the NAA is applied too late, then too many apples will have dropped on the ground before the

NAA starts having an effect. Wait until you start to see a few apples drop, and perhaps assist this by bumping a few branches and seeing if any apples drop. Then it's time to apply the NAA. Longer stop-drop control can be obtained with a split application, 10 ppm applied 7-14 days apart. NAA works best when the temperature is over 70F. Be aware that high rates of NAA (20 ppm) can advance fruit maturity.

NAA can be tank mixed and is compatible with a wide range of products. Always conduct a small test before mixing NAA with materials you haven't tried previously. Apply in enough water to ensure good coverage. (Hirst)

Strawberry Fruit Bud Development

Late summer is the time to fertilize strawberries fields to stimulate flower bud initiation during the fall months. Applications of 20 to 50 pounds of nitrogen per acre in mid August to September are recommended. Nitrogen rates depend upon amount supplied at renovation and plant vigor. New fields with high vigor may not need additional nitrogen now, but most older fields should benefit. Irrigation during this time is also extremely important, if rainfall has not been sufficient. We suggest about 1 inch per week. Continue to irrigate strawberries at this time to assure a good crop next year. (Bordelon)

Fall Herbicide Applications for Strawberries

A number of herbicides can be used on strawberries during late summer and fall to

Facts for Fancy Fruit is a newsletter for commercial and advanced amateur fruit growers. It provides timely information on pest control, production practices, and other topics likely to be of interest to fruit growers. All growers and interested persons are welcome to subscribe.


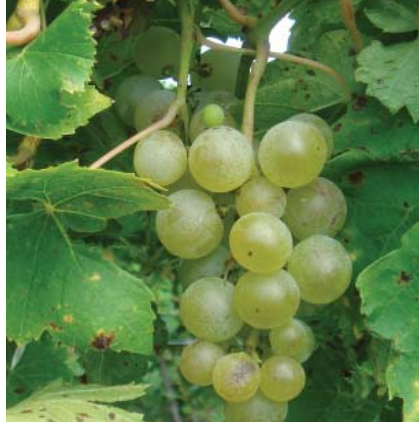

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Current bud stages West Lafayette, IN

Apple	Grape	Blackberry
		

Honeycrisp harvest starting

Grapes ready to harvest

Primocane fruiting blackberry

prevent weed germination, kill emerged weeds, and provide residue control until the following spring. The key set of weeds you need to control during this period are fall germinating winter annuals such as chickweed, henbit, and shepherds purse. You may also need to prevent germination of wheat, oats, or rye seeds that come in the straw mulch you apply for winter protection.

Devrinol (napropamide) is a preemergence herbicide that can inhibit rooting of daughter plants so it should be applied after early forming daughter plants have rooted. Late forming (after late August) daughter plants do not contribute to yield and Devrinol can be applied before these plants root. Devrinol must be applied before winter annuals and small grains emerge. Devrinol provides excellent control of small grains and some winter annuals such as chickweed. Devrinol must be moved into the soil by cultivation or water after application.

Dacthal (DCPA) is a preemergent herbicide that can be used in new plantings or immediately after renovation. It provides good control of many grasses and some broadleaves such as purslane and lambsquarter. Like Devrinol, it must be applied before weeds emerge.

Sinbar (terbacil) is primarily a preemergent

herbicide but it has some postemergence activity against small susceptible weeds. Fall applications of Sinbar should only be applied after the strawberries are completely dominant. If Sinbar is applied to actively growing strawberries, injury can occur. Cultivars differ in tolerance to Sinbar. In general, less vigorous cultivars have greater injury. Applications are most effective when applied to the soil and activated by rainfall or irrigation. Sinbar provides excellent control of many winter annual weeds. Fall applications of both Devrinol and Sinbar will persist to the following spring.

Chateau (flumioxazin) is primarily a preemergent herbicide but has some postemergent activity against small susceptible weeds. Fall applications of Chateau should only be applied after the strawberries are completely dominant. If Chateau is applied to actively growing strawberries, injury can occur. Add 1% crop oil or 0.25% nonionic surfactant to improve postemergence control of small weeds.

Poast (sethoxydim) is a postemergent, grass specific herbicide. The grasses must be actively growing. Thus Poast should be applied in late summer or early fall before plants become dormant. Summer annual grasses, such as foxtails and crabgrass, will be killed by fall frosts, and do not require Poast

applications for control. Poast is more effective against annual than perennial grasses. Poast can be used in the fall to suppress perennial grasses such as quackgrass, control early emerging small grains, and kill winter annual grasses such as wild oats and downy brome.

A systemic, postemergence broadleaf herbicide, 2,4-D amine can be applied when strawberries are dormant to control some winter annuals. 2,4-D provides good control of many mustards and shepherdspurse, but is not very effective against chickweed. The herbicide should be applied to actively growing weeds. Be careful of 2,4-D drift causing injury to non-target plants. Check the label as only a few formulations are labeled for strawberries.

Gramoxone Extra (paraquat) can be applied as a directed spray between strawberry rows, using shields to prevent contact with strawberry plants. Gramoxone is a nonselective herbicide, so it will kill or severely injure strawberries it contacts. Gramoxone is a restricted use pesticide and is extremely toxic to animals including humans. It provides excellent control of annual grass and broadleaf weeds. Gramoxone does not extensively translocate in plants so it does not control perennial weeds. Weeds should be actively growing when Gramoxone is applied.

The Midwest Small Fruit Pest Management Handbook has a chapter on weed management. It is available on line at <http://www.ag.ohio-state.edu/~sfgnet/> (Bordelon)

Hard Cider Festival

Those interested in hard cider should take note of the Great Lakes International Cider and Perry Festival, Sept. 12-13 in St. Johns, MI. The festival includes sampling, tours, music, antique apple tasting, and cider and cheese pairing. The festival is targeted at both professional and amateur cider enthusiasts. More info on the Events page of the Purdue Fruit and Vegetable Connection: <http://www.hort.purdue.edu/fruitveg/>

Employee Training Videos Cover Apple Harvest, Pruning Skills

Pennsylvania State University Extension educators have produced employee training videos on apple harvest and on pruning and training apple trees.

They are available in Spanish and English and on DVD or VHS tapes.

The harvest training videos cover appropriate clothing, preparation for the day, ladder safety, handling skills and spot picking and hauling, according to Tara Baugher, Adams County Extension educator. The pruning and training videos cover basic skills and new strategies to improve fruit quality in modern planting systems.

Download the order form by clicking

<http://frec.cas.psu.edu/pdf/PruningHarvest-OrderForm.pdf>

The cost is \$35 for one, \$55 for both, plus \$1.59 for shipping and handling.

You also can order by mail, returning payment to Penn State Cooperative Extension, Adams County, 670 Old Harrisburg Rd., Suite 204, Gettysburg, PA 17325. Or, call 717-334-6271.

The Search for the Perfect Apple

Apples have always been an American favorite. Thomas Jefferson was never without one, and Thoreau called them the noblest of fruits. Today, the tradition continues. The average American eats 17.8 pounds of apples each year.

The oldest apple core ever found, in a Swiss Stone Age village, was estimated to be 300,000 years old. And as this apple-picking season begins, the bustle to breed the best bushel is as brisk as the race to create the perfect hybrid car. So the best apple you'll ever have may be the one you have yet to taste.

What we can do now with this gorgeous fruit is simply amazing, says Susan Brown, 53, an apple breeder at Cornell University's Experimental Research Station. Cornell's apple credentials are not too shabby: The university has bred and named 62 varieties, including the Empire, the Cortland, and the prized dessert apple Jonagold (a cross between the Jonathan and the Golden Delicious). You want crunch? says Brown. We can breed for that. You want a better balance of acid and sugar? We can do that. The ones coming up don't even have names yet, only numbers. One of them tastes like licorice.

It used to take 20 years to crossbreed a new variety and bring it to market.

No more. Brown says that advances in genetics can cut that time in half.

Still, the birth of a new fruit isn't all roses (although an apple is a kind of rose). Jim Luby, 52, is a professor of horticulture science at the University of Minnesota and co-creator of the Honeycrisp, which many regard as the best eating apple of all time. It took myriad tries to breed that beauty which falls apart in the mouth and springs with juice because its cells are actually larger than those of denser apples. Says Luby, When people come up to me and say, EOh, thank you, thank you, it's all

worthwhile. Eating apples, he believes, could help combat childhood obesity and teach kids that a treat doesn't have to come in the shape of a superhero. We're competing for stomach space with taco chips, so we have to make them tempting.

Many growers and sellers worry that most people's concept of apple is a big red fruit—that is, a Red Delicious, which they say is red but not delicious. Although it's the most widely grown because of its prettiness and shelf life, it's not an apple that makes you say, Wow, according to Lisa Kerschner, 42, who raises more than 50 varieties of apples with her husband at North Star Orchard in Cochranville, Pa. Take the Goldrush, developed in Indiana at Purdue University. It's phenomenal. People stand in line. But Kerschner also grows antique or heirloom apples, such as Adam's Pearmain, old-time varieties that are rarer and harder to grow than mainstream breeds. They may not be pretty and have a bump here or there. But when you bite in, well, wow!

Pennsylvania is smack on the list of the top apple-producing states, which also includes Washington, New York, Michigan, and California. Apples thrive in New England as well. In Lebanon, N.H., Steve Wood and Louisa Spencer of Poverty Lane Orchards grow antique varieties and are reintroducing the noble tradition of hard cider, the chosen tippie of our forefathers. If Wood, 54, had to eat only one apple for the rest of his life, he would stick with Thomas Jefferson and choose the Esopus Spitzenburg. That was his favorite. Growing apples can be very difficult, Wood says. But I guess it's an addiction.

Nick Botner, 83, of Yoncalla, Ore., may have one of the largest collections of different apple trees on earth 4000, including the Kandil Sinap, a Turkish variety. Everybody has a passion for something, he says. I can eat these apples, sell them, burn the wood if I have to. What more could you ask of life? (Jacquelyn Mitchard, Parade Magazine)

Upcoming Meetings

Sept. 12-13

Great Lakes International Cider and Perry Festival. Look under Events at the Purdue Fruit and Vegetable Connection:

<http://www.hort.purdue.edu/fruitveg/>

September 17

Boot Camp for vineyard and winery owners. Purdue Workshop. West Lafayette campus.

Contact Jill Blume 765-494-1749 or

blume@purdue.edu

Dec. 8-10

Great Lakes Fruit Vegetable and Farm Market Expo. DeVos Place Convention Center, Grand Rapids, MI. For more information:

www.glexpo.com/index.php

2010

Jan. 4-5

Kentucky Fruit and Vegetable Conference and Trade Show. Embassy Suites Hotel, Lexington, KY. Contact John Strang 859-257-5685.

Jan 6-8

Illinois Specialty Crops and Agritourism Conference. Crowne Plaza Hotel and Convention Center, Springfield, IL. For more information contact Diane Handley, 309-557-2107, or

handley@ilbf.org

Jan18-20

OPGMA Congress, The Nia Center at the Kalahari Resort, Sandusky, OH. For more information: www.opgma.org

Jan. 19-21

Indiana Horticultural Congress, Wyndham Hotel (formerly Adam's Mark Hotel), Indianapolis, IN. More information:

www.inhortcongress.org

Feb 5-12

NAFDMA's 25th Anniversary Convention, Lancaster, PA. More information:

www.nafdman.com/



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