



Healthy Fruit

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Apple Maturity

Apple maturity, as you may have guessed, is likely running a little behind this year. The usual very early varieties – Jersey mac, Paulared, Pristine, etc. – have been picked and are for sale. Size has been very good. Color is a little lacking but coming along much better with the recent cooler weather. Gingergold is likely to be harvested over the Labor Day weekend, which is the usual harvest timing, although don't forget Labor Day is early this year. Traditionally, Mac harvest starts the week after Labor Day in early orchards, however, this year the week of September 7–13 is likely to be the real start of Mac harvest. Growers are advised to “get out there” and carefully monitor fruit maturity and color as the basis for harvest.

Starch-Iodine Maturity Test

The starch-iodine maturity test is one of the best methods for assessing fruit maturity. (Another two, of course, are taste and color. Most would attest that drop is a good sign of maturity too, but then it is a little too late!) The starch-iodine maturity test has been described in previous issues of Healthy Fruit (http://www.umass.edu/fruitadvisor/healthy_fruit/hf1020/HealthyFruitVol10No20.html) and on the UMass Fruit Advisor (<http://www.umass.edu/fruitadvisor/clements/articles/sitestest.htm>). If you need starch-iodine solution, let us know and we can supply for a small fee.

Apple Maggot Still a Concern?

Apple maggot flies are definitely still out-and-about, although according to Ron Prokopy, their presence/absence is quite variable from orchard-to-orchard. He suggests growers that still have some apple maggot activity (as determined by monitoring with traps) consider a final maggot spray now, particularly on susceptible later-maturing varieties such as Golden Delicious and Fuji. Gala is also attractive to maggot, however, one needs to be very cognizant of pre-harvest intervals as we approach harvest. (Imidan 70W = 7 days; Guthion 50WP = 14 days)

Retain[®] - Is It Too Late For McIntosh?

The recommended time of application on the ReTain label is 4 weeks before the anticipated time of harvest of untreated fruit. Research over the past several years has confirmed that application closer to the start of normal harvest may be acceptable. The down side of a later application is that there is less delay in ripening. The positive side of a later application is that drop control will be extended later into the season. It takes at least 12 to 14 days for ReTain to start to retard drop. Ripening of early apples this year is running up to a week later than historical norms, thus we may

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expect the ripening of McIntosh to similarly late. ReTain, even at this relatively late time, is still the best drop control option available for retarding drop on McIntosh.

Ethrel to Advance Fruit Ripening

The primary use of ethephon (Ethrel) is to advance ripening. This can benefit both the consumer and the grower. The advantage to consumers is that they will be able to purchase high quality apples of a particular variety earlier in the season, whereas growers will be able to start the marketing season earlier. Ethephon is a very powerful stimulator of ripening and there are several factors that affect the extent that ripening is advanced.

- Concentration of ethephon used
- Time interval between application and harvest
- Temperature during and time fruit are on the tree after ethephon application
- Time from harvest until the internal temperature is reduced to 32 F.

The use of ethephon can be placed into three categories, based primarily on the intended use of the apples:

1. Sales prior to normal harvest season

The purpose of this is to advance ripening to provide good-tasting fruit before normal harvest. We recommend 300 ppm (1 pt/100 gal) ethephon plus 20 ppm NAA, and make the application 2 to 3 weeks before normal harvest. Since fruit increase in size about 1% per day they are on the tree at this time of year, there is a reduction in fruit size and yield associated with earlier harvest. Harvest 7 to 10 days after application.

2. Fruit to be held at 32 F for less than a month

The strategy with this approach is to increase flavor and red color of fruit that are consumed during the normal harvest of a specific variety. We recommend 150 to 200 ppm (to 2/3 pt/100 gal) plus 20 ppm NAA applied 1 to 2 weeks before normal harvest.

3. Fruit to be held at 32 F for an extended period

The strategy here is to maximize the amount of red color on fruit while minimizing advancement of ripening and reduction in flesh firmness. We recommend 75 to 100 ppm (1/4 to 1/3 pt/100 gal) plus NAA. The risk with this approach is that the weather will turn hot and cloudy, advancing ripening without the benefit of increasing red color. Depending upon this approach is a gamble since there is always the chance that excessive ripening will be stimulated on fruit intended for long term storage.

NAA may be applied in all of these situations with the ethephon. If this is done, a second application may be necessary after 7 to 10 days if 10 ppm is used. Alternatively, NAA can be applied 4 to 5 days after the ethephon. The danger with this approach is that weather unfavorable for spraying may occur during the time NAA must be applied, thus increasing the chances of excessive pre-harvest drop.

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