PURDUE UNIVERSITY

PURDUE EXTENSION

FACTS FOR Fancy Fruit

June 3, 2013
Volume 13 • Issue 4

In This Issue

Crop conditions

Both apples and peaches are sizing quickly. Grapes are blooming. Growers are currently hand thinning peaches.

Apple chemical thinning

The window for chemically thinning apples has pretty much closed for all apples except those in more northern areas of the state. Sevin is reported to be active on fruit up to 20 mm in diameter. After this ethephon is really the only chemical option still available. If you haven't used ethephon previously, be careful especially in hot weather. This is one of the few chemical thinners capable of dropping your entire crop on the ground.

Hort Society Summer meeting

We are pleased to announce that the summer meeting of the Indiana Horticultural Society will be held June 25-26 in Northern Indiana. Our meeting will be hosted by County Line Orchard, in Hobart, IN, and Fair Oaks Farm, Fair Oaks, IN. While we encourage membership in the Indiana Horticultural Society, the field tour is open to all who are interested.

County Line Orchard

County Line Orchard
200 S. County Line Road
Hobart, IN 46342

Ryan Richardson and his family have been operating County Line Orchard since they bought the farm from David and Bonnie McAfee in 2005. While Ryan had

considerable business experience (degree from the Krannert School of Management at Purdue, and as operations manager of a large family business), he was new to the fruit business. Since purchasing the operation, there have been considerable additions and improvements to the farm. The most obvious of these is the new barn completed 3 years ago. The 28,000 square ft barn was built by Wisconsin craftsmen, and the quality of construction is obvious to all. It is used for apple sales as well as events such as weddings and receptions. Other additions to the farm include the purchase of more land, doubling the acreage planted in apples and improving traffic flow and business aspects of the operation.

County Line Orchard is one of the premier retail farm markets and agri-tourism destinations in the state. Apples are the main crop grown, but they also grow pumpkins, mammoth sunflowers, and blueberries. Recent plantings on dwarfing rootstocks are looking promising. School tours are a major activity, with the farm hosting about 40,000 kids each year. Other activities popular with kids and families are the pumpkin patch, corn maze, the kids farm, campfires and of course Peter the Pumpkin Eating Dinosaur. The farm is well equipped to host many events, receptions, etc and last year hosted over 70 weddings.

During the meeting we will have an overview of the marketing and agri-tourism activities and also tour the field plantings. On Wednesday morning we will split into 2 groups. One group will talk in-depth about farm marketing and events while the other group will tour the orchards and field plantings.

The orchard is located in NW Indiana on Countyline Road, between Lake and Porter counties, one mile south of Route 6.

For more information, see their website: http://www.countylineorchard.com/

Fair Oaks Farm

Fair Oaks Farm
856 N 600 E
Fair Oaks, IN 47943

Fair Oaks Farm is a family-owned, integrated agri-tourism operation that attracts both adults and kids alike. The farm covers 30 square miles, with 30,000 cows producing over 250,000 gallons of milk every day. Every cow is electronically identified and the milk production of each cow monitored daily. While their main business is dairy, they have many activities to educate and entertain kids and families.

FAIR OAKS FARMS™

Their famous Birthing Barn ensures every child sees a calf being born. I can personally attest to the popularity of this – when my daughter was younger her class went on a field trip to Fair Oaks and that evening I received the full report!

Among the other attractions are the cheese factory, adventure center, Mooville outdoor play center, MooChoo train, Dairy Air jumping pillow, Udder Heights climbing wall, Green Gate Garden, café, gift shop, and the recently added New Pig Adventure. Another recent addition is a sizable fruit planting, comprising mostly of apples. While Fair Oaks have a lot of expertise in the dairy and agri-tourism business, they are fairly new to the apple business. They have recently hired an orchard and greenhouse manager to oversee this part of the operation.

Although we will have a brief overview of the dairying side of things, our focus will be on the fruit plantings and especially the excellent agri-tourism operation.

The farm is located just west of I-65 at exit 220.

For more information, see: http://www.fofarms.com

Agenda

Note: All times are Central (Chicago) time.

Tuesday, June 25

9:00 am	Coffee and registration
10:00 am	Overview of farm. Walking tour of facilities including packing line, events handling, kitchens, sales facilities, etc
12:00 pm	Lunch at the farm (courtesy of County Line Orchard)
1:15 pm	Simulated school tour
3:00 pm	Use of social media (Facebook, Twitter)
4:00 pm	Grower round table discussion
5:00 pm	Grower social hour
6:00 pm	Dinner – cookout at the farm (modest cost)

Wednesday, June 26

8:00 am	Coffee and registration
8:30 am	Split into 2 groups depending on interest: Group 1: Agri-tourism Group 2: Field tour of plantings
10:30 am	Adjourn and travel on your own to Fair Oaks Farm
	Lunch on your own. Plenty of eating opportunities in Hobart, alongside I-65 or at the Fair Oaks café.
1:00 pm	Assemble at Fair Oaks Farm Overview of operations Farm tour
2:30 pm	Adjourn

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.

Subscriptions are $15 per year. Subscribers will receive 12-15 issues biweekly during the growing season and monthly otherwise.

To subscribe, send your name, mailing address, and check for $15 (payable to Purdue University) to:

Facts for Fancy Fruit
Attn: Tammy Goodale
Purdue University
Department of Horticulture & Landscape Architecture
625 Agriculture Mall Drive
West Lafayette, IN 47907-2010

This newsletter can be accessed free at www.hort.purdue.edu/fff/.

Accommodation

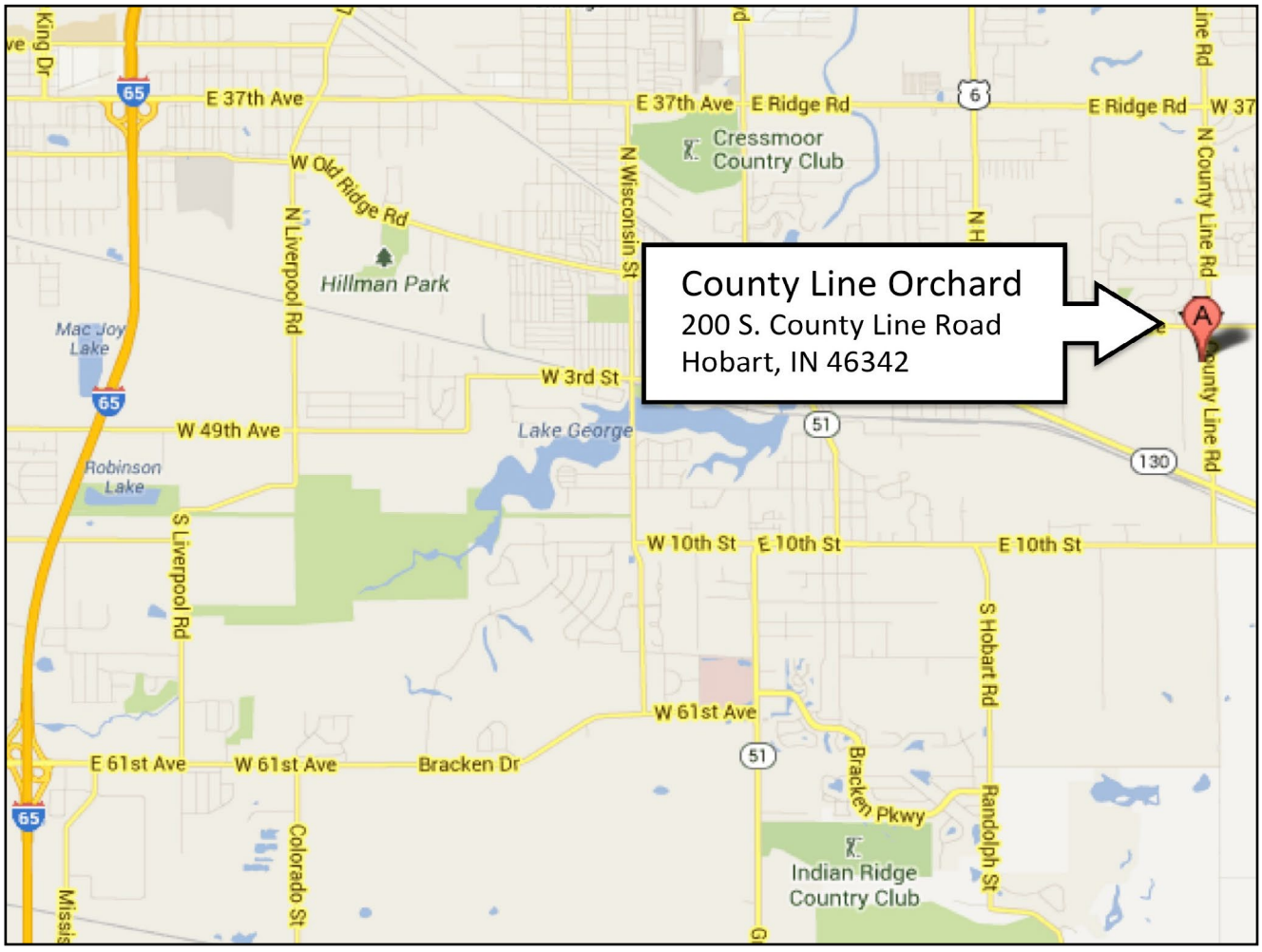
Suggested hotel
Country Inn and Suites, Portage
1630 Olmsted Dr
Portage, IN, 46368
1-219-764-0021
Rate: $89 + tax. Includes breakfast

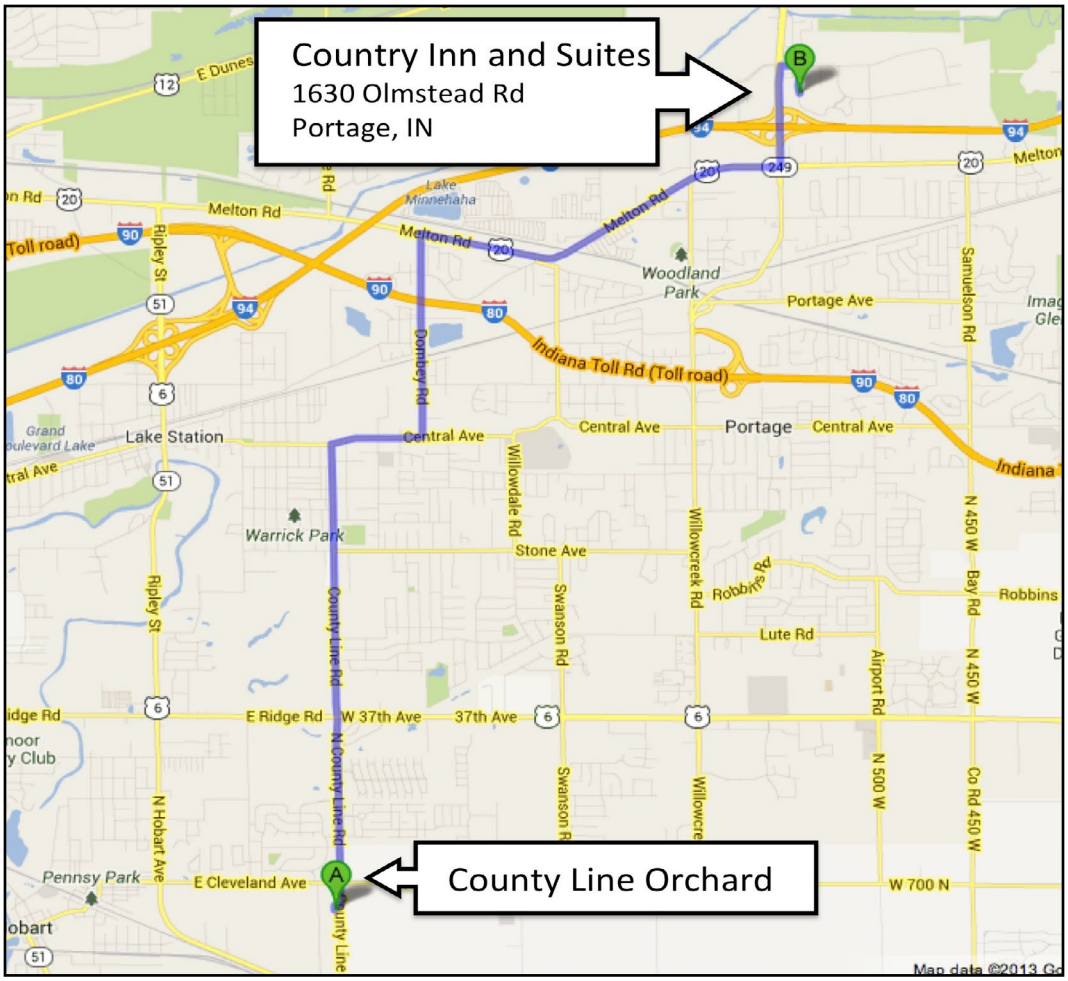
Call to make your reservations and tell them you are with County Line Orchard to receive the $89 rate.

Hotel is located approx. 7.5 miles from County Line Orchard (see map) and right next to the Bass Pro Shop.

Registration

All those interested are welcome to attend. There is no advance registration. Registration will take place Tuesday morning at County Line Orchard. Registration fee is $5.00 per family or farm.





Spotted wing drosophila

Small fruit growers need to be on the lookout for another new invasive insect pest, the spotted wing drosophila (SWD). Fruit flies or vinegar flies are nothing new for fruit growers but this one has a unique ability to cause problems because the fruit do not need to be overripe or damaged for the females to lay their eggs in the fruit. SWD females are equipped with a saw-like ovipositor (egg laying organ) that allows them to cut a slit in healthy fruit and insert their eggs. Often, this will take place just before the fruit ripen. The result is that when the ripe fruit are harvested, they are infested with little white maggots, not a good thing to attract and retain customers. This is a potentially serious pest that has caused major problems in other areas.

SWD has been confirmed in surrounding states and Bruce Bordelon, Larry Bledsoe, and I have begun a trapping program to determine the

Current bud stages West Lafayette, IN		
Apple	Peach	Grape
		
at 25mm	*approaching stone hardening*	*bloom*
Blackberry	Blueberry	Strawberry
		
petal fall	*green fruit*	*harvest starting*

range of this pest in Indiana. As we find SWD in locations around the state, we will report those findings in future issues of FFF. For more information about SWD, go to www.ncipmc.org/alerts/drosophila.pdf.

With assistance from Gowan Company and the Office of the Indiana State Chemist, we have been able to obtain two 24c Special Local Need registrations for Gowan Malathion 8 Flowable that allows up to two applications to blueberries at a rate of up to 2.5 pints per acre and up to four applications to caneberries at a rate of up to 2.0 pints per acre. The pre-harvest interval for both crops is 1 day. (Foster)

Aphids

I have seen and received several calls about outbreaks of aphids on apples and other crops. It appears that the weather we have been experiencing is quite favorable for aphids. Growers should be scouting for aphids on a fairly regular basis. The key symptom for aphids is curling leaves. If you see such leaves, inspect the underside of the leaves to see if aphids are present. Also, look for the presence of natural enemies such as lady beetle adults and larvae, lacewing adults and larvae, and syrphid fly larvae (which look like maggots). All of these predators are important in keeping aphids under control. If you see natural enemies, wait about 5 days and come back and see if the infestation is spreading or if the natural enemies are taking care of the problem. If it is spreading, an insecticide application is justified. There are a number of effective insecticides listed in ID-168, the Midwest Tree Fruit Spray Guide. In most situations, you won't have to put on an insecticide specifically targeting the aphids. Assail, Calypso, and Belay are good/excellent codling moth insecticides and will clean up the aphid infestation as well. (Foster)

Codling moth

In Lafayette, I reached biofix for codling moth (3-5 moths per trap) on May 16. At that point I started accumulating degree days (base 50). The number of degree days accumulated is shown below.

Date	DD	Total
May 16	28	28
May 17	24	52
May 18	23	75
May 19	20.5	95.5
May 20	24.5	120
May 21	29	149
May 22	25.5	174.5
May 23	19	193.5
May 24	6.5	200
May 25	7.5	207.5
May 26	5.5	213
May 27	8.5	221.5
May 28	17.5	239

I sprayed my first cover spray on May 29 at 239 degree days. Egg hatch should begin at 250 degree days, so the timing of this application should mean that there will be the maximum amount of insecticide residue on the young fruit when the eggs hatch and the larvae start

attempting to burrow into the fruit.

My petal fall spray was applied on May 13, so the first cover was 16 days after petal fall. If you were on a 10-14 day spray schedule, the first cover spray would have been made 2-6 days earlier which means that the amount of residual insecticide would have been diminished by the time of egg hatch initiation. We assume that more residue means better control.

So, why do we recommend using biofix and degree days for timing sprays for codling moth control? Let's say that you were on a 10-day spray schedule. You might think that because of the short interval between sprays you would be reducing the risk of codling moth injury. However, in this real-life scenario, you would have put that spray on 6 days too early, resulting in lower residues and potentially more damage. No insecticide will give 100% control and spraying too frequently is cost prohibitive and impractical, so using biofix and degree days to make timing decisions will give you the best control from the applications of insecticides you make. (Foster)

Fire blight

Fire blight has been reported in many orchards across the state, and continues to be a threat this season. Wet weather will continue this threat. Many growers failed to apply the necessary applications of streptomycin (at king bloom, bloom and possibly at the beginning of petal fall if the orchard was high risk), and fewer still implemented the use of apogee for shoot control. Having missed the best opportunities to protect against fire blight, what is a grower with fire blight in the orchard to do now?

Figure 1. Shoot blight, with the characteristic shepherd's crook.

Although we have all passed out of the most susceptible period of fire blight (bloom), trees remain susceptible to secondary spread of this disease until terminal growth ceases. With the cool wet weather we are having, we may not have reached this point in the northern part of the state. Secondary spread develops when stormy weather, especially hailstorms, occurs after the primary (blossom) infections. The amount of fire blight that develops after severe weather appears to be directly related to the amount of disease in the orchard, with inoculum levels highest near infected blossoms, cankers, or blighted shoots that were not previously removed.

Figure 2. Fire blight on freeze-killed buds. Note developing, blackened canker behind the spur.

For this reason, growers should monitor their orchards for fire blight strikes, removing any and all infected shoots, sterilizing between cuts, if the incidence of the disease makes this possible. Growers can use a spray bottle of 10% bleach, or any other disinfectant (Lysol, trisodium phosphate, quaternary ammonium compounds), to sterilize between cuts, as poor sterilization techniques can inadvertently spread fire blight. Keep in mind that pruning of large trees may be impractical because of the difficulty of doing a thorough job of blight removal. Furthermore, pruning can sometimes stimulate additional shoot growth; new growth is always more susceptible to disease, so discretion is advised. In these instances where pruning poses a greater risk than not, delay until the dormant season to properly prune with minimal risk of spreading disease. I do not recommend the "ugly stub method". Subsequent studies have shown mixed results with this approach, which still leaves fire blight inoculum present, and presents an excellent infection court for black rot, white rot and other opportunistic pathogens. The rapid and complete removal of fire blight strikes is the only proven method to limit secondary spread and is essential for minimizing loss. That said, keep in mind that pruning may not be effective during severe fire blight outbreaks. How do you decide whether to prune or not?

Dave Rosenberger of Cornell has suggested a type of fire blight triage when it comes to making a pruning decision under more complex conditions, going from highest to lowest priority, and is a great approach:

Young orchards (3-7 years old) with few strikes should be pruned out as soon as they appear, especially on the highly susceptible cultivars (Fuji, Gala, Ginger Gold, Ida Red, Jonathan, etc). Failure to do so increases the likelihood that blight will continue to spread to adjacent trees and possibly even into the rootstocks of infected trees. Perform proper pruning—at least 12" away from symptomatic area, prune to best available

branch angle, sterilize between cuts.

Young orchards (3-7 years old) with severe strikes. Take out trees, if necessary.

Older orchards with a few strikes. Pruning out infections in mature trees may not be practical, but mature trees with a full crop will set terminal shoot buds earlier than young trees, or trees without a crop. When trees set terminal buds, blight stops spreading both between trees and within the affected trees. Under dry conditions when only a few strikes occur, pruning to the previous year's growth (the non-infected 2-year-old wood) should limit spread and reduce inoculum. This strategy also works when infections are few or is limited in location (one block or area of the orchard).

DNR- Definitely Need to Remove! Okay, a bad triage pun, but this is group you prune at ground level-- - trees with so many strikes that most of the tree would need to be removed. In this instance, severe pruning can stimulate new growth that can become re-infected, thereby increasing and not removing inoculum! This is indeed, the sharpest cut of all!

Like everything, there are debates whether the prunings should be removed from the orchard, or allowed to dry out and become mulched. For a more thorough treatment of this issue, see Mark Longstroth's article at: http://msue.anr.msu.edu/news/when_to_prune_out_fire_blight_to_prune_or_not_to_prune.

Trees should be examined two or three times weekly until either the epidemic slows or tree growth slows (which will slow the epidemic). One the plus side—we should be slowing with all this heat and dry weather! One final note: Streptomycin or other antibiotic sprays should NOT be applied during summer because summer applications can result in rapid development streptomycin-resistant strains of the blight pathogen.

Finally, it is important to stress that THE ONLY effective chemical control for trauma blight (that secondary infection that results from severe weather) currently available is streptomycin. Streptomycin needs to be applied within 18hr, but I would strongly recommend sooner (literally, as soon as possible) to maximize control, especially if there are active fire blight cankers or strikes in the orchard or if the trauma event resulted in extensive foliar damage. The sooner streptomycin can be applied after the event the more effective it is in killing the bacteria before they infect and spread. Do not apply streptomycin later than 18 hr. The repeated use of streptomycin sprays after petal fall encourages the selection of streptomycin-resistant Erwinia amylovora, the bacterium that causes fire blight. We don't need to add Indiana to the list of states with strep-resistant E. amylovora (Missouri, California, Washington, Oregon, New York and Michigan). Finally, streptomycin should never be sprayed as a preventive measure for shoot blight. This is not an effective use of this material and only promotes the development of streptomycin-resistant strains. (Beckerman)

USDA reminds producers of approaching sign-up deadline for crop year 2011 supplemental revenue assistance payments program(SURE)

Julia A. Wickard, State Executive Director of USDA's Farm Service Agency (FSA) reminds producers that the June 7, 2013 deadline for the Supplemental Revenue Assistance Payments Program (SURE) for crop year 2011 is approaching.

"It is crucial that producers meet the deadline for the SURE Program in order to receive disaster assistance for the 2011 crop year," said Wickard. "FSA realizes that farmers take risks everyday and these programs form part of the safety net that keeps producers operating after devastating natural disasters and during times of low market prices."

The SURE program compensates producers for production and/or quality losses during times of disaster. All producers who have experienced crop production and/or crop quality losses during the 2011 crop year must apply for SURE program benefits by the June 7, 2013 deadline. Eligibility requirements differ between producers located in counties designated as a primary or contiguous disaster county by the Secretary of Agriculture and between producers located in non-disaster counties. In addition to other eligibility requirements, producers must have purchased crop insurance through the Federal Crop Insurance Act or the Noninsured Crop Disaster Assistance Program (NAP).

For more information on the SURE Program, contact your local FSA office or visit the FSA website at http://www.fsa.usda.gov/sure.

Upcoming events

June 4, 2013.
Eastern Indiana Fruit Growers Meeting
This meeting will take place at:
Stuart Ford residence
10521 W 600 S
Red Key, IN 47373

June 25-26, 2013.
Indiana Hort Society Summer Meeting
This year's event will be in northern Indiana at County Line Orchards and Fair Oaks Farms. See article in this newsletter for details or contact Peter Hirst, hirst@purdue.edu

August 19-21, 2013.
Midwest Produce Conference and Expo. Hyatt Regency Chicago. Chicago, IL. For more information and to register go to, http://www.midwestproduceexpo.com/

January, 21-23, 2014.
Indiana Horticultural Congress and Trade Show, Wyndham Indianapolis West, Indianapolis, IN.
http://www.inhortcongress.org

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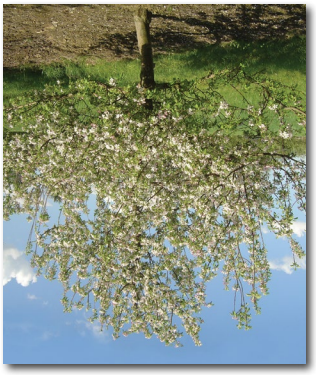

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