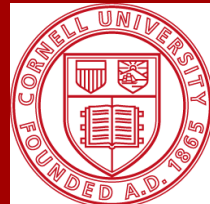




# FRUIT NOTES

## Lake Ontario Fruit Program



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### 2012 Census of Agriculture Released

Via USDA NY Field Office (Albany) Press Release, Blair Smith

On Friday (May 2), the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) released the final 2012 Census of Agriculture results sharing a wide-range of information about what agricultural products were raised in the United States in 2012, and where, how and by whom they were grown. The data, which is reported at the national, state and county level, will help farmers, ranchers, local officials, agribusiness and others make decisions for the future.

"The 2012 Census of Agriculture provides a wide range of demographic, economic, land, and crop and livestock production information as well as first-time or expanded data," said Blair Smith, New York State Statistician. **"Many of these data about New York and our counties are only collected and reported as part of the every-five-year census."**

The 2012 Census of Agriculture data show the following key trends for New York:

- Land in farms increased slightly from 2007 to 7.18 million acres.
- Number of farms decreased 2 percent from 2007 to 35,537 in 2012.
- The value of livestock products sold increased 11 percent to \$3.17 billion.
- The value of crop products sold increased 44 percent to \$2.25 billion.
- The average age of farm operators continued the long term trend and increased to 57.1 years.
- Net cash farm income increased 3 percent to \$1.22 billion.

To provide easier access to the data, NASS created a number of online tools for people to find and use Census data, including:

- [Quick Stats 2.0](#) - an online database to retrieve customized tables. For those new to this tool, a new [tutorial video](#) provides easy-to-follow instructions.
- [API](#) - a tool for developers.
- [Agricultural Atlas Maps](#) - profiles of the nation's agriculture at the county-level in a series of multicolor pattern and dot maps.
- [Desktop Data Query Tool](#) - a downloadable desktop tool to analyze data without Internet access once you have downloaded and installed this tool.

For more information about the Census of Agriculture including all the final 2012 Census of Agriculture results, and tools to access and share the data, visit [www.agcensus.usda.gov](http://www.agcensus.usda.gov).



Cornell University  
Cooperative Extension

Lake Ontario Fruit Program  
in Wayne, Orleans, Niagara,  
Monroe, and Oswego Counties  
<http://lof.cce.cornell.edu>

Deborah Breth  
Area Extension Educator  
Team Leader, Pest Management  
585-747-6039 [dib1@cornell.edu](mailto:dib1@cornell.edu)

Alison De Marree  
Area Extension Educator  
Production Economics  
315-573-8881 [amd15@cornell.edu](mailto:amd15@cornell.edu)

Craig Kahlke - Newsletter Editor  
Area Extension Educator  
Fruit Quality Management  
585-735-5448 [cjk37@cornell.edu](mailto:cjk37@cornell.edu)

Mario Miranda Sazo  
Area Extension Educator  
Cultural Practices  
315-719-1318 [mrm67@cornell.edu](mailto:mrm67@cornell.edu)

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Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.

Every effort has been made to provide correct, complete, and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are still possible. These recommendations are not a substitute for pesticide labeling. Please read the label before applying any pesticide.

## 2012 Census: Bearing and Non-bearing Apple Acreage - Top Counties

culled from the 2012 census, and opinion by A. De Marree

#	2012 US County	Apple Acres	#	2012 Eastern US County	Apple Acres	#	2012 Western US County	Apple Acres
1	Yakima Co, WA	50,270	1	Wayne Co, NY	20,387	1	Yakima Co, WA	50,270
2	Grant Co, WA	43,471	2	Adams Co, PA	12,039	2	Grant Co, WA	43,471
3	Okanogan Co, WA	20,774	3	Kent Co, MI	11,592	3	Okanogan Co, WA	20,774
4	Wayne Co, NY	20,387	4	Orleans Co, NY	5,475	4	Benton Co, WA	16,380
5	Benton Co, WA	16,380	5	Frederick Co, VA	5,114	5	Franklin Co, WA	11,151
6	Adams Co, PA	12,039	6	Ulster Co, NY	4,819	6	Douglas Co, WA	9,546
7	Kent Co, MI	11,592	7	Oceana Co, MI	4,299	7	Walla Walla Co, WA	7,724
8	Franklin Co, WA	11,151	8	Ottawa Co, MI	4,014	8	Chelan Co, WA	6,996
9	Douglas Co, WA	9,546	9	Henderson Co, NC	3,881	9	Adams Co, WA	5,522
10	Walla Walla Co, WA	7,724	10	Berrien Co, MI	3,675	10	Umatilla Co, OR	2,946
11	Chelan Co, WA	6,996	11	Van Buren Co, MI	3,113	11	Santa Cruz Co, CA	2,423
12	Adams Co, WA	5,522	12	Clinton Co, NY	2,730	12	Sonoma Co, CA	2,393
13	Orleans Co, NY	5,475	13	Niagara Co, NY	2,663	13	Kern Co, CA	2,351
14	Frederick Co, VA	5,114	14	Berkley Co, W.VA	2,607	14	San Joaquin Co, CA	1,625
15	Ulster Co, NY	4,819	15	Muskegon Co, MI	1,903	15	Canyon Co, ID	1,555
16	Oceana Co, MI	4,299	16	Mason Co, MI	1,605	16	Utah Co, UT	1,007
17	Ottawa Co, MI	4,014	17	Columbia Co, NY	1,579	17	Hood River Co, OR	890
18	Henderson Co, NC	3,881	18	Newaygo Co, MI	1,515	18	El Dorado Co, CA	839
19	Berrien Co, MI	3,675	19	Worcester Co, MA	1,460	19	Fresno Co, CA	768
20	Van Buren Co, MI	3,113	20	Leelanau Co, MI	1,314	20	Stanislaus Co, CA	700
21	Umatilla Co, OR	2,946	21	Grand Traverse, MI	1,200			
22	Clinton Co, NY	2,730	22	Franklin Co, PA	1,194			
23	Niagara Co, NY	2,663	23	Monroe Co, NY	1,126			
24	Berkley Co, W.VA	2,607	24	Bedford Co, PA	1,100			
25	Santa Cruz Co, CA	2,423	25	Washington Co, MD	1,036			
		<b>263,611</b>			<b>101,440</b>			<b>189,331</b>

Please note that there are nine major apple producing counties in Washington State which totaled 171,834 apple acres in 2012. Apple acreage has increased both in Washington State and in Wayne and Orleans Counties, NY since 2012. Washington State can easily produce 175 million bushels of apples during an “on year”. We expect that 2014 will be an “on year”.

# Thinning Without Carbaryl in 2014

Terence L. Robinson and Steve Hoying

In the Northeastern US, almost all apple orchards are chemically thinned early in the season each year using a combination of either Naphthaleneacetic Acid (NAA, a synthetic auxin plant growth regulator) plus carbaryl or Benzyl Adenine (BA, a synthetic cytokinin plant growth regulator) plus carbaryl. Carbaryl, which is a carbamate insecticide, causes some thinning by itself but also enhances the thinning efficacy of either NAA or BA. Carbaryl has been an essential component of chemical thinning programs for more than 40 years. However, there is concern that carbaryl will be removed from the market by regulatory action either in the US or in Europe. If carbaryl were removed from the market, apple growers in the Northeastern US would not achieve adequate thinning with NAA or BA alone. In 2014, one US based supermarket chain has prohibited the use of carbaryl on apples they purchase even though it is still a legal product. This will require growers who supply apples to this supermarket chain to do their chemical thinning this year without carbaryl. We have been researching alternatives to carbaryl for several years to respond to this possible scenario. This article details our proposed solutions to the problem.

There are 5 strategies we recommend for thinning without carbaryl:

1. Multiple thinning sprays
2. Higher rates of NAA
3. Mixtures of BA and NAA
4. Additions of oil to BA
5. Additions of Regulaid to NAA

1. Multiple thinning sprays. Probably the best approach to thinning without carbaryl in 2014 is to use multiple thinning sprays beginning at bloom and then use the precision thinning protocol to measure progress toward the target fruit number after each spray. Thus, a spray program for a hard to thin variety like Gala could begin at bloom with a 2% spray of Ammonium Thiosulfate (ATS) or a 10 ppm spray of NAA followed by a petal fall spray of NAA+Maxcel, followed by a 10-12mm spray of

NAA+Maxcel. A spray program for an easy to thin variety like McIntosh could begin at petal fall with a NAA+BA spray followed by a second spray of NAA+Maxcel at 10-12 mm. With good assessments after each spray using the fruit growth rate model growers could adjust rates to achieve the target fruit number.

2. Higher rates of NAA. Thinning with NAA alone require higher rates than when thinning with combination sprays of NAA+carbaryl. A good rule of thumb is to increase the rate of NAA by 50% over the rate you have used when combined with carbaryl. For example, if you used 5ppm NAA+carbaryl last year on McIntosh, this year you should use 7.5ppm NAA alone. Likewise if you used 7.5ppm NAA+carbaryl on Empire last year, you should use 10ppm NAA alone. However, very high rates of NAA can cause a temporary stunting of fruit growth and a negative effect on final fruit size. Thus, we recommend to not exceed 10ppm even though up to 20ppm will give more thinning.

3. Mixtures of BA and NAA. BA alone is a weak thinner and requires very high rates for effective thinning. However, high rates (above 150ppm) can cause lateral bud break which we don't want. Thus a high rate of BA alone is not a good solution. Carbaryl gives a synergistic effect with BA which is the reason the mixture of BA and carbaryl is so useful. We have had very good success mixing BA and NAA for several varieties. In one study (see reference below) we evaluated the mixture of BA and NAA on 12 varieties (Braeburn, Cortland, Delicious, Empire, Fuji, Gala, Gingergold, Jonagold, Jonamac, Liberty, McIntosh and Sansa). We had very successful thinning on 10 of the 12 but with Delicious and Fuji we ended up with numerous pygmy fruits from this mixture. For small fruited varieties like Gala, Empire, Jonamac etc., we recommend the combination of BA+NAA. Our studies indicated that 7.5ppm of NAA could substitute for the carbaryl. Thus if last year you thinned Gala with 75ppm BA+1pt Sevin this year you would spray 75ppm BA+7.5ppm NAA.

4. Additions of oil to BA. Small amounts of spray oil (1pt/100 gallons) added to a spray of BA can increase thinning efficacy since the oil acts as a penetrant. With most BA sprays, only a small fraction of the spray deposited on the leaf or fruit is absorbed into the plant where it can act as a thinner. Commercial BA formulations come with a surfactant already added to improve uptake; however more uptake can be achieved with oil. Please be advised that the use of oil carries its own risks of inducing russetting if captan is applied shortly before or shortly after the BA+oil spray. This is especially true if the BA+oil spray is applied when fruits are small (petal fall to 15mm) or following a frost. Thus, **we give this urgent caution: do not use oil as a surfactant with BA if you are using a captan program from petal fall to 15mm.** The situation where BA+oil is most useful is with Delicious and Fuji where NAA causes pygmies. For these two varieties we suggest a thinning program that does not use NAA but rather BA. However, to get enough thinning response from the BA you must use some oil to get greater uptake. If last year on your Red Delicious or Fuji you used 100ppm BA+ 1pt of carbaryl this year you should use 100ppm BA+ 1pt of oil.

5. Additions of Regulaid to NAA The use of Regulaid (1pt/100) with NAA can significantly increase the thinning efficacy of NAA. The Regulaid increases uptake of NAA in a similar manner to oil's effect on BA uptake. The use of Regulaid is very common in WA State but not so

common in NY State because of the risk of over-thinning in some years and the risk of russetting due to increased captan uptake when captan is used shortly before or after a NAA spray that contains Regulaid. Thus, we give the same caution as with BA+oil- **do not use Regulaid as a surfactant with NAA if you are using a captan program from petal fall to 15mm.** If Regulaid is used, it can essentially substitute for the carbaryl. For example if last year you used 5ppm NAA+carbaryl on McIntosh, this year you could use 5ppm NAA+1pt/100 of Regulaid. Likewise if last year you used 7.5ppm NAA+carbaryl on Empire, this year you could use 7.5ppm NAA+1pt/100 of Regulaid.

Final Thoughts: For those who can still use carbaryl, we continue to recommend sequential sprays with either BA+carbaryl or NAA+carbaryl. Mixtures with carbaryl give the most consistent and effective thinning. I hope other supermarket chains will not prohibit the use of carbaryl since it is still a legal product and is such an essential component of effective thinning programs in the Eastern US. For those NY growers who must thin this year without carbaryl, the options listed above should result in successful thinning this year if we are "lucky".

Reference:

Robinson, T.L. 2006. Interaction of Benzyladenine and Naphthaleneacetic Acid on fruit set, fruit size and crop value of twelve apple varieties. *Acta Hort.* 727:283-290.

## **Considerations for Pruning Peach Trees with No Crop**

Rich Marini, Penn State University

Due to low winter temperatures some peach varieties may have no crop this year. Below are some considerations for managing trees with no crop.

**Fertilization:** First, consider fertilization. Non-cropping trees need nitrogen, but not as much as cropping trees. A general rule of thumb that has worked well in the past is to apply about half the normal rate of fertilizer. This will allow the trees

to grow fairly normally without encouraging too much vigor. Some growers like to split their fertilizer application by applying half about a month before bloom and the second half around shuck split. The second half is applied only when the trees have a crop.

**Pruning:** Trees with no crop also need to be pruned. Sometimes following a frost most of the fruit is in the tops of the trees and growers are reluctant to remove the crop. Due to frost in the

south and low winter temperatures in the Midwest, the eastern peach crop will likely be short this year and peach prices should be good. So there will be an economic incentive to leave the trees a little higher than normal. This is an economic decision that each grower must make, but be aware that if branches are retained in the tops of the trees, it will take two or three years to bring tree height back to the original height. **For trees where no crop is expected, trees will benefit from a normal type of pruning (review the peach pruning article prepared by Steve!)**

Usually we try to keep the fruiting wood or “hangers” close to the scaffold limbs, so this would be a good time to remove secondary branches (branches that are 2 or 3 years old) arising from the scaffold branches. New hangers will develop along the scaffold branches this summer and the tree structure will be simplified. There may be benefits to delaying pruning a few weeks later than normal. Early peach tree growth depends almost entirely on carbohydrate reserves from last season that are stored in the woody parts of the tree. If pruning is delayed until about 2 or 3 weeks after the normal bloom period, some of the growth that developed at the expense of those reserves will be removed and vegetative growth will be slightly suppressed this season.

Also consider summer pruning to retain fruiting wood in the lower part of the canopy. Summer pruning about 2 to 3 weeks before harvest will slightly enhance fruit red color development with some varieties, but pruning in late June to early July is required to enhance flower bud formation and to keep hangers alive in the lower parts of the canopy. To retain fruiting wood in the lower canopy, consider pruning out vigorous upright shoots in late June.

**Effects on Next Season's Crop:** It's also important to realize that loss of this year's crop will affect next season's crop. Peaches are much less biennial than apples, but fruiting reduces the number of flower buds on the lower sections of the shoots that will be produced this summer. So there will be more flower buds per foot of shoot this winter, and you should plan to prune more aggressively next spring to lower the fruiting potential of the tree.

Also, trees with a light crop and trees that have been thinned during bloom have flower buds that are more tolerant of low winter temperatures. So winter survival of flower buds will be greater this winter for trees that did not crop this summer. The combination of higher flower bud density plus increased cold hardiness will likely lead to excessive crop loads next spring so be prepared to thin aggressively next spring.

## Peach Pruning

Steve A. Hoying

(Note: Peach pruning has only started for a few growers who will be using the Darwin machine for mechanical blossom thinning in the next days.)- For those of you with a relatively good or full crop:

**Prune to thin!** Peach trees often set 10 times as many fruits as needed for a full crop! Hand thinning is expensive, time consuming, and the quality of your work can affect ultimate fruit size (the bottom line). By removing ½ the potential flowers during pruning you can significantly reduce the amount of hand thinning required later. Recent work has shown that the number of

peaches on the tree is as important as the ultimate peach spacing on the tree. As with apples, the earlier the thinning is done the better result in fruit size. This shows us how important pruning to reduce crop load is for achieving maximum fruit size.

**Peaches should be pruned at bloom** for several important reasons. Pruning at bloom allows you to assess the crop and make intelligent decisions about how much wood can be taken off and still preserve a full crop and encourage good shoot growth. Cytospora canker (also known as Valsa

canker) is a cool weather fungi that can actively colonize in the spring. Fresh cuts made during cool weather (dormant or early spring) are an excellent site for colonization. There is no effective chemical control. Only dry weather and rapidly growing tissue can minimize the amount of canker colonization. Later pruning results in smaller fruit size. This is especially important in blocks near existing peaches, cherries, or hedgerows where the fungi may be present in huge amounts.

**Prune with warm dry weather in the forecast.**

This allows rapid growth to heal wounds and prevents fungal spores from being washed into fresh cuts.

**Do not leave stubs on peaches unless you want to regrow fruiting wood in that portion** of the tree. Stubs commonly can become infected with canker since they do not easily form healing callus, flush cuts callus over and heal quickly.

**Remove all very fine wood throughout the tree** particularly on the trunk and main scaffolds. This wood especially when shaded dies and becomes a site for canker infection on the structural parts of the tree. Ideally all wood throughout the tree is "pencil sized".

**Remove all visible cankers** throughout the tree. If it occurs on the trunk or main scaffolds consider "surgery" to remove infected tissue back to the wood.

**Prune according to the planting system** chosen and the age of that system. Each system requires a different pruning scheme. Even the same system with different spacings can require different approaches. I have pruning schemes available for Open Center (closely spaced and widely spaced), Central leader, Fusetto, and Perpendicular Vee. (Steve can be reached via email at [sah19@cornell.edu](mailto:sah19@cornell.edu)).

## Planning Pink and Bloom Insect Management

Art Agnello

The forecast for the end of the week promises some early summer weather, so most areas should be within hailing distance of pink bud by the weekend. It's therefore not too early to be thinking of pink bud insect management needs now, so as not to be caught off guard in case we get into one of our famous 'let's floor it' scenarios.

First, if **San Jose scale** is a concern and you have yet to do anything to head it off, there is still a limited window of suitable management tactics available before foliar development progresses too far to permit effective coverage. If you are intending to use oil, a 1% spray through tight cluster can be quite effective provided you're able to thoroughly cover the wood surfaces. Insecticidal options include Centaur (34.5 oz/A), Esteem (4-5 oz/A), Lorsban (4EC or Advanced at 1.5-4 pt/A; or 50WP at 3 lb/A) or Supracide 2EC at 3 pt/A). Remember that you are limited to only 1 application of Lorsban in apples per season,

whether prebloom as a foliar or trunk spray, or as a postbloom trunk application. The pests of greatest concern at pink bud are usually **rosy apple aphid** (RAA), **oriental fruit moth** (OFM), and **tarnished plant bug** (TPB), with **European apple sawfly** and **plum curculio** waiting in the wings. OFM just made its entrance in the Hudson Valley last week, Monday in Albion, so it will not be too long before biofix is established in a number of plantings statewide. In blocks with a history of OFM infestation, 1 or 2 traps checked at least weekly will help indicate the timing and relative size of the first generation population this year. What should be the response when the numbers start building? In a normal year, the average temperature ranges tend to result in very little egg hatch during pink and bloom, as this usually holds off until petal fall. If we end up with sufficient egg hatch before actual bloom, a pink application of an internal worm material like Altacor, Belt or Delegate would be an option;

although this is earlier than we would normally expect to need them, these products would also address codling moth, which would not be far behind an early OFM hatch. For growers wishing to save these A-list products until after petal fall, a B.t. Product would be another option from pink to bloom. Regardless, these "what-if" scenarios underscore the value of using (and frequently checking) pheromone traps to set the clock on OFM and CM development in specific blocks. These first flights of the season give us the best opportunity to get on top of internal worm control, because timing and development of the different stages only gets more complicated (i.e., less synchronized) as the season progresses. Depending on block history and personal philosophy, RAA and TPB can be either annual challenges, puzzling but token annoyances, or else a complete flip of the coin. Do they occur, do they need to be treated, are they able to be controlled adequately, and does it matter if they're just ignored? These pests also have yet to indicate their potential for problems this season, although it's likely that rosies can be found already in some orchards, given enough inspection. It's possible to scout for RAA at pink, but this is often not practical, considering all the other things demanding your attention at this time. TPB is not a good candidate for scouting, and if the bloom period continues to be prolonged by cool, wet weather, a pink spray is of little use. You'll need to decide for yourself whether this bug is of sufficient concern to you to justify treating.

We have seen few orchards in western NY (and only slightly more in the Hudson Valley) where TPB control is warranted, simply because the most effective treatment has been to use a pyrethroid, which: a) kills predator mites, and b) still rarely lowers TPB damage enough to be economically justified. If you elect a spray of Ambush, Asana, Baythroid, Danitol, Pounce, Warrior or Voliam Xpress at pink for plant bug, you'll take care of rosy apple aphid (plus mullein plant bug and STLM) at the same time. If RAA is your main concern, you could elect a pink spray (non-pyrethroid options include Actara, Assail, Beleaf,

Calypso, Esteem, Lannate, Lorsban, Thionex, Vydate, Warrior, or Voliam Xpress) if you have the luxury of a suitable application window. Once again, be sure to consider potential impacts on non-target species such as beneficials, and be aware of your bee supplier's concerns about effects on pollinating bees. For more perspective on this issue, see the article in next week's newsletter, entitled "Pollinators and Pesticide Sprays during Bloom in Fruit Plantings", from Penn State.

**Leafrollers** are also out there, but only a portion of the population will be active at this time, so although you might get good control of any larvae you spray now, don't forget that the rest of the population won't be out (and susceptible to sprays) until bloom or petal fall, so it's probably better to wait until then to address this pest.

Finally, if **mites** normally need attention in a given block, and you haven't elected (or been able to use) a delayed-dormant oil application as a part of your early season mite management program, you'll be needing to rely on either: one of the ovicidal acaricides (Apollo, Savey/Onager, Zeal) available for use, whether before or after bloom; a rescue-type product after bloom (add Acramite, Kanemite, Nexter, and Portal to the above list) that can reduce motile numbers later on if they should begin to approach the threshold; or Agri-Mek, which falls somewhere between these two strategies. Like the true ovicides, Agri-Mek should also be considered a preventive spray, as it needs to be applied early (before there are very many motiles) to be most effective, generally within the first 2 weeks after petal fall. Recall that Proclaim is related to Agri-Mek, and also has some miticidal activity, if you expect to use it at petal fall for leafrollers. For any of the rescue products, the operational threshold (through June) is an *average* of 2.5 motiles per leaf (see the chart on p. 73 of the Recommends).

**Lake Ontario Fruit Program  
Cornell Cooperative Extension  
12690 NYS Rt. 31  
Albion, NY 14411**

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**Grower Assistance Needed with Testing Attract-and-Kill Methods for Managing  
Spotted Wing Drosophila**

Cathy Heidenreich

Dear Blueberry and Fall Raspberry Growers,

Entomologists at Cornell are putting together a project for the 2014 field season to test if we can reduce infestations from Spotted Wing Drosophila (SWD) through what we call attract and kill stations. We know of several very attractive baits. The question is whether a reasonable number of traps with attractive baits and some sort of kill device (drowning solution or insecticide) can significantly reduce local populations of SWD and therefore reduce or eliminate the need to treat vulnerable crops with insecticides.

We are looking for field sites to test this approach. In particular, we are focusing on blueberry plantings, but would consider fall raspberry plantings as well, that are at least 0.5 acres in size where we can put out attract and kill stations and compare SWD infestations with other plots where no kill stations are deployed. We could use a larger plot and place a treatment at each end of the planting. It would be helpful if no insecticides are used in the planting during the trial and therefore, in some ways, a recently abandoned planting might be best or a situation where the potential of some infestation would not cause economic hardship. Also, we need plantings within an hour or so from Geneva, NY to expedite frequent data collection.

If you are interested in helping or learning more about the project please contact Dr. Greg Loeb at [gme1@cornell.edu](mailto:gme1@cornell.edu) or 315-787-2345.