



How Do You Thin Your Apples (and Why)?

Posted by [Mike Biltonen](#)

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[Mike Biltonen](#)

[How Do You Thin Your Apples \(and Why\)?](#)

March 04, 2023 03:23PM

Registered: 11 years ago

Posts: 298

At the recent Berkshire Roundtable (affectionately known as Stump Sprouts) we had a vigorous discussion about apple thinning. There was discussion of seasonal objectives, philosophies, sprays, and economics. This led to a what I hope will be a good discussion here about about how "you" - the apple grower - approach thinning and why. One of the principle objectives I had was to create an exhaustive list of any material you may have used or thought about using to thin blossoms or fruit. Another was to establish the importance of economics of thinning your orchard. Lastly was to get a broad understanding of your holistic philosophy towards thinning.

Feel free to chime in and I will create a summary of the responses as we go along.

I'll start:

Materials

lime sulfur

fish Oil

bicarbonate

salt

Horn Silica (BD501)

Regalia

Acidic compounds (e.g., vinegar, caprylic acid, etc.)

ProTone (ABA)

Wuxal amino plant (biostimulant) - not organic

Ammonium Thiosulfate (ATS) - not organic

**these last two are interesting in that though not organic, there are other organic biostimulants and fertilizers that could be tested in research.

Like all HON threads, this is intended to be an interactive conversation. The more we need to know about thinning, the less we actually know since research has been mostly focused on west coast conditions and dessert varieties. It also begs the question about how we can approach thinning; what tools do we have available?

Tools/Resources

Carbohydrate Modeling

Pollen Tube Growth Model

Ploidy

Biennialism

Orchard design and varietal diversity

Fertility Practices

Production History

Fruit Quality Objectivess

Climate and Weather history

Cultural Practices (pruning, hand thinning, mechanical thinning, etc.)

[Mike Biltonen, Know Your Roots](#)

Zone 5b in New York

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[Brittany Kordick](#)

[Re: How Do You Thin Your Apples \(and Why\)?](#)

March 06, 2023 10:29PM

Registered: 4 years ago

Posts: 211

Thanks so much, Mike, for putting together this list! It seems short, but my hitherto known list of organic thinners was a hell of a lot shorter before this meeting. We have played around with lime sulfur and baking soda primarily, but due to our crazy number of varieties, as well as our increasing reliance on biologicals during bloomtime, we have concluded that hand-thinning is our only recourse (not that that makes it get done with any kind of regularity). We really don't want to be using stuff during bloom that disrupts the biological

goodness we've tried so hard to foster. I've been trying to think outside the box for the past couple of days, as far as anything else to add to the list and initially thinking along the lines of, what could do scattershot damage to blossoms, but not leaves and not fruit, that we haven't already thought of?

In short, I haven't come up with anything else not on your list, but thinking about our own desire for something pretty darn soft that wouldn't be likely to mess about with any beneficial bacteria or fungi we're cultivating, I got away from thinking about damaging the blossoms and now thinking about simply repelling pollinators after the king blossom is set. Of course, there are actual repellents on the market that would work, but a quick search turned up citronella and garlic as particularly "natural" options.

As far as taking advantage of curculio or other pests for thinning, I find it hard to think of the damage in those terms since it is an environmental given so far outside of our control (and we are also an orchard that tends to have beyond merely cosmetic curculio damage to fruitlets that do not drop from curculio abscission, so for us it's not simply that the crop is thinned by curculio and the remainder are sellable apples; for us, much of the fruit that survives curculio oviposition are shriveled, misshapen apples that don't even qualify as second quality). To me, it's like saying freeze events or hail storms are thinning agents. We certainly have to consider curculio damage, freeze events, potential hail, etc., constantly when looking at how/when to thin further, since these are going to potentially contribute to thinning the crop whether we like it or not, but I don't see how we can really harness environmental factors like these to optimum advantage.

By the by, this list business might be a good thing to do in general to sum up all the available options with regards to all sorts of topics. Particularly within the HON forum, stuff tends to stay pretty specific surrounding an issue. I'll try to keep my eyes out for places where a list might do us all some good.

Thanks,
Brittany

[Kordick Family Farm](#)

Westfield, NC

Zone 7a

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[Shane Patrick](#)

[Re: How Do You Thin Your Apples \(and Why\)?](#)

March 07, 2023 02:38PM

Hi Gang,

Registered: 2 years ago

Posts: 22

We're in transition. The previous owners used thinning techniques that gave MP "The willies." I had all intentions of using some of the materials listed by Mike above last spring. Along with early blooming cultivars planted next to late bloomers in what can charitably be called a haphazard fashion, we also struggle with clay soil and spring conditions that often involve sinking tractor tires. We've begun to improve the water draining and holding characteristics of our soil but it will be a few more years.

Last year, we decided to exercise patience rather than make ruts and as such were left with hand-thinning as our option. We didn't bother with the Mac's, Cortlands or Empires but focused on the harder to find (more valuable) cultivars. Ladders were in the canopy thinning blossoms and fruitlets when we fell behind. Finally, we shrugged our shoulders and moved on to other projects. Actually, I thinned fruits all summer. I know that helping return bloom is a short window, those dang gibberellins, but even though I only have a couple full seasons under my belt, I also know that when two apples touch both are bound for the cider bin at best.

I wonder about bud thinning in the fall while harvesting and during winter pruning. I realize that even the experts struggle to accurately ascertain fruit vs leaf buds. But spreading the work load is attractive.

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[Chris McGuire](#)

[Re: How Do You Thin Your Apples \(and Why\)?](#)

March 13, 2023 04:08PM

Hi,

Registered: 1 year ago

Posts: 18

This is an extremely important topic in my opinion. These notes are from an orchard of dessert apples on dwarfing rootstocks, making sprays with an airblast sprayer:

We have tried potassium bicarbonate, Regalia+1% JMS Stylet oil, 3% and 5% Golden Pest Spray vegetable oil, protone, and hand thinning

Potassium bicarbonate. Sprayed 2 or more times during bloom at 15 lbs per acre in 100 GPA, this has tended to give modest thinning - enough on easy to thin varieties but not enough on some hard to thin varieties like Goldrush or biennial Pristine & Sundance. It is cheap and we have not had any significant issues with phytotoxicity although we try to spray during good drying conditions. I would say, without any real measurable proof, that compared to hand thinning blossom thinning sprays with Pot. Bicarb. have improved return bloom even when the crop still looks too heavy.

1% Regalia + 1% oil. Definitely burns petals and seems to give at least a little thinning in some years. We tried spraying this according to the pollen tube growth model as in the Peck et al papers but saw no thinning. The manufacturer claims that they revised the formulation of this product a few years ago so that it no longer has a thinning effect. I am guessing that if it has any effect it must be applied before or right after pollen tube germination and does not have the powerful effect of stopping fruitset anytime before ovule fertilization, which is

the basis for the PTGM.

3% (or 5%) veggie oil. Has definitely been a powerful thinner when applied in early bloom (even before most blooms are open) or later at the 10 mm fruitlet stage. I assume it works by stressing the entire tree, not just killing blooms, because we have gotten good thinning by spraying at 5-10% bloom. This effect has been pretty pronounced in some trials where I have sprayed half a row and left half a row unsprayed etc. I have not experimented with it heavily because of concerns with phytotoxicity. But it has been the most impressive thinner of anything we have tried.

Protone. I have tried this a few times at 8-12 mm stage and seen little/no effect. Also quite pricey.

Hand thinning. We have done a lot of this but are trying to minimize it because of the ridiculous labor requirements. We used to have a crew of people available in June and we would spend around 30 minutes per tree (=300+ hours per acre) and still did not do a fabulous job and had some varieties become biennial. Our orchard has increased in size and we have lost some available labor and there is no way that we can afford to spend this kind of time hand-thinning. I am definitely willing to make tedious and tricky bloom time sprays multiple times during bloom, spraying specific varieties each time, because although painful, it is very preferable to hand thinning.

In our experience, bloom from lateral buds on 1 year old wood can be very prolific, especially for biennial trees in their "on" year. In the worst case, these can turn into dense clusters of tiny low quality fruit. Thinning these dense clusters by hand is extremely slow. When I anticipate a heavy crop year, I prune off 1 year old shoots heavily, cutting them back to a spur or branch in 2 -year old wood, just to reduce the thinning burden in the following year.

Chris

Chris McGuire
Southwest WI, zone 5A

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[Brittany Kordick](#)

[Re: How Do You Thin Your Apples \(and Why\)?](#)

March 15, 2023 09:43PM

Registered: 4 years ago

Posts: 211

FYI, the latest edition of *Good Fruit Grower* just arrived, and inside there's a small article about Michigan State University trials that have been in the works for six seasons. MSU is trying to use netting to physically block pollinators from getting to flowers at various stages, the idea being to limit the use of chemical thinners. Sounds like they're finding that excluding pollinators only helps so much, that a surprising amount of wind and self pollination occurs regardless. Looks like the article is on page 8 of the online version of the issue if anyone wants to read: [www.goodfruit.com], then scroll to where it says "Latest Issue." The title of the article is "Net Effects," but I can't find a proper link to it yet.

Actually, the whole issue is about crop management and pollination, so read a little further and noticed another small article about pruning flower buds for crop management and the research being done to optimize models and guidance. We're doing more and more pruning of flower buds in our orchard, as well, during dormant pruning time, but it's not exactly efficient on MM111 trees (though more efficient than setting up ladders again to hand-thin after fruit set . . .)

[Kordick Family Farm](#)

Westfield, NC

Zone 7a

Edited 1 time(s). Last edit at 03/15/2023 09:47PM by Brittany Kordick.

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[Josh Willis](#)

[Re: How Do You Thin Your Apples \(and Why\)?](#)

October 24, 2023 06:49PM

Registered: 6 years ago

Posts: 134

Has anyone thought about spraying kaolin clay during bloom, as a mechanism to deter pollinators?

Not sure if it would be effective in covering up pollen re: wind pollination, but it might provide enough extra weight that pollen is more likely to drop to the ground than float through the trees.

Earthworks

Zone 7a in West-Central MD

Non-commercial, ~100 fruit trees, dwarf to MM106

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