

# A General Philosophy and Technique for Organic Orchard Farming

by Ray Hunter, certified organic apple grower

## INTRODUCTION

When making the decision to farm organically, it's important to understand the philosophy that lies at the root of your commitment to organics. My philosophy is to never do anything that aims to decimate a whole population. In the orchard business, this immediately sets me apart from the more accepted organic orchard procedure where a set of extremely toxic blanket sprays have been replaced by a set of somewhat milder sprays. The flaw to this system is that even these less toxic sprays which might not be toxic to humans might adversely affect other living organisms in the orchard. In order to control scab, for instance, lime sulfur must be applied frequently and completely cover every leaf of the tree. This means it comes in contact with the entire tree insect population, be it damaging or beneficial. With a blanket spray technique like this, we have no way of knowing what else we are damaging besides the intended purpose of the spray.

I prefer to call my orchard farming technique "Super Organics", because no sprays are used at all. This decision is based on my belief that we still don't understand yet what makes agriculture tick. The accepted belief is that if we give plants lots of nitrogen and potash and phosphate, etc, they will do fine. Standard organic farming procedure has certainly proven that plants treated this way definitely look healthier. Yet, how much do we really know about the ecosystem that determines the general health of an apple orchard. Centuries of farming without toxic chemicals have proven that it's possible to farm successfully this way. In fact, it's odd that food produced organically should be considered unconventional, because throughout the history of agriculture, prior to WWII and the advent of pesticides, this was how farming was done. I prefer to think of organics as the conventional system and the newer chemical agriculture as unconventional. Anyone who still questions the wisdom of organics should get a copy of the study done by Jean Cameron. It's astonishing the difference she discovered between food that is produced organically and that which is grown with the use of chemicals.

To use lime sulfur as an example again, this is normally applied about eight times a season to control scab, yet we don't need to spray for scab at all. There are many new varieties of apples developed in the last twenty to thirty years that are scab-free. When adopting this Super Organics approach to farming, I made the firm commitment to not spray for any reason, a decision which in my subsequent fifteen years of farming I have never yet regretted. Making the commitment to not spray will allow your orchard to develop a balance between pests and beneficials, a balance which blanket spraying would destroy.

## SETTING UP AN ORCHARD

### **General Layout:**

The most important thing when setting out an orchard is looking ahead to the time you will have to mow it. One of the most important methods for maintaining a pest-free orchard is the hygiene of that orchard. Lay out the orchard so the trees are square and can be mowed both directions. Later as the trees grow, you will need a trailer mower behind the regular one to mow under the lower branches.

### **Planting:**

Plant about twenty feet apart, as anything closer is difficult for machinery like a manure spreader to maneuver around. Dig a large hole, bigger than the root system of the tree, and plant with the graft just above ground level.

Refill the hole with 50% compost mixed with backfill. The addition of compost will feed the tree immediately as it is establishing itself.

**Watering:**

After planting, you must water generously the first summer, as a new tree doesn't have much of a root system. After the first season it's probably fine not to water.

**Varieties:**

The varieties of apples you select play a big part in the future success of any organic orchard operation. In my orchard of 100 trees I use three basic varieties, with a fourth which I have found to be less than satisfactory for commercial purposes. All of them are grown on Beautiful Arcade root stock, a very vigorous and hardy type developed in Nova Scotia which is well suited to the Maritime climate. It produces a semi-dwarf tree that grows to about 20', but can be pruned to as low as 10' for easier harvesting. Remember that anyone planting new apple trees should plant the newer scab-free varieties, a number of which were developed at Kentville, Nova Scotia. The following are my three favorite varieties, plus a fourth which I grow, but don't recommend.

Liberty - This apple, I find, comes into productivity quickly, but then the tree stops growing and you're left with a smaller tree than other varieties. Although this might be fine for a home operation, it's less satisfactory on a commercial scale.

Novamac - I find this one of the nicest tasting apples available, excellent for both eating fresh and storage.

Macfree - This apple comes later in the season than Novamac and is an excellent storage apple that you can start eating around the end of January, as it keeps very well.

Novaspy - This apple tastes delicious after being in storage and can be eaten as late as April and May. In fact, it tastes far better after long term storage than fresh from the orchard.

## GROWING TECHNIQUES

**Pruning:**

As a general rule, the less you prune, the sooner you will get fruit. In my opinion, most people over prune trees. As I see it, the whole point is to get lots of apples. The less you prune, the more leaves and thus the more food for the apples you will have. When first planting, you will want to prune a bit to control the height of the branches from the ground. As the branches must start high enough up to mow under, have your first branch about 2' from the soil level. If planting a one year old whip, trim the whip at a 3' height just above an upward bud. This will encourage budding of branches. After pruning, a new leader will grow from the bud.

As yearly maintenance, I also prune the lateral branches. These are the little branches that have grown the previous summer and will now bear fruit. Because the fruit grows on the bottom third, I cut back the outer two-thirds to encourage fruit production. You may find that your root stock throws up suckers at the base of the tree. I always keep one and cut back the others so I can graft a new tree on to it in the event of a tree loss. You will get a new big tree much faster this way than by replanting.

**Mulching:**

Never mulch, as it attracts mice and mice love to girdle an apple tree. You can put compost around the trunk, but I recommend keeping the grass well mowed around the base of a tree and perhaps some wood ash piled up around the base of the trunk. This will suppress the weeds, as well as deter various pests. Wood ashes are very good around a tree.

**Feeding:**

Composted manure should be applied yearly. Otherwise, the trees should need no additional food other than what they get from the soil.

**Mowing:**

As orchard hygiene is so important in an organic operation, it's important to mow regularly. Keep the grass very short, like a tennis court, so the bugs can't multiply.

**Replacing Losses:**

Learn to make a tree yourself, because you will get losses from things like wind, borer, excess damp, deer and mice. Over the years managing a 100 tree orchard, I've probably lost about 30 trees. You want to replace every tree you lose, something that's fairly easy to do yourself. If you have a dead tree that has thrown up a sucker from its root stock, just cut off the dead tree and graft a cutting from one of your healthy trees onto the sucker. You can also buy Beautiful Arcade seed and grow your own root stock. Put the seed in a plastic bag with some damp sand. Put the bag in the refrigerator, then take it out one hundred days later and it will have sprouted. Put the sprout in some compost in a fiber pot, wait till it is about 6-8" high, then plant it outside in a nursery bed. The next summer you will have a tree ready to bud. Learn to bud and graft so you can produce your own trees from your existing root stock. Although the success rate is relatively low, in my case about 50% of my new trees stratify successfully, the job is rewarding and fun, and you can easily sell baby trees in addition to apples as part of your orchard business.

**PEST CONTROL****Aphids:**

In about my second or third year I had a major outbreak of aphids. I didn't spray and for several weeks the trees looked awful. Then they recovered and I can honestly say I haven't seen aphids since in about ten years. So my recommendation is that when you have an aphid invasion, simply tough it out, as the trees seem to become inoculated against them with this system. You can also plant garlic around the trunks of the trees when they are small as a further deterrent.

**Codling Moth:**

This is one pest you won't be able to keep away, so management is the key. Take a gallon plastic jug, cut large holes on either side, fill it with 5 parts molasses to 100 parts water, and hang one in about every third tree. I had about 36 jugs in my orchard of one hundred trees. The codling moth will be attracted by the smell, hop inside the jug, and drown.

**Apple Maggot:**

To control this pest effectively, pick up all drops within a day of an apple dropping. If an apple drops with an apple maggot in it, the pest will move out of the apple and into the soil within a couple of days, where it will remain in the soil until it hatches out the next year. My picking up the drops religiously, you can interrupt this breeding cycle. Also remove any host trees like wild apple and hawthorn from within 100 feet of the orchard. You may still get one codling apple in every 20 to 30 apples, but these can be juiced to avoid waste.

**Leaf Roller:**

As with the aphids, simply toughing it out during an infestation seems to create a long term immunity.

**Treborers:**

Tree borers can be very troublesome. You can use plastic wrap, but the beetle can eat his way through this eventually. Instead, use aluminum bug screen. Cut a piece about 12-18" wide and wrap it fairly loosely around the tree to allow room for the tree to grow. Then pile wood ash around the base of the tree up to about 1/2" above the start of the screening. This will keep the borer from hopping over the top of the screen. Wood ash is very good piled around fruit trees, as slugs and borers don't like it, plus it suppresses the weeds.

**Tent Caterpillar:**

These are very easy to spot and can easily be removed by pruning off the infested area and burning it inside.

**Tussock Moth:**

This shouldn't be much of a problem and can easily be controlled by hand picking.

**TREE DISEASES**

Although resources on apple trees do mention a number of tree diseases, they are rarely a problem in a healthy, organic operation. I have never had a diseased tree, probably because of my choice of tree varieties, plus the abundance of beneficial insects that inhabit the orchard.

Like a good marriage, successful organic farming can be done if you are dedicated to it. By avoiding a blanket spray technique you will allow the natural ecosystem of an orchard to establish its own balance. Not only will it reward you financially, but you will find that your greatest satisfaction comes from doing things right.