

Soils 478: Pruning

BRAD JAECKEL: OK, today we're going to talk about pruning. And we're standing next to the Italian plums at the organic farm at Tukey Orchard. These Italian plums I think were planted originally in 2006, maybe 2007. So now, in 2015, these trees are mature. We've been getting great harvest off of these two rows.

These are the only tree fruit that we've had at the organic farm at Tukey Orchard, so it's one good example of trees that we can use on how to prune. And there's two different varieties here. They're both Italian plums, but one's early, and one's not as early. And they're about two weeks apart in their harvest dates. And I think this is the first one that comes on, and this is the second one.

So it's kind of nice. Even within these Italian plums, we can have a little bit of variety in the two plantings side by side so we don't get all that fruit on at once. And all this fruit that we potentially get from these trees has been incorporated into our CSA and our market sales.

Plums-- Italian plums especially-- the trees are really hardy. They're really resilient. They're really easy to take care of. So it's turned out to be a great tree for us to use. We have very low input on these.

The only thing that we really try to maintain is the irrigation on these trees and the pruning. And those are really the only things we've done. We were using some horticultural sprays on these trees when they were younger. But the plums have had very little insect pressure at all, no disease problems.

So it's a tree that's been grown on the Palouse, actually, for a long time. Before World War II, even, the Palouse was known as a plum-producing region. Even over in Moscow and Lewiston had plum processing facilities. So it's been a tree that's traditionally been grown on the Palouse. So we know it does well here.

And that's a great thing to pay attention to when you're thinking about what trees do well in your region. Go do some research. Find out what historically has been grown in your area and see how they do.

These trees' fruit is able to be stored for a short period of time. We're not able to put this into long-term storage like we would an apple or a pear. But we are able to put it into our cooler after harvesting. And we're able to maintain those plums for up to four weeks in a cooler at about 40 degrees.

So that works out great for us. We're able to store that for long enough to be able to consistently put it into the CSA. I think we probably last year had it in for maybe six weeks. And

then even we're able to keep it out and available for our markets. So it's worked out really well that way.

We spaced these two rows apart. They're about 12 to 14 feet apart. And they're 10 feet between each tree. So it's a pretty tight spacing.

These are semi-dwarfing trees. And we've kept them fairly low. So right now, we're at the beginning of April. These trees could have been pruned earlier. They're just starting to leaf out.

But we usually save these for when the weather's a little better in April so we can have the class up here to help prune them. They could easily be pruned earlier. But springtime, early winter is the time to do this.

So what we want to accomplish today is getting these trees back to the shape that will be maintained through the season. And we only do one pruning a year on these. And the type that we want to do is an open center.

And so there's two main types of pruning techniques that are commonly used. There's others, but in my experience, the two that are most common are the open center. And that's what this is. And it's basically an inverted vase.

So there's no central stock or trunk in the center of the tree. What we've tried to do is create four main scaffolds, four main branches that come off the main trunk. And we've done a pretty good job of that.

Some maybe have three. Some are five. But most we were able to train to four.

So where you see the branches starting, we originally topped that tree at planting. And that forced the original first branches to come out of that trunk. And that's what we've continued to prune to.

So the other type would be a central leader. A lot of apples, a lot of pears are grown in a central leader type of pruning. And that's more like a Christmas tree, OK? So if you imagine that trunk coming up the center with branches coming off of that main trunk, that's an open center, OK?

Now, we want to think about, in either system, a couple important things. We want to think about light penetrating to the entire tree. And light's critical. Light is going to allow photosynthesis to create the fruit that that tree is going to produce. So we want good light penetration evenly distributed throughout the tree in either of those systems. So you always want to think about that.

You also want to think about good air flow. We don't want any part of the tree to be overloaded with fruit or leaves or branches. We want to have a balanced tree at the end of our

pruning that just has nice shape, has good light penetration, and not too much growth concentrated in any one area.

So the hard work is already done. The scaffold's there. The main structure is already there. And if you look at this tree as an example, you can see we have-- and I'll just use my pruners as pointers. There's one, two, three, four, five.

I'd say there's five main branches on this tree. So it got one more than the four. This was one of the original four, but you can see it's split right there.

So there's no main branches in the middle. So that allows that light to come down. And we want to really do that. We want to have all these main branches be able to collect that light.

So some of the things that we don't want are these big shoots that are coming up off the branches going straight up into the middle. So we want to eliminate all of that growth, OK? So any time we see-- these are all one-year growth spurts. That all happened last year. And that needs to come out.

And we also want to think about the height of the tree. So this tree-- it's short. I can reach basically everything without being on a ladder. And I can see that point right here was the highest point last year.

So you can kind of see how the tree was pruned year to year by looking at where the cuts were made. So I can see there was a cut made right there. It might have been last year, might have been the year before. But that's easy for me to get to with this pruner. So that's great.

And if I maintain that height, if I eliminate these branches from growing any higher, then-- that didn't cut very well, but that's the idea, is to minimize the height. So that's one place to start.

We're also interested in eliminating growth that's coming down off branches. Now, these points right here are going to be fruiting spurs. That's where the fruit's going to come out. And we want to maintain some of those.

But you can see some of these guys are shooting down. And we'd rather have them horizontal or coming up a little bit. So we have to make some decisions.

Some of these branches grew last year, but all these are coming down. This one's coming up. So I need to make some decisions whether to keep those. Now, here's one that's coming off to the side. I'm more interested in those, OK?

So if you can imagine off of this branch, there's branches coming off of either side. I can start to eliminate these ones that are shooting up, and shooting down, as well. And if I start with those, then I can start to see the ones that are coming off to the side. So we want to encourage those and eliminate top and bottom growing shoots.

The other thing we don't want are branches that cross each other and rub. That's going to create weak points for those branches. Disease could take there. They could just be more vulnerable to breaking.

So any time we have branches that are crossing one another-- like right here. These two are crossing. So we have to do some work. They're also pointing up. So I can eliminate part of that.

So that one is not touching, but then it's touching in another spot. So I can either eliminate the entire shoot, or I can also shorten it. So whenever-- let's use this one for an example.

Say I wanted to keep this part of the branch. I can leave the whole thing. I can eliminate the entire branch. Or I can shorten it at any point.

So for example, if I just take half of it, I've shortened it. That's great. It's going to continue to grow out this season. If it's smaller than a pencil width, it'll typically continue to grow straight out of that point where it was cut.

If it's bigger than a pencil width, if it's down to the size of a branch, and you make a cut, you're going to encourage that branch to make another branch. That's typically what happens. So those are a couple of rules of thumb to think about.

We also want to have access into these rows for mowing and for picking. So we want to control how far they're coming into here as well. So if I look down this entire row, and I see branches coming out-- and these are one of them-- I want to start to eliminate those branches that are coming out into that row.

This one's tough. OK. And I would continue to do that. I would take more of this one back. And I would use my eyes to sight down there so I have enough room to drive low lawnmowers in through that alleyway and mow that area. I need to be able to mow on that side and that side as well.

So we're controlling the growth around the sides. We're controlling the height of the plants. And we're controlling them-- when they grow in between, they're going to also start to touch, because these trees are fairly close together at 10 foot. They're old enough now that they're touching.

So those are some of the rules. Now let's look at this tree. There's kind of a crazy cut here at the end of this one right here. And there's this big shoot from last year.

So this is a stub cut. And this is what-- I don't want to see this. We want to try to avoid types of cuts that are happening that are going to leave these big stubs.

So what needs to happen here-- and again, this tree is growing out into this grassy area that, again, we also need to mow. So this needs to get cut back. And you have to make a decision on

where to cut that back. If I just bring it back, like, here in the middle of a branch, I'm going to create another stub, OK? That will look like this.

So I want to come back farther. I could come back to this point. But I really don't want that big growth. I could cut that back if I wanted to. But I really need to come farther back so we bring that main branch away from this alleyway that we need to mow.

So if I bring it to this point, now that will encourage this to be a branch. These two will continue to grow out. But I have eliminated that growth that's extending out into that pathway. So that's what we want to do there.

We can continue and trim that point up. We could cut these off and do a little extra pruning on the top there. So that's an example of eliminating that stub cut.

OK, so your tools that you can use-- and I'm going to walk over here and show you some other ones-- these are long-handled pruners. You also have short-handled pruners. There's hand pruners. We use these a lot just for small pruning.

So these are sometimes nice when you're dealing with a lot of this smaller type of wood. And it's easier to get in. It's lighter to use. You can make smaller cuts really easily with that without having the big handle.

So I usually carry a pair of small pruners with me. The larger pruners are going to be better for the bigger wood. And then having some tree saws as well. We're going to sometimes have to make bigger cuts.

These trees have been maintained by students, so sometimes the cuts aren't great. That's OK. Sometimes parts of the tree just need to get shortened up. So these type of tree saws are really nice and easy to get in and work within the tree without having a large tool to get in the way.

So that's one example of a folding saw. And then here's another one. If you have larger wood to cut, that's a great example, too.

OK, and then our ladders. This is an orchard ladder. And the unique thing about it is it's three-legged. And so the great thing about these ladders are they're really stable to use on uneven ground, unlike a four point ladder that you typically have in your home, a step ladder.

So the trick with these is trying to put the third leg uphill. So if this is our slope, we want to have that leg on the uphill point. And you always want to test your ladder. Make sure it's really stable before you get on that. The more you extend that leg out, the more stable it's going to be. But it's also going to shorten the leg out.

And these are really great to work within trees. You can be in tight spaces with these types of ladders and get in between branches. They're lightweight.

There's all different sizes. These are the eight foot, the smallest ones that they have at the orchard. I think we have ones that go up to 12 feet, maybe 14 feet. So we have these available, too, to use today for-- some of these trees have gotten taller than the other row. So we will have some cuts that we'll need to make with the ladder.

You can call these water spouts, one-year shoots. Where do we take these out? And so for example, this one would be easy to decide on. It's coming straight off this branch.

So I really don't want that growth going straight up. I can see there's some branches forming low down. So if I did want to encourage a branch there, if for some reason there was a space there that I wanted to fill-- not maybe this year, but maybe by next year-- then I could top that right there. And it looks like it's been cut at that point already.

But I have a lot of growth right there. So I'm not interested in that. So I would cut that.

And when you make that cut, you want to be-- there's a ring where that growth connects to the main trunk. And you want to be just above that. You don't want to be into the meat of that ring. That's too low.

So we want to be careful not to nick the bark with our pruners. These are older trees, but the bark's still really sensitive. You'll easily cut into these trees. So you want to just take your time, get your cutters set, and then make that cut. Let that branch fall out of the way before you go to the next cut.

So this one's kind of coming out a little too far, but I have a branch behind it that's shooting down. And so I have an opportunity to eliminate that one and go with this one. So you can do that by just taking a look, eliminating the one that you don't want, and then visualizing what this one's going to do.

I think I could shorten this one and actually create a branch that's going to not fruit this year, but it would fruit next year. It'll create spurs this year that will then have fruit the following year. So this is the cool thing about tree fruit, is that when you're pruning, you're really thinking down the road.

What are these trees going to look like? And where are they going to produce fruit? Maybe not this year, maybe not next year, but down the line.

So I really enjoy doing this work. It's kind of meditative. It takes a lot of visualization to just stand back, look at the shape, and then think about how you want to change that.

And there's all different kinds of techniques. So look at other orchards. Talk to other orchardists how they do their pruning. And that's how you develop your own style. OK, any other questions?

So we're talking about terminal buds.

SPEAKER 1: So basically, on each scaffold, you just look for a branch that's going in the direction that you would want it to continue to grow. And so you would look for something that's not too big or too tall that's going in the right direction. So I mean, if you want this one to keep moving kind of out this way, you could choose something like this or--

BRAD JAECKEL: Right, and say you chose this one, what would you do with the rest of that branch?

SPEAKER 1: Well, then you'd kind of clear out around it just so it can be the only one that the tree's giving energy to.

BRAD JAECKEL: Right. OK. And it kind of makes sense. A terminal bud is how it sounds. It's going to be the farthest point on a branch.

You would take other branches away from that area. And it encourages the growth to that one branch. But yeah, it's a good way to think about it. And you totally can think about it in these open center cuttings, too.

Where do you want that growth to focus? And where do you want it to stop? So that is a good concept to think about. All right, to put her on the spot.

SPEAKER 1: Hey, Brad, I noticed that your loppers are very clean and well-maintained. Could you mention the importance of that?

BRAD JAECKEL: OK. These are wooden-handled loppers. There's a lot of different newer ones, fiberglass and metal loppers now. But the main things that you want to do for maintenance are maintaining the blade.

So there's only one cutting edge on a pair of loppers, whether it's a pair of hand pruners or long handle. And it's this one. And that blade needs to be maintained to a good sharpness. And we want to remove any nicks or burrs that form on there. And there's some simple sharpening devices to keep that clean.

We want the hinge to stay oiled so that moves easy and doesn't get bound up. There are going to be resins in the tree leaf and the bark material that'll accumulate, so you can take a pair of scrapers to get that off in between prunings. You don't want that to build up.

And on the wooden ones, we want to maintain clean handles. You can always oil that wood to prevent it from cracking. And that is a great way to maintain the tools so they are clean for each use.

And it's the same thing for the saws. We want to clean those up after we use them. There are going to be a lot of debris accumulating on the teeth of the saw as well.

All right. Let's walk up to the raspberries really quick and take a look at the raspberries. And then we'll come back and get into this.

OK, so we have two different rows of raspberries at the farm. These were not pruned last fall. And we usually do the pruning in the fall. We're in transition right now. We're deciding whether or not we're going to keep these trees for the future.

But it's a good opportunity to look and talk about two different types of raspberries and how they're pruned. So the two types-- and the one on my left is a June bearer. And this June-bearing raspberry cane produces on second-year growth. And that's what is leafing out right now. And these will be the fruiting canes for this row of raspberries.

Now, these canes grew last year. They were one-year canes, one-year-old canes, last year. And they didn't have any fruit. This type of raspberry always produces on the second year growth.

So you can see the older wood in here is the grayer type that doesn't have any leaf material. So I'm going to cut one out, and I'll show you. When we prune, we cut close to the ground. And that has to come out.

And this is now a three-year-old cane. It was a two-year-old. This is what produced fruit last year. And after its second year, when it produces, it basically dies back.

So you can see that bark's gray and silver. It's really easy to identify, even in the fall, which ones they were at that time. So when you prune these, you want to take out that older wood. You want to leave those second year canes.

And then what we're going to see down low-- and it's not coming up yet, but we'll have new growth that comes out of this bed that will be the following year's fruiting canes. So again, in this type of perennial fruit, we're always thinking ahead. Which ones are going to produce fruit? Which ones are going to produce next year? And how do we maintain those?

So the other thing that we're going to do here-- you can see there's a really simple trellis. We've just used T-posts and baling twine. They're about 18 inches apart. And they're going to hold those canes in so they don't fall into the alleyway.

So anything that's kind of coming outside-- like this branch is a good example. Whether that's fruiting or not, I don't want it, because it's coming out into my alley. So just like we talk about with the fruit trees, we want to eliminate those.

Now, if I can get that trained to stay within the trellis, that's great. But if not, I want to trim that back. And I'm also going to trim for height. I want to be about five feet tall on these. And that's a nice way to maintain these.

They're going to continue to grow, but if there's too much growth there, it's going to be too tall to harvest. These are going to be-- you can see how tall they grew last year. So they're going to continue to grow. And we want to maintain those a little shorter just for ease of harvest.

On this side, these are ever bearers, or fall-bearing raspberries. And you have two options with these. We typically will cut all this growth back in the fall. Now, we didn't do it last year.

We could do it right now and eliminate that. And then new shoots will come out. And they will produce on one-year-old shoots, so totally different from the June bearers right? And the other option is to allow these canes to continue to grow.

These ones from last year would produce a small amount of fruit in the spring. And then the shoots that will follow from the ground will produce the main harvest later in the summer. So these guys usually produce starting in late August and all the way through September until it freezes out.

The June-bearing ones don't always start in June. It's a little too cold. They're usually a July harvest berry. So you can look at raspberry harvest times and really think about, well, do I want all my berries at one time of the season? If I have two different types, a June bearer and a fall bearer, I can spread out that harvest so I'm not doing all that work at once.

So there's different ways that you can kind of plan your plantings, depending on when they're going to harvest. OK, any questions on raspberries?

SPEAKER 1: So if you didn't do it in the fall, is it OK to do it in the spring?

BRAD JAECKEL: Yeah. And I think we will. I think we'll just come in, and we'll go ahead and cut those. We want to do it now because the plants are already putting some energy into leafing. And that's the downside, that it's already wanting to do that. That's why it's better to do it in the fall, because you're going to focus all that root energy into new growth rather than this older growth. So that's what I like to usually do.

And I think we can still do it. We're a little late, but if we got to it soon, it would be OK. And it's not a big deal to do it now on the June bearers. The old canes are dead anyway. They're not taking energy from the plant, so it's an OK time to do it.

All right. Let's go back and start in on the plums. So this may not be really necessary. If these are good and healthy, I'd focus on those.

SPEAKER 2: Then I'd take this guy out, because he's coming up over there.

BRAD JAECKEL: Yep. And this one, that's not a bad angle. 45-degree angle's OK. I would think about shortening this back to that point. Just see what that looks like.

And you know, the cool thing-- you can always, if you don't know quite what to do, shorten it a little bit, stop, take a look, and then see what the next move is. Like, this one, you've got to deal with that thing. And this is too long. So if you're out here, you want to also be thinking about where you are in the field. So we don't want things coming out into this zone.