Rasberry and Blackberry Trellising

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Hello, and welcome to the small farms podcast, a production of the small farms program at Iowa State University Extension and Outreach. Our podcast covers the opportunities and challenges associated with rural life.

In this episode, I visit with Suzanne Slack assistant professor of horticulture with Iowa State University specializing in perennial fruit crops. Also Brandon Carpenter, agricultural specialists with the Iowa State horticulture Research Station and Liv Meyer, a graduate student in the Department of Horticulture here at Iowa State and today we are continuing the beginning fruit farm series with raspberry and blackberry trellising. I'm Olivia Hanlon small farms extension specialist and we hope you enjoy the show. Welcome, everyone. We're glad to have you all joining us again today.

Hi, thanks for having us. We're excited to be back and talking more about this topic.

Suzanne, why don't you kick us off here talking a little bit about our raspberry and blackberry trellising?

Yeah, so raspberries do need a trellis whether or not they're privocane or floricane, they need some kind of structure, or else they will run rampant and especially if you're working on limited
some kind of structure, or else they will run rampant and especially if you're working on limited acreage, the best thing to do is to place them and use some of that vertical space. Today we'll talk about some of the ins and outs of trellising raspberries. Some of this can also be used for blackberries. Depending on where you're at in Iowa, it can be difficult to successfully overwinter thornless blackberries in Northern Iowa, for instance. So checking out where you're at is really important for figuring out your kind of crops. We'll have more episodes on figuring out what types of berries will work well in your region of Iowa. But for today, we'll just talk about the trellising. So, Brandon, and Liv, how are you guys doing today?

Brandon Carpenter 01:57
Doing well weathered that last Blizzard pretty well

Suzanne Slack 02:00
Oh, yeah, hopefully all the plants did too.

Brandon Carpenter 02:03
Hopefully.

Suzanne Slack 02:04
So last time, we talked about posts a little bit in our last episode about trellising, but for raspberries and blackberries, particularly, Brandon, what kind of posts would people be looking to purchase for a raspberry trellis?

02:17
Yeah, the posts kind of differ depending on the type of bramble that you're going to be trellising, there's really kind of two kinds of raspberries, there's a primocane raspberry and a floricane raspberry. The difference is the primocane they produce fruit on new shoots. Same year that the shoot grows, it'll put fruit on that shoot. And then the shoots pretty much spent after that the floricane, they spend one year putting a shoot on vegetatively, growing a shoot. And they put all of the energy into making that shoot and flower buds. And then the next spring, they'll blossom and create the fruit. So that's a floricane there. And the way you treat these two plantings are different. So on the primocane, you need to have a temporary trellis, something that can come in and you know, you can put it in pretty quickly, and then remove it at the end of the season when you need to rejuvenate the row. And so on those we use T posts, they're easy to drive in with a T post driver will basically drive a T post on either side of the bed. So if our bed is 12 inches or 18 inches wide, we would put two tee posts 18 inches apart across the bed and run them oh about every maybe 20 feet 15-20 feet. And then we would just put twine down each side of the row, maybe two or three levels to try to hold those chutes in to that row and get them to grow up and not want to lay out on the ground. When they get heavy with fruit. They don't want to lay down and be where you mowing and all that other stuff. So it kind of keeps them in order. And the floricane are a little different because they're basically
Shoots are out there for two seasons. So you ended up pruning those individually instead of mowing them off like the privocanes and tilling down the sides of the bed to keep the bed shaped. You basically just have to prune what you want in and what you want out of there by hand and you'll prune that after that cane produces fruit, you would prune that out. And so there's one season that you've got brand new fresh stuff in. And then the next season, you've got a mix of brand new stuff coming up brand new canes coming up, and the ones that are producing fruit that you'll be removing that season. And so you have to have a permanent trellis for that system. Our trellis for that system still kind of utilize this idea of having wires down the outside of the planting down, you know, if you're plantings probably going to be again about 18 inches 18 to 24 probably on that one you could go a little bigger. And what we did was we would use wooden posts on that. So we would sink wooden posts down in like you would for an apple trellis or a grape trellis. And then we would put these two by fours across it to make a T brace kind of and that T brace we would put two or three of them on at different levels and then drill a hole At the end of that two by four and put a wire through it, and that wire is going to keep those floricanes going straight up. And so on the the post question, it's a temporary like a tee post for the primocanes. And it's more of a permanent you could use steel posts again, but you would want to you know, you'd want to pretty heavy duty steel post and something to make those T braces so you can hold those wires out away from the post.

Liv Meyer 05:25
I had a question, I guess, because we're catering to like small fruit farms. And there may be some backyard growers too, or people with some limited space if they've already got stuff that they're growing, but they want to start integrating more fruit or fruit in general. Because of the way these grow. We've talked about the different types, I've read that you could also do things like raised beds, or like container plantings. And I don't know if that has an effect on whether or not you would eventually need a trellis and things like that. And again, this is more for like limited space small, smaller growers, backyard growers, things like that.

Suzanne Slack 06:01
Yeah, raised beds can be recommended for raspberries, a lot of people grow them on plastic now too. Very similar to our vegetable crops, or even strawberries so they can be grown on plastic quite well. Again, whatever you're thinking about raspberries in particular, it's kind of a weird system because we are growing wood like we do blueberries or apples, but it's way more intensive pruning, for instance, like if you have a primocane, you're cutting it back flush almost every single year, or you should be on floricanes, you're removing quite a bit of that wood every single year. One thing that people especially beginners, when they grow raspberries don't realize that the floricanes will die. And then they get concerned and they think something's happening to their plant. But it's they're supposed to do that. So it can just be a little off putting sometimes they're a little scary for raspberries and blackberries. There are some diseases too, that can come in and kill healthy floricanes, but typically, they still have fruit on them when they start to die if there's something wrong with it. But yeah, you can do container I've seen some people try containerized raspberries, and especially blackberries, again, we're dealing with that cold hardy issue. So there are some people who are growing them in pots, moving them to overwinter them, I think that's a lot of work. But if that's how you're gonna grow blackberries, that's how you're gonna grow blackberries, I don't know, commercially, besides maybe doing small farmers markets or like small scale how that would
be economical, but you could probably make some money. Or if you wanted to, if you're doing a CSA, and you wanted some homemade jams or something like that, and you had limited space, I could see that being a viable option.

07:40
Yeah, we've had some plantings of blackberries as well, we had a specialized trellis for that, which was a rotating arm trellis. And before we got that rotating arm trellis, we would trellis them in the same way we did the floricae raspberries with a trellis that goes down both sides. And then in the winter, because they're not as cold hearty as the raspberries are. We tried cattle panels one year, we also put plywood down both sides. So we would slide a piece of plywood on the either side of that trellis system. And then we would fill the inside with straw like fluffed up straw that we had from bales, we hand fluff it and, kind of throw it down in around those blackberries. You know, if you wanted to do something like that, you'd have to plan that out when you built that trellis to make sure that it was wide enough and that the posts were close enough that it would support that in these winter wind storms and with snow drifting around it and stuff like that. And so you know, that's the other thing is kind of have a good idea going in, you know, even though you can put your trellis in this late in the first year that you put the plants in or possibly the second year, you still want to have that plan, you know, of what you're going to do from the very beginning. If you're in a cold area like Iowa or even north of us in Minnesota or something like that, you're definitely going to want to protect blackberries. And so you're going to have to plan ahead to make sure that you can do that.

Suzanne Slack 09:04
A lot of people too are starting to grow blackberries on high tunnels. It's more work up front, but I think less work year to year. But if you're dead set on blackberries in Iowa definitely do some research on to the cultivars that'll grow. And even if they're rated at the very like, for instance, there are some that are rated down to zone five, they're probably going to die or they're going to be severely cold damaged in our winters. Because even though we are technically zoned five, we've especially the past couple years we've had these really cold periods then we have warming periods and cold periods. And there's been some research that blackberries are really sensitive more than some other crops to those drastic shifts.

09:49
I think a nice thing about being able to like if you were gonna grow them in a high tunnel. One of the nice things about that is you could use insect netting on any of the openings that you're going to have like you know, you've got the roll up curtains and the end walls and things like that you could put an insect netting down and you could probably reduce or maybe eliminate the need for sprays to take care of Spotted Wing Drosophila. This year was the first year I saw at a conference. They were doing drape netting on raspberries and blackberries. And I think even blueberries, where they would just drape insect netting over the trellis itself. And so if you were going to do that with your trellis, you would probably want to make sure that that trellis doesn't have a lot of sharp, pokey parts that are going to catch that insect netting and rip it, you know, when you remove it, because you're gonna have to climb in there, every time you go to harvest, you're gonna have to get underneath the curtain. And so there's gonna be a lot of
movement of that curtain over the trellis. And so it'd be a good idea to plan ahead, you know, maybe design a trellis that doesn't catch insect netting or has a limited spots to catch insect netting.

Suzanne Slack 10:52

Oh, that's a really good point we didn't talk about so there's an insect called Spotted Wing Drosophila, we'll have another episode dealing with just pests in general of small fruit. It's a fruit fly. For those that don't know, so many people are familiar with fruit flies, but this one's special. It has a serrated blade on its rear end, and it will actually cut holes into unripe fruit and lay its eggs inside. So this is really detrimental because then you have a unripe fruit that already has maggots in it. So when the fruits, right, it's full of maggots, which is very, not aesthetically pleasing and hard to sell. So especially if you're doing direct marketing, that's a that's a huge problem. Also, if you're doing any kind of commercial sales, there is also a huge problem with having maggots in your fruit. So thinking about your mitigation plan, there are a lot of sprays that you can do. It used to be even 10 years ago that raspberries, blackberries, blueberries were considered low input fruits. Unfortunately, that's not the case anymore because of this one specific insect. So some commercial places spray weekly, some spray even more than weekly now with insecticides to maintain low or no populations of spotted wing. But there are some nettings that you can use. Even with the netting, you still have to think about pesticide applications because it just takes a couple of females to get under that net one time and they can lay a lot of eggs. So not to scare anyone off, you can still talk you can still make a lot of money growing these fruits, they're just, if you're looking at resources that are over 10 years old, you're not going to see this. It's a new problem. I can't remember I think I saw it was ID in Iowa, maybe 2016. So within the past 10 years, for sure, really changed the game on how we grow small fruit. So Brandon, you mentioned a rotating arm trellis. What's that?

12:56

So a rotating arm trellis utilizes the way the plant grows to kind of increase the surface area of the leaves that are contacting the sun. And then also it's supposed to ease harvest. And so the way this works is it's got basically two small arms that come up, it's almost looks like a y with a post that's about two feet comes out of the ground and goes up about two feet. And then there's a block that two arms come out of and the short arm kind of goes off to one side and the long arm which is probably about four, four and a half feet long. So one one arm is about two feet long, and the other one's about four almost double that goes off to the other side. And they set at a I don't know, probably a 45 degree angle from each other, you know, coming out of that block at the top of the post, and you grow the first year canes to one side. And then after they grow that year, you'll move them over to the long side. So you grow them on the small side. And then you lay them over onto the large side and you lay it down so you can cover it up in the winter. It's nice because you can lay the canes down close to the ground and then cover them up for winter. So it's really nice in a place like Iowa. And then the next year, when the spring comes, you prop that arm back up over the other side. So it goes from if the long arm were on the right side, you would lay it down over the left side and that the flowers will grow all up toward the sun. Basically they'll try to reach for the sun. And then after it flowers and the blooms are gone and it's starting to ripen up the fruit then you lay that are back over to the to the side that it originally belongs on. And the fruit are dangling below the canopy deck so that canopy is up in the sun and the fruit are dangling down below. The idea is
you can pick it as you go along. I think the theory behind it and the idea behind it are stellar. I mean, it's a good idea. One of the problems is the timing. You've got to be on the ball. So as those primocanes are growing and that florican is already fruited and they're starting to senescence or die off, you have to then prune all of those out in the summertime, and lay those new primocanes over to that side, before they really start to lignify and hard to position. And so you put that over there and you want to catch that time you've got, I would guess, probably like a maybe two week window where it's prime time to get things moved over. And then after that, it gets harder and harder to move things over and you get less of that benefit of that canopy catching all the sun. The other thing is, you've got to have time to lay it down in the fall, cover it up, you also have to have your timing right on getting it up so that you have it up in the right position when the blooms going to happen. It didn't work out for us very well, it seemed like we were never on time. We were constantly fighting. And then we were using it was in a variety trial. So maybe this is not a fair assessment of it because it was in a variety trial of thornless blackberries. And those are exceptionally sensitive to the cold. It seems like you know, maybe the thorned berries are a little more cold hardy, and the thornless seem to be all very sensitive to cold. And so some of ours just never came back the next year, those floricanes that we had over wintered, we pull them back up the next year, and they would be there would be a lot of die back. The very base of that florican would be all that would produce fruit. Another issue that we had was, what do you cover them up with? You know, we tried reemay, we tried straw. And it seemed like the reemay probably did the best. But it was the least good at keeping the cold out where the straw did really well for overwintering. But it was more if we had a wet year, or really wet spring, in particular, we would get a lot of rot, you know, we'd get disease issues on the ends and molds and stuff like that. And so it was, I think, a really good idea. I've seen pictures and videos of it where it works really well. It just was hard for us. And it would be hard to justify spending that kind of money unless you knew it was going to work in your area.

Suzanne Slack  17:04

Oh, thanks. That's a good explanation. One thing that I've seen too is if you're having a year where it's a slow start year, and you don't get to getting them up off the ground quick enough, they might not come off the ground without having to destroy a lot of that growth, they'll root themselves down in along that plane. So it's definitely something where if you have some time and you want to experiment with I highly recommend is putting in a test grow first of it before going in at a huge amount of it just because it is expensive. And yeah, it can, if you if it's done correctly, it can make your harvest a breeze. Having that light coming up on one side will have all your fruit you basically have a fruit wall. So it's a lot easier to pick. But I guess it depends on where your money's at if labor is one of your bigger concerns later in the season, but you have labor in the beginning or vice versa, things to think about for that. Unfortunately for us in Iowa, the thornless varieties thornless cultivars seem to be the least hearty were the ones with the thorns seem to be just fine in the winter. So another thing to think about too when thinking about small fruits. So the hardware on the wire is pretty much similar to what we talked about for just general basic trellising wire. For the primocane type. Some people just use twine so they can easily cut it out. If you just use hemp cord, pretty much anything that's you know, it isn't necessarily going to need to last some people will use the plastic tape rope. But then for the one that's more solid, most people do use wire for the floricanes.
I have seen terminology to they talked about. And I'm again I'm not this isn't my area of expertise. But I'm not sure if this was related to primocane versus floricanes but they had talked about trailing versus erect cultivars. And if there's sort of a difference in maintenance or how you would go about setting up a trellising system with that.

19:09
I'm not positive on this. But I think that the difference there Liv is the trailing are kind of more floppy. So the plants tend to kind of want to grow up and flop over, where the more erect are going to be straight up. And we see this in grapes as well. Some cultivars lend themselves to a vertical shoot positioning really well. Others you have to fight to keep them growing up the way you want them to in a vertical shoe positioning. And then other ones do really well because they flop. They do really well in a single high cordon or double high cordon type system where they can just grow out and lay down. I would assume that's probably the same thing for raspberries. It seemed like for me, what I remember is the primocane seemed to do really well standing up on their own because they were shorter. And then the floricanes if you had a floricanes that produced a lot of fruit it really wanted to lay on the ground. But there might be even just growth habits just in the plant itself that do that, too.

Liv Meyer 20:06
So would there be a different way, then I guess this is another question. And this could relate back to the way that they grow versus just set up in general. But you've got your trellis system set up. How are we attaching these to that system? Is there some sort of method, you know, compared to like, you know, we talked about like Apple trellising and grape trellising and stuff like that.

20:28
That's a good question. On the original trellis that we talked about, with the raspberries, you know, the primocane and the floricanes, both the trellis is kind of there to just hold things in. So you can think of it as just somewhere that the plant, if it's growing that direction, can lean it against when it gets full of fruit and heavy, so you don't really go in and do any tying of the plant itself on the rotating arm trellis system, because midseason, you're moving those primocanes over to that long arm so they can grow, you actually do have to tie them on that. And so we use just plant ties, I think we use kind of the same stuff that we use with grapes. If you had a MAX tapener, that would be a really good thing to use there too, because it doesn't last forever, kind of comes off easily when you want to bring it off to prune it out. But really, that's the only system we use, where we tie things up. Everything else is just meant to be kind of a basket trellis to kind of hold things in, and not necessarily tied to.

Suzanne Slack 21:26
That's a good point. So the trellis in general, just as a support system for the plant that you're growing. So for raspberries, the point of a trellis is to get it off the ground. So even the erect cultivars will not be able to support their weight. And typically, whenever you see like the like
your grandma's raspberries where they're circular, they almost look like little loops, they'll eventually fall back down to the ground and then root themselves and propagate themselves that way. The trailing ones, they just they don't even try, they just go along the ground and look for something to wrap up around. So a trellis for raspberries is really just to make sure it's up off the ground, easy to pick, you don't have that soil contact coming in some food safety issues like that. I've seen people especially when they're babies use some twine just to help keep them upright, especially if you have the trailing type, I think that would probably be a good idea. I'm going to be looking to the cultivator you have if you notice that they just want to grow out and not up, they might need a little bit of help. The other option would just be to add a second teir to your trellising system. So for a lot of raspberries, you can think of it as a you have your posts at the end and then you have a say you have a vertical post and you have like one horizontal post, you can always put another bar down at the bottom, another horizontal post there to make the basket a little more supportive if you have some that are just not really interested in growing up. Alright, well, I think that wraps up our raspberry trellis talk. Thank you both for being here today.

Brandon Carpenter 22:59
Thanks for having me.

Liv Meyer 23:00
Thank you.

Small Farms 23:01
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