

# Tree\_Struggles\_Of\_2022

Wed, 8/17 10:18AM 35:19

## SUMMARY KEYWORDS

seedlings, trees, plant, spring, herbicide, species, billy, pests, roots, year, tubes, wind, cages, good, extension, forestry, called, soils, iowa, pathogens

## SPEAKERS

Billy Beck, Iowa State University Extension and Outreach, Christa Hartsook, Olivia Hanlon

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- C** Christa Hartsook 00:15

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.
- O** Olivia Hanlon 00:29

In this episode, I visit with Billy Beck, assistant professor and Extension Forestry Specialist at Iowa State University. Today we are talking about the tree struggles from 2022. I'm Olivia Hamlin, Small Farms Extension Specialist, and we hope you enjoy the show. Billy, welcome, we're glad to have you joining us today.
- B** Billy Beck 00:47

Thank you, Olivia. I'm thrilled to be here. I appreciate the opportunity.
- O** Olivia Hanlon 00:51

Billy, it's been a while since you've been on I think we had you on back in February, so why don't we start with you telling us a little bit about yourself and reminding us what it is you do here in your role at Iowa State.
- B** Billy Beck 01:02

Yeah, so I'm the Extension Forestry Specialist with Iowa State University Extension Outreach, and I'm what they call the state specialist. So I've got statewide responsibility for forestry education and extension. Forestry in general is kind of the management of our woodland and

tree resources for a wide range of outcomes, be it clean water, clean air, timber income, wildlife habitat, aesthetics, just a cool place to hang out with your family in the woods; so we cover a lot of things. There's rural forestry, which is what I tend to focus on. There's also urban forestry, which is critical, I don't tend to focus on that too much just because there's a lot to do with rural forestry and just trying to focus on that. But yeah, forestry is basically managing our woodlands for a wide range of outcomes. I've been very fortunate to go over all of Iowa's 99 counties and kind of undertake forestry extension education. So I've got a three way split in the department, most of my activity is extension, but I also do research to inform that extension. And then I do a little bit of teaching with our forestry students here on campus as well. My extension can range from awesome fun podcast like this, field days, creating web content, video, publications, all the way up to we have an extensive six week shameless plug here called the Master Woodland Steward Program, so it's a deep dive into forestry. It's kind of an intensive six week, seven module course for folks that are looking to kind of broaden their horizons on their how to manage and be a good steward of their woodland resource.

O Olivia Hanlon 02:29

We are all about those shameless plugs, Billy.

B Billy Beck 02:32

All right, I've got more, so.

O Olivia Hanlon 02:35

We are so happy to have you, Billy, both on the podcast and here in general, why don't we get started with our struggles of 2021. So let's start from the top. What was at the top of your list for tree struggles this year?

B Billy Beck 02:49

I was always just hesitant to bring up this topic, but I failed a great deal this spring in my tree planting endeavors, and I just wanted to share it with the world here. It's kind of funny, because it's the things I tend to preach about for folks to remember, and I slipped up on a bunch of them. But I learned a ton too because failures were you learn. Very, very long story short, I went back to school later in life. So we moved from a house to an apartment for about five years when I was in school. Then we got our small place, about four acres, a few years ago. We spent the first two years when we owned it there cleaning up from the derecho. So I've got about seven years of like really pent-up tree planting desires, and it all came out in spring of '22, and I got a little too over-enthusiastic, but I'll get into all that. My number one kind of lesson or struggle from this year was that I did really get overeager and I didn't plan the plantings as I should've. I started my effort in spring of 2022, which what I should have done has been planning it in fall of 2021. So this podcast is like the perfect timing for this. If you're looking for a spring planting, start thinking about it, I'd say at least in the fall prior or even further back than that. So, but no, it was a definite struggle. Trees are challenging, but they're definitely worth it, and I realized that they're never going to be perfect, and just to kind of lower

my rigid expectations. So, I'm going to say the top three things I did wrong in the planning department, and I want to share one thing that I did do right, I didn't do everything wrong, so one thing that I did do right. The first big thing that I think I failed on was I ordered my seedlings in the spring, and that's totally fine. But what I did is I ordered them at the very last minute, and what that meant was I didn't get the stock I wanted which means the size that I wanted, and I also didn't get a lot of the species I wanted because they were simply sold out. So what I should have done was just been patient and waited another year to get the stuff that I knew would do good on my property, when, as foresters say, you're not going to miss that one year of growth in 15 years down the road. You're not going to notice that one year. But, I was just gung ho and I went ahead. I got some good stuff, it just wasn't exactly, I'm gonna make it work, but it was not exactly what I wanted, because A) the derecho has really limited our, our stock supply, and you start ordering in March that was really slim pickins at that point. So I was looking at some larger, looking for some larger stock, so like containerized species versus bare root species. So, bare root was being like you get a package of them, and it's just the roots and like some media around it, keeping it moist. Whereas containerized is basically you're buying like a potted tree, so much more extensive rooting system a little bit more advanced tree seedlings. There's advantages to both. So I would say like if you're doing a larger tree planting, you know, several acres, bare root seedlings might be a good bet for you because of the lower cost, quicker planting. But if you're doing like I was doing like about 100 trees on like an acre or two, containerize seedlings do have a lot of advantages. They're more advanced, they've got a bigger root system, but they can be a little bit more of a pain in the neck to plant and they do have a higher cost. What I did right though, with that is I did, I was pretty diligent in ensuring that the species were native and if they weren't native that they were hardy to Iowa's climate. And I also looked into the seed source of the species when I was calling around a different nursery, so where they get their seed from. So if they get their seed from southern Minnesota, you know, Northern Illinois, anywhere in Iowa, that was good with me, if they were getting their seeds from like Southern Missouri, Southern Iowa, or I'm sorry, Southern Illinois, Oklahoma, then I kind of passed on those, because I knew those probably wouldn't do well in Iowa's extreme climate. That's one thing to really think about, is that we're not that further north, but we've got very, very hot, humid summers and very, very cold and dry winters. Like, we get incredibly cold here, and we're not even that far north. It's pretty wild. So something to think about there. But I did do that I made sure that my species were going to match my site and had a seed source that we're going to work at my place. But, I would highly recommend ordering your seedlings the fall before. So you get all your options that you can meet, that you want to get out there. The second thing I did wrong, was I didn't prep the site or flag out my planting until the last minute. What I mean by that is I really didn't control the existing vegetation that would have been very competitive with my tree seedlings. For me, that was cool season dense, like sod-forming grass. So, what I should have done was gone in in fall and flagged out the proper spacing and the proper placement of where I wanted each species to go to match my objectives, and then there's a variety of ways you could do this, but what I should have done is taken herbicide and killed off that competing vegetation in the fall, and then come back again early spring and hit it once more. What I ended up doing is I ended up going out, and because this spring was so windy, I didn't really have a lot of windows to apply herbicide, because my other existing plants out there are fully herbicide. So what I did is I took a shovel and I went out and I scraped off the sod-forming grass and about a two by two foot square for each tree to kind of knockback that competing vegetation. Then I put weed barrier fabric down and then I put mulch on top of that, after I put the seedling in place, I'll get into that kind of protection there in a second. But, as you can imagine, that was a lot of time spent on that stuff and not planting trees, and as you know, in the spring, you get limited windows of planting opportunities that pop up. So I spent a lot of time prepping the site, which meant there was a lot of time where my seedlings are sitting around not in the ground. And if you're not careful,

those seedlings can be under a lot of stress when they're not in the ground for long periods of time. And that was one of the things that I didn't really think about I think people need to think about is, if I can't plant these trees, how am I going to take care of these seedlings? So what I did is I put them in a moist bucket with mulch around them and seat moss to keep the roots nice and cool and moist, and I put them in a wind-protected area under my deck and just monitored the moisture content in there. But even then, extended periods of that kind of storage is stressful on those trees. So you really got to be thinking about what am I going to do if I can't get these seedlings in the ground. So, off on a tangent here, so I had some extra seedlings, and I hate throwing trees away, so I put them in a moist bucket in my basement next to a window and those are the best-looking seedlings on my property, these seedlings in a bucket in my basement. But yeah, so I lost a lot of time prepping the site and flagging it out, which I should have been doing beforehand. And if you remember this spring, especially in central Iowa where I am, we had very limited good planting days, because it was very cold, it was very wet, and that planting got pushed back a long time. Third, I ordered way too many seedlings. So, this kind of led to a lot of the other issues I have that I'll cover in this podcast, but I just overestimated a lot of things. I overestimated my free time with extension in spring like I should have known better. I didn't think about the labor involved in planting, the labor involved in protecting. So planting them is only one part, then you've got to plant, you've got to maintain. I didn't think about watering. I've got 100 seedlings out here, how the heck am I going to water them if we don't get rain? I didn't think about how would I store these if the window of planting opportunity didn't come up, which happened to me you know, I had seedlings sitting around for a long time, not in the ground. So I really, I overestimated my efforts this spring, and that really at the end, it led to like some fatigue and kind of I was sick of this... I don't want to plant these trees anymore. On Tuesday night after work, the last thing I want to do is dig out patches of sod grass. So, going back to kind of the seedlings sitting out and not being on the ground.. a lot, especially bare roots seedlings, which have nothing between the root and the environment except this media that they come shipped in, the fine roots on those are very vulnerable. So the fine roots are the roots that uptake moisture and dissolved nutrients, so they have a huge role. So if they're sitting around like that they're just vulnerable to desiccation and damage, which can really lead to a failed tree planting. So I want to hit that a lot this session is that really do everything you can to protect those fine roots, which includes planting them almost immediately after receiving them in the mail. Those are my big three. But I did do one thing, right, so.

O

Olivia Hanlon 11:29

Alright, Billy, so you talked a little bit about what you wish you had done differently, what you plan further out, and then you talked a little bit about stocking issues from the derecho. Do you think we're still going to have that backlog next year where people should be considering ordering their stock extra early? And when should people start planning for planting their trees?

B

Billy Beck 11:47

I would say right now. Deciduous trees you can plant in spring or fall. Conifer trees you really want to plant in spring. If you plant them in fall, and you don't get the timing right, they're very susceptible to winter kill; and I think we talked a little bit about that on the windbreak podcast because they don't lose their leaves in winter, so if we have a nice warm day in February, they're going to kick on photosynthesis, they're going to try to uptake water because they need

water for photosynthesis, and if the ground is frozen, or there's low moisture in the soil, they're gonna get winter kill. And I saw that everywhere on like, specifically white pines this winter. Even giant mature white pines were getting browning needles and dye back. But I would start looking around right now. And I would say that you start looking around right now, I think you should be able to get exactly what you want. The reason being is that last year, I was like messing around, halfhearted like in December in January, and there's a lot of stuff available. And then as February came there was less stuff available. And March came there was less stuff available, and then when I ordered in like late March, which is completely incorrect, there was not a lot available. So it seems like they had some stuff. And it was just kind of normal supply and demand that I kind of missed out on. One thing I did learn though is that always call them even if they're out, I would call and check just because sometimes orders get canceled, sometimes things happen where they do, they can put you on a waiting list and you'll get an email that like "hey, your eastern red cedar is in" or like "we have some excess here." I don't, don't quote.. well, yeah, maybe quote me on it. I don't know. I don't think we're gonna have a huge issue this year, but just good, good practice. I would start looking around. I would start the planning process now and start ordering in the fall for spring of '23.

O

Olivia Hanlon 13:29

Alright, Billy, next on your problematic list we had physical protection. What was your problem here this year, Billy?

B

Billy Beck 13:36

So in general, young trees need protection from animal damage, so like browse from rabbits and deer, buck rub, damage to bark... they need protection from wind, they need for protection from mowers, especially on acreages and they need to some extent protection from herbicide drift. Living in Iowa, that's a common occurrence. So for me, I had a lot of damage from not properly protecting my trees. I got on the ball late and they're good. But like, here's some of the kinds of things that I learned and some of my struggles from physically protecting. So I'm not really talking about like insect damage right now, but like from rabbits, from deer, from wind, and from herbicide drift. So, I started off using cages and tubes. Cages are basically like any kind of welded wire fence secured with like a tee post or some kind of other posts around the tree giving them ample room to spread out so there's not bark, metal contact and high enough where some deer can't hit them, and honestly about five foot is a good height for a metal cage. I also use what's called tree tube. So these are elongated plastic tubes are much much smaller diameter, and they fit right over the seedling and they create like a greenhouse environment. So you'll see a very much more rapid growth and primary growth or height when you put tubes around seedlings versus a cage tree. The pros of cages is that they really need minimal annual maintenance. They're very sturdy so they're not going to like flop around in the wind a lot. If you really secure and good even a angry buck cannot do a ton of damage to them, which they do, bucks will destroy a lot of stuff. They're a little bit more sturdy than tubes. They allow trees to get wind firm, so they allow the tree to kind of sway back and forth and build up that firmness whereas a tube, you get a lot of height growth and you don't get a lot of room for that seedling to kind of move around and get wind firm. So by the time you're ready to take that tube off, you've got this really tall kind of wind susceptible tree. Also one pro of cages is that allows a wide berth from mowers. It makes you back your mower off a good distance. Some of the cons for cages are the material nowadays can be very expensive, the metal and

the T post. They can be a little bit more labor to install than tubes, you're carrying around that heavy material. Bucks do destroy these don't get me wrong, they'll get in there and rip them apart in the rut. This is more for like woodland settings more than acreages, but if you have a lot of cages in your woodlands and you get vegetation growing up around them, you're probably eventually going to hit him with your chainsaw. So having metal lying around like that maybe isn't advantageous. I don't see that coming up in an acreage, more woodland. They're often open to herbicide drift and damage and they're often open to wind damage. I'll give you a little example here. My friend gave me some paw paw seedlings which is a really cool, native shrub. They call it the Ozark Banana. It gets a really delicious green fruit on it. Anyway, they've got large kind of thin leaves and I put a number out with cages on them, and I didn't size the cages correctly. So we had 60 mile an hour winds the spring. It was just it was one of the windiest springs I could ever imagine. So what it did is it bent the Paw Paws over and shredded the leaves against that metal cage in like a day. So I didn't size the cage correctly there, so that was on me. The tubes, they gave a great greenhouse effect, and they really enhanced primary growth. I planted a series of pecan trees this year, the ones and tubes are at least two feet taller than the ones in cages. They protect against herbicide drift and they give wind protection for very sensitive, young seedlings, and they're also quite easy to install versus cages. The cons for tubes are you need twice per year maintenance. So what you have to do in Fall is you have to lift them up a little bit to get that greenhouse effect to diminish and let the tree know that winter is coming and it should start hardening off. Then you really have to protect against any kind of animals getting in there in the winter too and gnawing on the young bark down there. Both are great, just pros and cons and kind of what works best. That was pretty much my big ones with physical protection. But man, those tubes did a really great job in our high wind spring protecting the leaf against desiccation and just that shredding action of those high winds on young leaves. I had trees that leafed out this year the wind blew the young leaves off, I couldn't believe it. They did reflash, but it was just such a struggle year. One last thing I'll talk about for physical protection, I'm gonna lump this in there is moisture retention. And I think I did a pretty bang up job on moisture retention this year. I did pretty good at retaining moisture around the roots, and I wasn't the best at watering this spring. But I was very diligent in checking the soil moisture and that weed barrier fabric that knocked down competing weeds that compete with moisture, and that layer, you know, a two by two or bigger swath of mulch around each seedling really helps retain moisture in the soil. And even though I watered less, which you need to be regular in your watering in times especially like now, they're still looking pretty darn good. Also, one thing I did is in certain cases, I let the broadleaf weeds kind of grow up around them, so I backed off with the weed whip and the mower and let kind of the broad leaves kind of grow up. Not that they were overtaking them and blocking the sun, but kind of on the sides, and I feel that really helps with reducing the desiccation from the wind and those hot summer winds that we get. Cool season grasses are bad, broadleaf weeds not so bad. One more thing, I would say for protective gear, just buy the gear and have it ready to be put in the ground. What I did, I was trying to save money, so I was, I'm not even joking, I was like dumpster diving for like wire. I was pulling old fences out of like my buddy's back 40 timber that had been there since like the 50s. I was finding old T posts and like, you know, old fence lines in the stream. So I was really trying to save money by just getting this stuff out and I didn't have it ready at the time of planting. So there's I planted a bunch of hazelnuts this year too. And I planted them I was so tired. I just went to bed I got up the next day the rabbits had already gotten into them like two seconds and nipped off the top of them, so I learned a lesson. Just drop the cash, buy the gear, and have it ready.



Olivia Hanlon 19:51

Alright, so it sounds like to avoid these problems, folks should decide whether they want a wire one or tube, but when? So, they should have those ready to put on right away? How should they decide if they do a tube versus a wire? Aside from the pros and cons that you gave us, are there certain trees that will need a tube? Or is it just based on preference?

B

Billy Beck 20:12

I think it's based on your preference and kind of how much maintenance are you willing to give these things? Like I said, there's a lot of pros and cons for each. It really comes down to like, what are your resources? And how much time are you willing to make permanent metal cages with a T post that you're going to remove eventually? Or you're going to put on those tree tubes, which will eventually break down in the sun, you'll have to clean them up eventually, but they'll kind of pop off and break down on their own over time. So I really kind of think it comes down to what you want. What I learned is that I planted some smaller seed things like those Paw Paws that have very large leaves, and they have very thin leaves when they're young, and I probably should have caged those just because we had such intense winds and we're out in like the open, we have just like a wind tunnel where we live. So in that situation, I might suggest tubing a lot of them, and that also will get you protection from some herbicide drift as well. So yeah, just think about where you're at what are the conditions affecting the trees and then kind of go from there very site specific, I'd say. The site and the species will kind of dictate what you use.

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Olivia Hanlon 21:13

Alright, Billy, the third one, which is probably a big one, is pests, pathogens, and adverse weather. What were some of the biggest culprits you had in the pests and pathogens problem area this year,

B

Billy Beck 21:24

I didn't see a lot of pests and pathogens on my plantings. Of course, every cool and wet spring fungus gets really prevalent out there. Another shameless plug, we have the ISU plant and insect diagnostic clinic that has a lot of great resources for tree and plant diseases that are out there, I'm going to hit these big points to think about. Go with native species and do everything you can to maintain their vigour. If you do that, they're going to be much more resistant to pests and pathogens. And I say this all the time with kind of trees, if you match the species to the site, if you properly maintain them to give them the most vigor possible, it's never one factor or bug or disease that comes in and nails these things. They get stressed, they get worn down, their vigor goes down, and then secondary pests and pathogens start coming in and finally take them out. So, match the species to the site, make sure you've got the species that's going to grow right on that site, make sure it's native, and I'll say this to a diverse assemblage of species is very beneficial. And I'll use that as a segue into what really got me cranky this year with pests and pathogens. So I did do my best to plant a diversity of species out there. And this was an excellent year for Japanese Beetles. So an invasive pest just going back to diversity. They really hammered some things they love apples, they love anything in the rose family, they got my Hazelnuts, Sycamores, Basswood, but they didn't touch other things. So diversity is just a good all around thing to really focus on that's going to get you the resilience

against pests and pathogens. But this spring, the cool and wet conditions were great for those Japanese Beetle grubs and they just hammered a lot of species. Unfortunately, a lot of the insecticides that target those also hit beneficial insects. So my plantings were such a scale that I went around a daily cycle at night when they're really sluggish and slow. And I went I picked them off my trees and put them in a bucket of soapy water just because like a lot of the insecticides I looked up when also hit all the other beneficial pollinators and insects that were out there, so that was me. So it's all kind of a question of scale. That was my small scale planting. But I would also say be patient with any kind of factors like Japanese Beetles, for example, I planted some Choke Berries, or also called Aronia Berries this spring, completely decimated by Japanese Beetles. But, because I retained moisture, because I had physical protection, because I tried my best to get them to be vigorous, they did reflush. So they've got a new flush of leaves on them. So they didn't kill the tree. Obviously, that knocked them back. That's not good. That's like lowering your immune system or whatever, but it knocked them back but they did reflash because I was doing my best to give them kind of a moisture and protection and all that kind of good stuff that they need.

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Olivia Hanlon 24:03

In the area of adverse weather, Billy, what were some of the most problematic things there this year.

B

Billy Beck 24:10

For me it was high winds. It was a cold and wet spring with incredibly high winds. And I wanted to cover this one kind of a big lesson I learned and kind of a term here, it's called transplant shock and I had a lot of it this this spring. So this spring was incredibly windy, like where I was. Our location especially, we had gusts of 60 mile an hour like a regular occurrence. So I would look out my trees were like horizontal with the new flush of growth just flapping in the wind there. But these bare root seedlings and these young seedlings that you buy, bare roots especially, that's another thing pro and con, bare root versus containerize. Bare roots have their fine roots exposed and highly vulnerable. So if you think about it, they get lifted from the soil, which damages the roots then, they get packed up into a bundle and shipped wherever around the country, then the you're sitting in some bucket in your basement or whatever, then you're spreading and ripping them out again, further kind of compromising the root system. So A) reduce that as best you can. So what that means is, when they're put in the ground, they don't have a really nicely established root system, so they're really susceptible to anything that kind of limits water. So wind is one of them, you get wind flowing over leaves, it really sucks the moisture out of the soil and also the leaves. So I, for example, I planted 25 Cedars in this little tiny, tiny windbreak. Right afterwards, we got those, that like, two weeks of intense winds, and I started seeing the die back the browning on them, and they all eventually ended up dying. I bought another packet 25 Cedars, planted them again, the winds kind of went down, I still saw a little bit of die back, but they all survived, and I was very patient with them and very, you know, giving them proper water throughout the year, and they're starting to reflash and grow back. And that damage that I saw was called transplant shock. So when they lose those fine roots there, they kind of they actually, you know, literally get shocked, they don't have the ability to take up moisture, and you will see some die back commonly if that root loss is significant. So what I would say to that is just don't freak out immediately. Watch them, do everything you can to give them proper moisture and protection, all that stuff. And with

patience, they should come back trees are very resilient, but that transplant shock is very, very common in bare root seedlings, so just watch them and do everything you can to kind of retain that moisture,

**O** Olivia Hanlon 26:30

Billy, obviously we can't control the weather, but we can do some of those things like physical protection and things like that. So what kinds of things should we be thinking about to get ahead of those pests and pathogens and planning for any adverse weather possibilities next year when we start our planning for our trees?

**B** Billy Beck 26:47

I would say my biggest point on that would be the droughty summer. Right now we haven't had rain in our place in almost a month, any kind of significant rain. So really think about if I plant these seedlings in the ground, am I going to be able to maintain them with through watering? Like do I have an outlet out there? Do I have a truck with a tank? Do I have a drip irrigation system? How in the world am I going to do that? My buddy, my neighbor, has several 100 young seedlings and he has his tank in the back of his truck, and it was taking him three hours around to water all these seedlings in times of drought. So I would say planning for proper moisture retention and proper can I water these things if it goes bad? I think is the probably the number one thing you can do to increase vigor and prevent any kind of pest and pathogen issues in the coming year. And like I said before, really diversify, especially for pests and pathogens. So diversify and go native with your tree plantings. I always tell people, check out your site, pick out a native species list that meets that site's conditions and then pick out the characteristics you're looking for: flowering, nut production, songbirds. Don't go backwards, like I want this, this and this and it's going to I'm going to plant it here and just see what happens, so always work, let your site be the guide.

**O** Olivia Hanlon 28:02

Alright, and you're getting a little ahead of us there, Billy! Next on your list, you had soil insights! So let's talk about that a little bit. What were the struggles there? And how can people help plan for that?

**B** Billy Beck 28:12

Without doing anything in the field, you can go online to web soil survey or other tools and look up the soils on your property. And the one thing I learned this year was that those are large scale kind of estimates of the soils. You really got to go out there and start poking around to see what is out there. So I'll give you a great example, I wanted this series of fruit trees on this hillside, and I just wanted them they're very badly. And then I went out, I started poking around and the soils were so variable, I ended up not putting them in there at all, and I was kind of bummed out. If I looked back in aerial photos, and I found out that was an old livestock inclosure. You can see evidence where they moved soil around for like putting postholes in and things like that, so I wouldn't have known that if I had not gone out there and started messing

around. So I feel like the spring I dug two to three holes for each tree I actually put in the ground. But yeah, really know your soils. And I think go beyond looking up on the soils web, but actually go out there, start digging around, start poking around. And I said this before planning, planning, planning, just watch the site for a year. Watch where the high winds occur. Watch where water pools and doesn't drain, and then you can really you know, add to your knowledge of okay, this is what species is going to work on that. But my soils were incredibly variable in some spots, and I wouldn't have known that if I wouldn't have, hadn't gone out and started messing around. So, but that completely changed up my planting plans. So if you get the right species on the right site, you're going to have a higher, more vigorous tree that's more resilient to pests, pathogens, climate, weather, all that kind of stuff.

O Olivia Hanlon 29:47

Yeah, and that makes a lot of sense, Billy. Once we've kind of analyzed our site, found our soils, things like that, what would you recommend as the best resource for folks to figure out what trees best fit those areas? Would survive best? Would thrive best? Can they find that information from the nurseries themselves? Where should people look for that?

B Billy Beck 30:06

Usually, a nursery will have their species online and then they'll have the site conditions that that species grows best in. Also think about things like how big does the tree get? How fast does it grow? Is it shade tolerant? Is it shade intolerant? Also think about things like, you know, sun exposure, if you've got a thin bark tree and a wide open field that can be prone to that freeze thaw what they call sunscald in the winter. There's a lot of great resources and there's a brand new resource from the Iowa DNR that was just flipping through, which is awesome. It's called Rethinking Acreage and Rural Tree Plantings. If you go to the Iowa DNR forestry website, and it's called Rethinking Acreage and Rural Tree Plantings, it's got almost everything you would want to know about planting trees on your acreage, including species selection, their growth rates, their beneficial characteristics, like you know, fall leaf color, pollinators, fruit production, and then what sites they'll do good on. So that's a really great resource for that. There's a couple other ones too. There's the ISU horticulture and home pest news website. So a lot of great information, especially on pests for acreage owners for their trees, and crops, and gardens. And then there's ISU forestry Extension website. And I'll do another shameless plug. We've got our upcoming events page, which will list all the Extension Forestry activities around the state for fall of 2022. But check out that new pub from the Iowa DNR Rethinking Acreage and Rural Tree Plantings. It's really helpful.

O Olivia Hanlon 30:12

Alright, Billy, you had a fifth and final struggle on your list that you shared with me. So why don't you share that with all of our listeners?

B Billy Beck 31:37

Sure, it's with herbicide drift, either from chemicals you apply to your own lawn or chemicals that drift in from adjacent activities. I won't get into the chemicals here or anything like that

that drift in from adjacent activities. I won't get into the chemicals here or anything like that. But, there's some things you should do. I learned this from my buddy this spring, if you do suspect herbicide damage to your plantings, because I've talked about these are a heck of a lot of work. And they bring a lot of enhancing the value of your property putting these things in there. So if they're knocked out in one fell swoop, it can be frustrating. So I always suggest this before it even may happen. I like to get photos and species lists, and maps and ages of everything I plant, which I know sounds incredibly excessive. But get the photos, get where they're located, get the ages, the dates, you put them in there, a map of the plantings, it's very, very helpful when it comes time to because sometimes if it gets zapped, you may not remember what species it was and that kind of stuff. So I love to get before photos and maps. I would recommend reaching out to the IDALS Iowa Department of Ag and Land Stewardship's Pesticide Use Investigation and Enforcement, they're the ones to kind of reach out to if you do suspect any kind of herbicide drift or damage issues. If you do get some damage, document everything. So take photos of the trees, take photos, take a screenshot of the weather conditions that day, the wind conditions, the date, so do photo documentation of everything you can at the time of that incident, and then reach out to the folks at IDALS. That's kind of a crash course kind of what to do and who to contact.

**O** Olivia Hanlon 33:07

Alright, Billy, if anyone wants any more information on some of the struggles that we talked about today, or if they have any questions, where should they look or who should they reach out to aside from those few websites that you gave us earlier?

**B** Billy Beck 33:19

I would say these are the best resources to really get a good start. I would say check these out, and if you do have questions, you can contact myself, you've got extension offices in every county. If you do need to get any kind of disease testing, I would reach out to the ISU Plant and Insect Diagnostic Clinic here on campus. They've got a great web resource, just search for plant and insect diagnostic clinic. But I would really start with these web resources first. These are really good.

**O** Olivia Hanlon 33:46

Is there anything that we didn't get covered today that you want to add here, Billy?

**B** Billy Beck 33:49

I would just say my quote this year was like the struggle is real. It was just everything bad came together this year. But I will say that trees are incredibly valuable. They're worth putting in the ground. They're worth maintaining. But start small, really plan. If you take anything away today, it's the planning, really plan. Can I plant these? Can I properly maintain them to get them off and running and be competitive and via highly vigorous, resilient tree? and also persistence and patience. You're gonna have trees die. I learned that a lot. You're gonna have leaves beat up, you're gonna get snapped trees, you're gonna get stuff destroyed by deer, but just recognize that that's going to be normal, and I learned a lot about patients this year.

They're very, trees are very resilient, even after the beetles defoliated a ton of mine. They did come back because I gave them things they needed for high vigor. So I don't know, patients, patients, patients.

**O** Olivia Hanlon 34:40

A good tip for us all around. Right, Billy?

**B** Billy Beck 34:42

Yes.

**O** Olivia Hanlon 34:43

Alright. Well, thank you very much for joining us today, Billy, and sharing some of the struggles that you had this year in hopes of helping people get that planning done, and we really appreciate you having you on.

**B** Billy Beck 34:54

Thank you, Olivia. I appreciate it. You know what, I'm glad I did all these because I learned a ton. Even though it wasn't the best. That's where you'll learn. So I really appreciate you having me on here. So thank you.

**I** Iowa State University Extension and Outreach 35:02

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