



Season 2 Episode 2 – Plant Propagation

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Announcer:

From the Ground Up. A podcast of the Alabama Extension Home Grounds team, educating you about home landscapes, gardens and home pests

Brian Brown:

Thank you for joining us today on From the Ground Up. My guest today is Jayne Luetzow and she is a Regional Extension Agent from northwest Alabama.

Jayne Luetzow:

Thank you, Brian, for having me. It's great to be here today.

Brian Brown:

So Jayne, she grew up in the nursery industry, and she's going to talk to us today about propagation. There's a lot of questions about propagation. So let's start from the beginning. Well let's start with your, with your background. Tell us how you got here.

Jayne Luetzow:

Well hi everybody. My name is Jayne and I am from native of Montgomery, Alabama. I grew up in the retail and wholesale nursery industry, in Montgomery. and I am now a regional agent here in northwest Alabama. My background, is in propagation, but my passion is growing plants. And, you know, we have a lot of homeowners that call me, Master Gardeners that call me, about how do I propagate this? Either for just, for pleasure- maybe

they just want to learn how to grow plants- or they're trying to do it for a business or selling their plants. So that's a lot of times when I get questions about.

Brian Brown:

So you've been involved with the nursery industry since birth, I guess?

Jayne Luetzow:

Yes. Yeah, I can remember my dad, actually, he would have my sister and I, teeny tiny babies and toddlers sitting on the pot and wagon, while he's sticking cuttings. Or, you know, he's teaching us how to propagate stuff from just knee-high. And, so I've been doing this a long time. I may be young, but I've been doing this a long time.

Brian Brown:

Well, you're perfect for this subject, so, let's just start from the beginning. Tell me the types of propagation that there are. What do you do to get started?

Jayne Luetzow:

Okay. So from the very beginning, you really you have two types of propagation methods. There's sexual propagation and then there's asexual propagation. So sexual propagation would be for example, seeds. You have to have a male and female egg, and then the pollen that makes the, the new little plant.

The other type of propagation is asexual propagation. That's probably the primary form of propagation. So that's going to be things like cuttings, air layering, might be grafting, separation and division, just to name a few.

Brian Brown:

So there's a lot of different things you can get to. And it's, it's a really deep science, when you get down to it. What's your... what would, let's start with asexual propagation. Tell me about that.

Jayne Luetzow:

Okay. So probably the most common type of asexual propagation be cuttings, taking, cutting. So, there are different types of cuttings. You can do what we call a soft tissue cutting. we have a semi-hardwood cutting and then we have hardwood cutting. So soft tissue would be anything that is herbaceous. Maybe you've got sweet potato vine, for example, or you've got, that aloe vera plant, that you're wanting to propagate.

So what I'd want to do is, take about if it's, for example, if it is the aloe vera or maybe a snake plant, that's a really common one, I just had that the other day question, you'd want to get a little piece of it, roughly about 4 to 6 inch piece. And you want to take the cutting right above the node, and that node right there, that's where a lot of the growth is happening in the plant.

That's where a lot of that tissue is going to be pushing upward, trying to form a new plant. So where you want to take that cutting is right above that node. And then what you'll want to do if you're doing a soft tissue cutting, you can simply put it in a little glass of water and stick it in your windowsill or a sunny location.

You can also take a softwood cutting, and you can do this for other types of cuttings, you can take that cutting, put a little bit of rooting hormone on it. Rooting hormone is natural, it's found naturally in the plant, it's from indole acetic acid, or IAA, and you can find it in many forms.

Rooting hormone it comes in a liquid, a powder and even a gel. But what you'll do with that rooting hormone is on the base of the cutting, you'll actually dip it into the rooting hormone. Now, one thing I always tell people is don't directly dip into the container itself. Put a little bit of the hormone- rooting hormone- into a separate container. That way you don't have cross-contamination.

So you'll just dip it in to your rooting hormone, and then you can place it into your soil media, so whether that's potting soil, directly into the ground, what have you. And that can be that's a method for softwood, semi-hardwood and hardwood cuttings.

For semi-hardwood cuttings, that's going to be cuttings that have some slight flexibility. Not completely woody throughout. So many of your shrubs can be done in this manner. For hardwood cuttings that's going to be your, there's typically plants that are taken during the dormant season. So many of our trees, a lot of fruit trees, are done in this manner or can be done in this manner.

Roses are another one that's very popular to do as a hardwood cutting, and they are completely woody throughout. So again, just to kind of recap, that method is going to be you take about a 4-to-6-inch stem cutting. And what you'll want to do is you will take that and cut it right above the node.

So that node is where the leaves start to- that point of attachment where the leaves are, so you want to take that right above the node. And then you'll take off the bottom, any lower leaves, and then you'll dip it into the rooting hormone and then plant into your soil media. The other thing you'll want to do to is also to remove any flower or fruit that plant might have.

The reason I say that is that poor baby plant, it's trying to form a new roots. And if it's having to support flower or fruit, it's going to struggle a little bit. You really want to try- I always say this to- you always want to try to have the plant form a really good root system, and then you can focus on the shoots system when you're doing a cutting.

Brian Brown:

So, Jayne, you mentioned softwood cutting, semi-hardwood, and hardwood cuttings. Is there a difference between the three or is there a better method for an individual plant based on what it is? So you mentioned roses. Should roses, can they be propagated at any time, or do they need to harden up before the fall?

Jayne Luetzow:

Yeah. So, just to kind of backtrack a little bit. So the differences between softwood, semi-hardwood and hardwood cuttings, softwood, the tissue is going to be flexible. You would be able to bend it and it's going to be fleshy, it's going to snap really easily. The second, the semi-hardwood, is not completely, usually that's the current season's growth for the plant.

The softwood cutting is going to typically be the current growth or what's new, it's going to be that current growth. And then the semi-hardwood is going to be the current season's growth. It's a little bit, not completely woody, so it's somewhat flexible and it's going to be able to bend, but it'll snap at about a 70-degree angle.

And then when you get a hardwood cutting that's going to be woody throughout. And typically, you want for a semi-hardwood, you want it to be at least the diameter of a pencil. Softwood and semi-hardwood can tend to be a little bit smaller, and not as well developed. For your question about the roses, usually you want to take those as either semi- hardwood or even hardwood, those tend to do better.

I really wouldn't do a rose with softwood tissue. They tend to be weaker or develop a weaker plant. So what I would actually encourage you to do is, take those either in the summertime or even in when we start to go into the fall when they go dormant.

And then you can actually, if you do something, for example, a hardwood cutting, you want to take them when they're dormant, cut them off just above the node, and then you can actually put them into what we call the chiller, into the fridge, allow them to harden off slightly. And then in the spring you can go ahead and make your cutting if you like.

You can do this also for, many of our, fruit trees. We do this also for, if you're getting ready to graft, that's another form of, propagation. So, we see this a lot in the industry. Matter of fact, a lot of times- I'll just give you the example in my family- a lot of times we get rose, rose cuttings sent from California, and then we often are sticking those cuttings in about December. So around the holidays, that's when we are actually sticking cuttings, believe or not, and it's so that they'll be ready for the spring.

Brian Brown:

Yeah. That was kind of a shameless plug or a shameless question for me because I have a I have a rose that was my great grandma's, actually probably like my third great grandma's, and it's a really tiny, it's a beautiful little rose. It loves cold weather. It's very odd. But I really want to propagate it. I don't want to lose that. It's a, it's a sentimental plant, like a lot of plants are to people. So it's kind of a shameless ask there.

Jayne Luetzow:

Not a problem.

Brian Brown:

So what are some what are the easiest methods of propagation for homeowners?

Jayne Luetzow:

Okay. So some of the easiest methods are going to be layering. Layering is actually an old form of propagation. It dates back to the medieval times. There's several methods within layering. So we have what's known as simple layering. We have what's known as air layering. And we have serpentine layering. These methods of layering are really very similar.

I'll start with simple layering. So simple layering is when you take a flexible branch of either a tree or a shrub. A good example might be a rosemary, a rosemary plant, or something like a forsythia or spirea. And what you'll want to do is take- that the plant has to be somewhat flexible, you have to bend it down- and then what you're going to do is you're going to, cover it either with soil, you can also use a rock or a brick, and you're going to simply cover that. And then what's going to happen is the plant is going to form a new root system and then a new baby plant is going to start to form.

Now, when it forms, what you'll do is you'll come on the backside of it and you'll simply cut, and then you can take that new plant and pot it up into a container. Maybe you want to put it in your yard. That's called simple layering. Some of our plants naturally do this, for example, strawberries, spider plant.

I like to say that they develop simply. I like to compare it to a, the mama and the, baby with the umbilical cord. Essentially, the new baby develops while still attached to the parent plant. And that's, that's essentially what layering is. And again, there's several forms or methods. Simple layering. Air layering.

My second method is air layering. This is actually a new form of propagation for me, but it's really kind of cool. It can be done on a lot of our tropical plants, in our interior plants or our house plants. Really you want to do this in the spring or summer time. So what you'll do is, you do this on a stem, you'll take a good, clean knife or a pair of scissors...

Brian Brown:

...and when you mean clean, you mean sanitize?

Jayne Luetzow:

Yes, yes. I do want to repeat - that's going to help with preventing cross-contamination and disease, plant disease. So what you'll want to do is, for an air layer, you'll simply cut, take your knife, and you'll cut around the stem about a 4 to 6 inch, lengthwise. You'll cut around the stem, and you'll remove the cambium layer of the bark. That's what you're going to want to remove.

Then you will simply take some sphagnum moss. You'll have made sure that you moist, that you wet it, let it soak in some water prior to using, and then you will put that sphagnum moss around that open cut wound. And then you will wrap it around, place either some aluminum foil, you can also use saran wrap.

Now in my experience, just using an aluminum foil works fine. But you got to use that sphagnum moss. Another tip, that I tell people when they use this, put a little bit of rooting hormone on that spot that you have, what we call girdled or you have removed the bark from, that's what you want to take and you want to put a little rooting hormone on it, and then you'll put your sphagnum moss and then put your aluminum foil around.

Brian Brown:

And it doesn't take a lot of, of...

Jayne Luetzow:

No. Okay. No it doesn't. Just a little bit. Yeah. Just a little bit of rooting hormone. If you want to put set paint it on there, use either a simple little, watercolor paintbrush, or even your finger. in some cases, you can just use your finger and, put that rooting hormone and then you'll want to make sure that you put your sphagnum moss around that girdled or that open wound, and then, place the aluminum foil around it.

Typically time frame, you'll get a new plant, the roots will actually develop in that spot in that place that you have girdled, and a typical time frame is going to be around 4 to 6 weeks. One thing I often tell people is to check it every once in a while because you can lose moisture.

And the best time to do this is actually going to be summertime and in the spring. You don't want to do this in the wintertime. Because of our heat and humidity here in Alabama, we actually kind of make a mini greenhouse, if you will, inside that aluminum foil and inside that little cocoon, if you will, for the plant to develop.

(right) And then it simply when it's ready, you'll cut from the bottom of the aluminum foil, from the bottom of the plant, and those roots should have developed. And then you can stick it into the ground or into a pot or container. And the best plants that do this are going to be your tropicals and your house plants.

Brian Brown:

Okay. And you could do that on trees as well, right?

Jayne Luetzow:

Yes. Yes you can.

Brian Brown:

In class when we were going through undergrad, we did it on a, I think it was a weeping cherry. And that was that was really fun to see that. And it's, it's free plants and, it's a, it's a really cool method and it's very, very easy to do so. So what are other types of propagation that that's really easy for a homeowner to do?

Jayne Luetzow:

So another type of propagation method is going to be what we call separation and division. So they're very similar. So let me just tell you the, the difference between the two. So division is when you have a plant, for example, many of our monocot type plants, so our grasses, turf grass is another example, ornamental grasses.

You can do this with some of our dicot or our shrubs and trees, but mostly this is going to be for our monocot plants like daylilies, that's another good example - agapanthus if you're down in South Alabama. When you divide plants, you're basically taking a plant that has become mature, very mature, maybe for its spot, and you're going to take a whole plant and you're actually going to separate it into chunks, or into hunks, if you will.

And naturally, a lot of these plants will have a natural spot where they will divide. So matter of fact, just yesterday I was out with our Master gardeners, and we were dividing some daylilies, and, and you'll see, you'll notice where they will naturally split. You'll have a new, plant that is developing, and you want to split that.

Plants are actually very resilient. So I know sometimes people are hesitant to want to rip them apart. But it's okay. You want to just make sure that you keep the shoot and the root intact, and look for those places, on those spots in the plant where they naturally divide.

Now, that's division. For separation, it's very similar, but that's going to be most of your bulb type plants. So, think gladiolus, daffodils. What you're going to be doing is separating the main bulb, if you will, from the baby bulb. I know I've used that analogy already with separation of the parent and the baby, but this is when you've got a new baby plant that's starting to form and it naturally splits, that's where you're going to you're going to pull it off.

Brian Brown:

And that's why it's called a nursery, right?

Jayne Luetzow:

Yes. Yeah. That's why it's called a nursery. Because we are growing.

Brian Brown:

Growing babies, plant babies!

Jayne Luetzow:

Baby, baby plants. Yeah.

Brian Brown:

Right. Right. Okay, so we covered all or several of the methods of asexual propagation. So what about sexual propagation?

Jayne Luetzow:

All right. So sexual propagation is when you're propagating via seed. And I know that's probably what most people are probably most familiar with. It is one of the most economically, the easiest, for people to do. But it can also be the most frustrating because you've got to wait until that baby seed turns into a mature plant.

It also takes a little bit more time, versus your cuttings or layering or separation and division. So plants that are easily propagated by seed are going to be mostly your annual plants. So that's going to be things like, your tomatoes, your lettuces, your herbs, some specific cosmos, zinnias, many of your bedding plants, begonias, vinca.

This is the main and primary method of propagating many of your annual plants. Not that you can't do them by other methods, but this is probably the most common and going to be most economically easy for a homeowner. Now, when you do propagate by seed, you have what's known as either direct or indirect seeding.

So, you'll have to look at the package when you purchase the seed and it'll say, hey, you need to direct seed this or indirect. Now what that means with direct, in regards to direct seeding, that's where you plant it directly into your garden. That plant is not going to move. It's going to grow right there.

Indirect seeding is very common, especially for things like tomatoes and peppers that's going to be indirect seeding. So you'll start and sow those indoors, and you're going to let them become a nice little seedling. And then transplant into the garden or into a container wherever you would like a plant to be.

So that's, that's the main thing. Timing is also very crucial with seed. So making sure that you sow them at the right time, making sure that you water. Water is also and I didn't mention this with asexual propagation, but water is crucial. You cannot allow, say, for example, your cuttings to dry out. You cannot allow your seeds to dry out.

Now, you don't want to overwater, but you want to make sure that you don't leave them for days without watering, because otherwise they're just going to sit there. And one thing that we encourage in our, I encourage homeowners to do when you're trying to propagate by seed, is actually to either scarify or stratify, or stratification.

Scarification, that's basically what you're trying to replicate in, in both of these actually, scarification and stratification, you're trying to replicate environmental, the environment for the plant, naturally. So whether that's, for example, going through the gut of an animal, that acidity, for example, that would be an example of stratification, or scarification, or by simply placing that seed in a, a little bit of a wrapped, placing the seed in a paper towel, and let it be wet and then placing it into a windowsill. That's going to help start that germination of the seed. That's what we encourage, I encourage people to do.

And again, always look at the packaging when you get it. It's very common for people just to rip open a package of seed and they just start planting. So it's really important to read that packaging to know am I direct seeding, am I indirect seeding, do I need to scarify or stratify the plant or the plant seed before planting.

Most of the time when you want to sow seeds, or actually the best time that as far as temperature with plant in plants go, they prefer temperatures of about 70 to 80 degrees. Too high of a temperature or too low of a temperature, you're going to have a struggle, with plants trying to germinate. You're also in regards to asexual propagation, you're also going to struggle for your cuttings or layering.

So most of the time we try to encourage our homeowners to, when you're going to sow seeds, you want to do this in either the spring if you're trying to grow annual bedding plants, start them in the spring. You might also if you're a homeowner, start for your spring or summer garden, your vegetable garden, you want to start those in about March or even in late February. You want to start them indoors, and then you can transplant in about April.

If you're in north Alabama, you're in, mid-April is when you transplant and planning your garden. If you're in south Alabama or central Alabama, you can do this in about early April or even mid-March, you can transplant.

The other thing too, you want to make sure that you place your, sowing your seeds, you want they have to be in full sun. Regardless if you're planting indoors or outdoors, most all of our seeds, they're going to require full sun.

Now, there are some exceptions. There are some plants that actually do need darkness,

and that's called photoblastic or negative or positive photoblastic. So if they need sunlight, they're called positive photoblastic. If it's they need darkness, that's negative photoblastic. So that's, that's the main thing is you got to have good full sun. Last but not least, you do need to have a good growing media or soil media.

And I get often asked this, 'is what's the best soil media to grow seeds in?' And that can actually vary. The main thing I always tell people is you want well-draining soil. For most homeowners and what they have access to, potting soil, but potting soil is really what you want to try to sow your seeds in.

You can also sow seeds in something like perlite; very light, well-draining material, that's what you're looking for in regards to sowing, sowing your plants. I have also seen where people will start their seeds inside and then decide that they, that maybe I'm not watering them properly or I can't take care of them properly, and then what we can do is set them on, like, a little irrigation system or even make a little mini greenhouse for your plants, and this can be for cuttings or for your seed.

One thing I tell folks is if you can take a tub, like a plastic tote, put some drainage holes in it, put your soil media in the bottom and then you can either sow your seeds or if you have your cuttings, you can put them in there and then cover it with the plastic, a clear plastic, and then place into a, a good spot in your home, maybe on your back patio where you can receive some good sunlight.

I've also seen where we've upcycled and used those plastic containers that you get from the takeout restaurant. (Oh, yeah. Yeah). You can make a little mini greenhouse out of that as well. Again you just need, make sure you have holes in the bottom, and then you can make a little mini greenhouse.

Brian Brown:

But it needs to be clear.

Jayne Luetzow:

Yes, it needs to be clear so that you get good sunlight penetration through there. And again, you're trying to make a little dome of humidity. That's what you are, that's what you're really shooting for, is making that little, mini greenhouse a humid environment.

Brian Brown:

So you can really, theoretically, you could use pretty much anything as long as it has drainage and has a clear top where it can get some sunlight.

Jayne Luetzow:

Yep, yep. And, if.

Brian Brown:

So be creative.

Jayne Luetzow:

Oh, yeah. You can be very creative. And not to, not to shame people, but you don't have to go out and buy these big, fancy greenhouses. I will tell you, most of the time in the nursery business our greenhouses are not, our propagation houses, are not super fancy. It's a lot of times it's made of wood, a little bit of metal, PVC pipe and some plastic.

So you can even for the homeowner, I would encourage you get creative. Something also as simple is, hey, I've got my cutting or I've got my seed, and I take the top of a, a bottle of a plastic bottle and place that plastic bottle over the top, with a little bit of air. You know, you can, you know, you can make a really cool little, mini greenhouse.

It's great activity also for kids. (Yeah). So, so don't limit yourself when it comes to propagating. Also, one other thing, just to plug, you will save money by propagating your own plants. Now don't go out and take cuttings from random strangers' yards. I always ask, or don't take seeds from random strangers yards, always ask, but you can save a lot of money by propagating your own plants. It just takes, as with anything, it takes a little time, it takes a little TLC, tender loving care, when you're trying to take care of your plants.

Brian Brown:

But it's also a good way to, like, if you have a plant that someone loves, you can propagate it for them and give it to them as a gift.

Jayne Luetzow:

Yes. Yeah. So I've seen that.

Brian Brown:

That's the beauty of plants. They can easily be reproduced, but people just want to go out and buy new ones. And that's fine, you know we encourage people to support local nurseries and local garden centers, but you can do a lot of this yourself too. And experiment too. I always tell people to experiment, write notes, take really good notes on what you're doing.

You know, what you did, take pictures on your phone, you know, try to try to keep up with what you did, how much of, you know, if you put fertilizer on there or things like that. You know, just try to keep track of what you're doing and then play around with it. I mean, we're always learning. I'm always learning. You're always learning. So, it's that's what makes it fun is to get out and learn and to experiment and to learn yourself.

Jayne Luetzow:

Yeah. Horticulture in general, and especially propagation, is a science that keeps evolving. And, you know, you can be as creative and it's a bit of an art and science, if you will, horticulture is. And propagation is something to, you know, experiment with. Yeah, you know, we're always coming up with new and different ways to propagate plants.

You know, from a commercial standpoint, you know, we use primarily, asexual propagation, just because that plant is going to get very big, very fast. But for the homeowner, you know, you have the time to experiment and really enjoy what there is.

Brian Brown:

When you propagate something, do they need any fertilizer?

Jayne Luetzow:

So, this is a tricky question. So a lot of times I encourage people not to immediately fertilize. If you wanted to for seeds, maybe do a little bit of a liquid fertilizer. But I - usually what you want is to allow that plant to reach a little bit of maturity. Allow it, if it's seed, allow it to become a seedling, and then get it ready for transplanting, and then that's when you want to actually put on your, say, granular fertilizer.

For your cuttings or for air layering, really, I, I'm really trying not to actually stay away from fertilizers. The main thing with when you're propagating is that humidity, and the temperature, water and sunlight, that's what you're going after. And when you do fertilize, you want to make sure that the plant has a good root system and it's got a good shoot system and it's ready for transplanting. Otherwise you might actually burn the little seedling.

I've seen this happen, occasionally, is a homeowner will be really excited. They've got new, new tomato plants that are popping up and germinating, and they immediately put the fertilizer on it, and then it ends up burning the plant. So you want to allow it to, allow it to germinate, allow it to grow up a little bit. Once they're ready to be transplanted, that's when you want to fertilize.

And we do the same thing for, say, roses. We might get into the nursery or if you're a homeowner, once you have that cutting, and it has been grown in its container and you're ready to, you know, put it into a larger container, that's when you want to, to add your fertilizer.

Brian Brown:

So what about cross-pollination and making new plants when you cross pollinate? Now that may be a little bit out of the realm of this conversation, but any advice on that.

Jayne Luetzow:

Yeah. So I'm going to use the example of blueberries, because that's a really common one that I see a lot of homeowners, they want a blueberry plant, but they only bought one. And so, we have what's called monoecious and dioecious plants. And so you can have plants that have both the male and female part on that singular plant, or we have plants that have male parts and we have plants that have just female parts.

If you, for example, get one of our blueberries, they have they're either male or female. You have to have two. You have to have two of them, in order for cross pollination. Another good example is some of our hollies, in the

nursery industry, some of our hollies. Also, if you want berries, you have to have the male and you have to have female

And it's important that you have them planted near each other, at least in the same backyard. Otherwise, what's going to happen is you're just going to have really pretty little flowers, but no fruit, for example. And that can be a challenge for homeowners if you're trying to have good cross pollination. If you ever have questions and you're like, I don't know if I have male or female, or if it's monocot or dicot or monoecious or dioecious.

One of the things you will need to do is to, you can always research it. We highly recommend that you check out our Extension website or any Extension, state Extension website, they'll give you good information about that specific plant. Or do a little research when you go to the garden center, ask those garden center representatives, say, 'hey, do I need to have two plants or one plant if I'm going to get, good blueberries?' That's one of the other things we always tell people to look for, is to ask and research about types of plants to put in your yard.

Brian Brown:

Well, Jayne, thanks for joining us today. As always, if you have questions about anything with plants, or propagation in particular, feel free to reach out to your local Extension agent and we'll guide you in whatever we can, help you. If we don't know the answer, we'll find the answer so always feel free to contact one of us Extension agents. And, again, thank you for being here. And, we'll hope to see you next time.

Jayne Luetzow:

Thank you for having me.

Brian Brown:

From the Ground Up is a production of the Alabama Cooperative Extension System.