Today on Across the Fence we're getting a jump start on the growing season. Whether you're a beginner or a pro our experts have the tips you need to successfully start seedlings indoors. Good afternoon and thanks for joining us; I am Judy Simpson. According to the calendar this is the first official day of spring which means the outdoor planting and growing season is just around the corner and it's time to start your seedlings indoors. With us this afternoon are two green thumbs UVM Extension’s Leonard Perry and Sarah Kingsley Richards from the University of Vermont Plant and Soil Science Department. Good to have you both with us again. Leonard there really are good reasons why you should start your own seeds.

Leonard.: There are lots of reasons Judy one of my favorite reasons is it’s just fun. Of course after long Vermont winters we just love to see green things growing and starting them. Even if I don't get them outside at least I've started and watched them grow through the spring. There's varieties to and so many catalogs you cannot find in the stores so it's a good way especially some of the new All American selection winners you will just not find so you have to start from seed. Also you can save money from seed or by buying plants and you can help save the environment by using recycled containers and not using so much plastic when you buy things.

Judy.: Excellent. Sarah you brought along a variety of seed-sowing supplies. What does someone need to start off?

Sarah.: To start you'll need some media to grow them in. I say media because you don't want to use garden soil. Garden soil is too heavy usually, especially heavier clay soils, especially it also has all sorts of organisms and diseases in there that might affect your seedlings. Seedlings are very tender so you want to start with a good light seed starting mix. They sell mixes specifically for seed starting. You're going to want a lighter texture they won't get as heavy when you water them and you want to make sure it's fairly moist. You don't want to be able to squeeze it and have water come out you want to pre moisten it a little so it sticks to your hands.

Judy.: So it's not quite so dry and fluffy.

Sarah.: Yes you don't want it dry and fluffy from the start.
Judy.: OK so once you have the right mix then what do you do?

Sarah.: You need pots. There are tons of pots out there. There's the traditional peat pot that people are familiar with, it comes in all sorts of shapes and sizes. One variation on that these days is a cow pot and similar things. This is actually compressed dried cow manure so it's very ecologically friendly.

Judy.: So you can always put them right into the ground, is that right?

Sarah.: Not generally a good idea, because these are pretty tight. If anything, score them before you plant them but it's best to pop them out if you can. Give those roots plenty of directions to grow in. Then you have some other options. You have little compressed peat pellets and you can put them in water or put them in your six-pack cell and water it and they will fluff up. Then you have these little other compressed pots that you water them and they pop up in their own self-contained netting and those also fit right in a little six pack. Another potting option is you can make your own pots if you don't want to go out and buy one of these things. Newspaper strips you can wrap around these little wooden jobbies and you squish the bottom flat so you end up with a flat bottom.

Judy.: That's a good idea, make your own.

Sarah.: Then you have some high tech options with this Styrofoam set up that has a wicking cloth that will wick water up from the reservoir then fill with water up to the cells there. That's pretty nice and then you have some other options for keeping plants warm and cozy. Keeping a cat from digging in the newly started seeds.

Leonard.: This keeps the moisture in and then when you're through you put that on the bottom here and it helps keep the flat from wetting if it’s on the counter.

Judy.: Nice reservoir. Great, let's talk about seeds because there's millions of different sources catalogs brochures. How do you decide what seeds to pick?

Sarah.: The catalogs start coming pretty early in the year and you have to exercise a little bit of restraint because in Vermont as Leonard said you just want to see anything green but you also want to keep in mind what's out there for space in your garden. You don't want to go too overboard. Definitely plan ahead, don't order more than you need, don't start more than you'll need. But there's like Leonard said lots of options out there and it's a lot of fun picking from catalogs.

Judy.: Absolutely. Can you use seeds that you might have had for a year?

Leonard.: You can Judy and a good follow-up to what Sarah was saying. You can end up with too many seeds and figure I'm never going to grow all these but you can save some for the next year and a lot of times they will last several years. You want to store them cool and dry like in a refrigerator or 40 degrees and dry, either in one of those reseal able bags or jar with some baking soda and the bottom to absorb moisture out. Then what you can do is to make sure those will germinate you do a germination test. It’s pretty simple here it's not big science. Take a paper towel and roll it up. Then inside you put 10 seeds. I put these in there yesterday so they haven't
come up. You can just watch and see how many will germinate so you know how many to sow this year or whether to sow them at all.

Judy.: Excellent. Also we were talking about the season last year you have a trick that you use a jar of baking soda?

Leonard.: Yes just put them in a jar with some baking soda or powder in the bottom basically to absorb the water out of the air to keep them dry if you don't have a dry situation. You can put them in a regular I often use the jar. If you put them in when there's a lot of moisture or humidity. Again you can put some in a sealable bag but cool is one of the keys to keep them a long time. Some seeds will last a couple of years others may last five years or more.

Judy.: So if I left them in the garage over the winter that's not a good thing?

Leonard.: If they freeze, that’s probably not a good thing, depends on your garage but again if it's cool and stays fairly cool.

Sarah.: This is storing seeds in packets with baking soda, not pouring seeds into the baking soda.

Leonard.: Usually what I end up doing is putting the seeds in a small plastic bag or container and putting it in a container or holder.

Judy.: Being organized so you know what have. Different seeds you sow different ways I would imagine?

Sarah.: Yes. Basically the larger the seed the deeper you sow it. Using some of our examples here: peppers. Peppers are one of those things you like to start indoors because they need a longer growing season. Pretty much when you plant seeds you want to plant them in rows. Especially if you have a big thing like this. You don't want to scatter them about. If you plant them in rows that prevents disease issues to a certain degree. You make a little row and you can use the back of your packet to make a little row. Then you're going to sprinkle them along. Try to spread them out a little bit. You can nudge them along and then gently cover them over.

Judy.: Those are not really deep just below the surface.

Sarah.: Yes.

Leonard.: Roughly I figure about two times the diameter. Of course very fine seeds like to use fluffy mix like this you can sprinkle along the top and then under shake the container and they settle in. That's why I like the label one is to make the row but also I tend to have them all come out at once and the label helps move the seeds around. Room is important to keep out the disease. It will start down the row and not a whole flat which a lot of people to old fashioned way to broadcast them but then disease and are spread through the whole flat. And we're talking damping off which is the main disease. Basically you come up someday and their toppled over that's damping off disease. Too wet probably.

Sarah.: Right. And don't forget to label your rows if you're planting more than one thing in the flat.
Leonard.: and use something like a pencil too. Sometimes it gets wet and it runs and you say what is that?

Sarah.: Pencil on these labels is good. Then if you have larger seeds like these nasturtiums. Those a nice six-pack is usually good spaces them up better. You make a little hole and drop them in and cover back up again. Then large seeds like squash as well you can plant those in even bigger individual peat pots as well or you can use the six pack.

Judy.: Leonard you actually have some seeds that you didn't use any soil with.

Leonard.: That's true and these are called sprouts. They're edible. I have a couple different ones here. You can get different types of containers or you can actually use a jar. You put the seeds in and put cheesecloth over the top, it can be that simple. But if you like sprouts in the salad this is a good way to do it. You basically have a bottom container that holds the water to keep it from going out. Then what we have here are started three days ago some alfalfa. And then this is a cress which is a relative of mustard. It has a peppery flavor to it.

Judy.: Just pull it up? And you eat the whole thing

Leonard.: Yup. And then these will be coming along in a few days. That's something very neat you can do your round right in the kitchen. Just have it under some lights right on the counter. It's great you can have fresh sprouts and see something green over the winter too.

Judy.: That is nice. So now that we've planted we need to water and I think that's where I get into trouble is I over water I think.

Sarah.: Yes that's the main thing you've got to keep an eye on. Don't get over exuberant with your water. Sometimes a squirt bottle with a fine mist is enough to keep it just damp enough. Then if you get a watering can make sure you have one with a very fine head on it so you're not just dumping water on these pour delicate little seedlings. You don't want to disturb the rows too much or mess with the seeds. Let's see if we can get this to go. Yes sometimes they dribble little, you always have to be very careful. Sometimes if you're starting somewhere where you have the room you can start pouring on the floor and then move to the flat.

Judy.: What about keeping them at the right temperature? You might want to put them in a window so that it might get too cold?

Sarah.: Temperature is important you want to keep it nice and warm, that's why you might want to use covered things. Also a heat mat. These are electrical that plug in and keep it nice and toasty on the bottom. That's great if your house is along the cooler side or if you're starting something like peppers that like it a little warmer.

Judy.: What about light?

Leonard.: OK Judy. I brought some pictures of light fixtures. There are many different types. What you want roughly about 16 hours a day if you don't have them in a window. But let's look at those pictures. Here's one I have over some houseplants. It's a simple fixture over those. You want just a few inches above the plant. As you see here in the flat this is one I made at home. It
has sheet mounts on the bottom and two tube fixtures. I use a natural kind of bulb in those. You can alternate the types of bulbs. Here you see little temperature unit monitoring the soil temperature as well. Just simple fixtures on timers that you can buy at hardware stores. Here is a more elaborate unit that you can buy ready to go. You can adjust for height up and down. I just use chains on mine. Here's one under a table that's very attractive that you might put in more of a living room setting. Here are two types of bulbs if you don't use daylight a warm and cool tone again right over the seedlings. Here you see some herbs. In the back you see aluminum foil to reflect some of the light back. That's a little trick you can use especially if it is near a wall. Again there's all kinds of different gizmos and things you can get. I find the timers really useful to have those on 16 hours a day. And leaving the heat mats on right through.

Judy.: That's excellent. I know commercial greenhouse growers have this down to a science and *Across the Fence* visited Claussen's in Colchester recently. We took a look at how they sow seeds.

Welcome to the seeding facility here at Claussen's Greenhouse and Florist in Colchester Vermont. This is where we do all the seeding. Here is a finished prepared flat that's ready for seeding. Each flat has 288 cells. That's 288 plants that will come out of one flat. We bring it over to the machine which runs on air and fiber optic eyes that read the tray. The first eye is going to tell the dimple bar to come down and make a slight indentation for the seed to cradle in. The second step comes to where the seeding begins. It reads the eye and it is programmed to feed it one seed. The needle will drop down a seed and pick up another one for vacuum. In the third stage it comes to the hopper. Which has another fiber optic eye that will give it a light covering of vermiculite to help it through its germination phase. It comes out of the machine then it gets stacked for germination. And every bench in this house has a biofilm with hot water that runs through it so they all stay toasty from top and bottom. Then they get about 3 to 4 days once the germination starts. They'll be laid out and that it can take up to a month to two months and you'll be purchasing it for your home.

Judy.: Alright Leonard in the past you said some plants don't even start from seeds that we get.

Leonard.: A lot of plants from our waterfront gardens don't. They come from a couple greenhouses is in New Hampshire. I brought a few pictures of that to show an example of the technology. Here are thousands of plants in flats down on the floor. They are started on this assembly line basically were people transplant them into these different pots. It moves down there and then they have equipment that moves 50 trees at a time. Just amazing. But then here is under watering from the bottom and heat on the bottom. And a boom overhead with watering all computer controlled it's pretty amazing to see this kind of technology.

Judy.: How long should people wait for their plants to bloom?

Leonard.: Basically to start seeds is to not start them too early if anything wait. That's the main thing it's the most common problem that most people have is to start them too early. I have a list on my web site that has all the dates.

Judy.: Once again we have your website if people have any questions about starting seeds indoors.
Leonard.: Just go to perry’s perennials and look under leaflets and you’ll find a couple on starting sowing vegetables and sowing flowers.

Judy.: Thank you both for joining us today. That's our program for today. I'm Judy Simpson we'll see you again next time on Across the Fence.

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