

This is the ag engineering podcast that rolls right into the details on tools, tips, and techniques that improve you, your farm and our world. I'm your host, Andy Chamberlain from the University of Vermont Extension. And this podcast is sponsored by Northeast Sayre. Thanks for listening. Today's episode comes to you from the Hudson Valley in New York, where my colleague, Chris Callahan and I visit Blue Star Farm. We specifically visited this farm to check out the heated benches they have in their greenhouse. We tagged team this visit, and my colleague, Chris led the conversation, while I primarily focused on shooting photo and videos. So make sure you check out Instagram and YouTube, so you can see that content as well. I hope you enjoy this farm visit as much as we did. Now, let me introduce you to Sue.

So I'm Sue Decker from Blue Star Farm. We are located in Stuyvesant, New York, and that's about half an hour south of Albany. We grow year round. We are in unheated tunnels and we're also five acres on rented property.

Before we get to the heated benches, let's get to know Sue and her farm just a little bit more.

Yeah, so we're this, I mean, all of our houses right now are kind of in between where we're, this is late spring. brassicas mostly and mustards, and we're slowly gonna turn this over to summer crops. We, we concentrate more on spring greens. We're not the first ones out there with tomatoes.

Yep.

But that, that kind of works for us. So, and then we have some beautiful celery on the left there that like, we're really happy with this year. We finally got enough water and the variety is Kelvin and they're just nice tall, long stalks. So that was really successful for us. And, and having listened to what other farmers are doing, we are keeping the plants going by harvesting the outside stalks, bunching those. And the plant just keeps giving us product.

Wow.

So, so that really works. And as our kales go into flowering and raab stage, you know, we, we sell that as a, as a product as well. And, and that makes the best use outta everything for the longest period of time.

And who, who, who are your main markets? Where do you mainly sell?

We we're kind of split 50 50. We do the Hudson Farmer's Market on Saturday in Hudson, which is super close for us. It's only about 20 minutes away. We're very thankful for that. It's a very strong farmer's market. It's farmer run. And then we split wholesale to restaurants and to some food co-ops in the area as well. 2020 kind of revised that balance a little bit more towards retail, less towards wholesale as restaurants closed. Now restaurants are some of them, most of them have recovered, some of them haven't. So that's kind of, it's maintained a stronger retail presence for us. So, which is great.

Wow, fantastic.

Yeah.

Overall, how would you introduce your farm? How many acres? What.

Yeah, we have two locations for our farm. We have our home farm, which mostly is where our greenhouses are located. We have three high tunnels. Two of them are 96 feet and one of them is 144 feet. And then we have three caterpillar tunnels, which are also we're using for summer crops and trellising, and also for winter greens growing as well. We are slowly, we're on very heavy clay ground here. So there's not much that we do here in the fields. We do garlic, which seems to be okay with doing a, a heavy ground, but mostly we're trying to build up raised beds slowly but surely so that we can do a little bit more outside work. We just put a pond in here so that we can change our irrigation practices for surface water instead of well water. We have extremely hard water here. So it actually, we can't really adjust our pH very easily because it's so high in calcium. But basically we farm outside here about a quarter acre and then we have our greenhouses here and then we farm on rental property, another five acres.

Okay, great. And how long have you been a farm?

We've been here for 13 years in business. We started here in 2008, actually in 2009. And I don't really count that year because when we moved here, it was the wettest year in 100 years. And I only had this land to farm on, which was heavy clay. And by the time I got to July and we had another rain event, which was a total of seven inches all at once after many, many inches of rain, I decided, no, it's not gonna happen this year. And I'm glad it happened the first year. And I had an idea about that. And then I sought out some more appropriate rental ground after that.

Yeah.

So that worked out really well.

And so is that where you're doing the garlic or is the garlic mainly here?

No, the garlic is, is here. Yeah. On the heavier ground.

How did you come to farming?

I got involved in CSAs as a consumer. I worked in New York City for a long time, 18 years and I was in the graphic design business and I got involved with CSAs. I got on the core group of that and coordinated with the farmer, Windflower Farm at Ted.

Yeah, sure.

Ted.

My neighbor. Yeah.

Yep. He gave me, he and Jan gave me my first start interning. And from there, I, I was coordinating as a CSA member, recipes with him as the, the shares came down. And then visited the farm a couple times and decided this is really interesting. And I'd like to, I grew up with organic gardens and so it felt almost like coming full circle.

That's great.

On things. Yeah. And then I, I did a year with Ted and then I went down to Charlestown Farm in Pennsylvania and Phoenixville. And I had the opportunity there to work with the farmers that had developed that farm with the idea that I would take over management after that year and run the farm for, for the family that owned that property. And I did that. I didn't have a lot of farming experience at that point, but I had lots of management experience. So.

That must be interesting.

Yeah. It was, it was a fantastic opportunity. The family that owns the farm is, they're fantastic people and were really adventurous in seeking out new ideas and new pieces of equipment. So I got a lot of experience on all of the different pieces of equipment and tractors and, and we had a 300 member CSA there. So, so that was a great experience. And I managed that farm for three years and then we bought this property afterwards.

So super cool.

Yeah.

As you were talking, I was noticing, is that PVC baseboard? What's the story there?

This is not PVC it, but it is, I forget what kind of board it's called, but it's kind of made out of probably like a resin plastic material.

Yeah, yeah, yeah.

We wanted to replace our baseboards with something that we wouldn't have to keep replacing these.

Yeah.

It's okay. It's a little thin. So it kind of has, has.

A little bit of a wall.

Yeah. It has a little bit of a bend to it. It would be nice if it was two inch instead of half.

And you've got, got some perimeter insulation there too. Does that go down like a foot or two.

That goes down 18 inches. Okay. And also on the outside of that is hardware cloth, to prevent the vole action. They still get in here, but we have a very healthy population here. So I think, you know, it's still diminished.

Yeah. Yeah. A bit of a barrier.

It's helpful. Yeah.

Great.

Yeah, and also it's just an insulation against the cold too.

Yeah.

So that cold doesn't really create, I mean, nothing freezes in here ever, the edges, nothing.

And are you, are you, are you adding row cover in?

We, we add row cover for like every 10 degrees. We'll put a cover on. If we have a night that's like, you know, towards the low singles or zero, we, I mean, we, we have temperature sensors in all our houses so that, you know, we will turn on minimum heat to heat to like 25.

Okay.

Underneath the covers.

So the row cover is every 10 degrees below freezing.

Is that right?

Right. That's kind of our standard. Yeah.

Yeah.

It feels about right.

Yeah. Yeah. And you know, we'll hoop things that we have to hoop, but in general we keep everything really close to the plants because that's kind of how they stay warmer. Everything's really tall in here right now. But you know, it's not that tall. We would hoop the mustard and, and the kale and that's probably about it.

And you've, you've got a Ridge vent on this, on.

We do.

This tunnel.

Yeah. We, we have two houses that have Ridge vents, which are great for winter growing. 'Cause they vent that air without having to let the air come over your plants.

Yeah. Yeah.

At this time of the year and in the fall. Drawbacks on it would be that there are spots that are leaky, but overall I'm pretty happy with it.. I bought both of those used, so, so everything came with them.

So did you retrofit that onto this house?

No, it came like that.

Okay.

Yeah. This is a pretty old house. It's a pretty old rimmel, original kind of peak that house.

And so one of the things that definitely we wanted to understand a bit more and see is the, the starting benches.

Yes. Yes.

Can we take a peek?

Yeah. Yeah, definitely. Definitely. And that is out and to your right.

Thank you.

So this way, and some of them are, have automated sides. This, the transplant house has automated sides.

And it are these advancing alternative or.

Yeah, they are. Yep.

Those are nice.

Yeah. I like their controller. They're really nice people. They were really great to work with. We had an issue in here with our controller one time and that they were really good about helping us through it.

-That's great.

So, and this one is doing a lot, so it's got, you know, it's got the first stage vents and then second stage is the sides. It also controls heat in here as well.

So do you do any, any exhaust fan ventilation in any of your tunnels?

We do. All of those heaters have, oh, you mean exhaust fans, like just fans?

Right.

No.

That's great. So you, I mean, you're kind of up on a, a bit of a, a bit of, a bit of height here.

Yeah.

So, and you mentioned you've got sort of steady wind.

We have pretty good wind here. Yeah. So no, we don't have fans. The only fan that we have is on our small house.

Okay.

The sides stay closed on that.

So, so middle of summer peak heat, you, you don't feel like you're seeing.

No.

Any issues. That's great.

No, I mean, the only thing that we do differently is to germinate lettuce. We'll put them underneath the benches.

Okay.

To get that to happen. Yeah. So these are the benches.

Very cool.

I mean, this is about five years old. So what we did is we took two inch foam board. We mounted a router upside down in between two tables, probably not an OSHA standard, but, and then we kind of set it up so it was almost like a table saw scenario where we could set it up and run it pretty much every two inches, put grooves in that. And then we ran that for eight foot boards. The length of this house is

72. So minus eight feet on both sides is this, is the size of our benches. And, and then once we completed that, we put them together and we, it's just really kind of rail metal poles that we constructed with and, and then concreted them in and you can do this many different ways. We didn't, we didn't, I mean, you can't walk on top of this.

Yeah. And sometimes I wish that we could, you know, we would've done that a little bit differently just because I envision doing like over wintering some winter red, radicchios and like putting them in a little bit of sand on top of here and having a heated bench. And that would be really nice. So someday we might revamp, but then, you know, ran the tubing, we put down some commercial sized, aluminum foil to help conductivity with the heat. And then we ran the tubing down the channels and cover it with plastic to kind of save it from watering. And then we also have a capillary mat on which we change every year. We had originally had the idea that we could actually water from the bottom all the time. So we actually set up a, a drip tape and sloped this slightly, but it, it didn't work to my satisfaction. So we, we don't really do that anymore. I also felt like some of the, sometimes the plants got, they needed some tougher treatment, like our brassicas were kind of wimpy. The stems were like, you know, they needed that overhead watering to kind of beef them up a little bit. So.

So would this dry out before the.

It you'd have to really water a lot.

Yeah.

You know, and have that going for a period of time to get that uptake to be where it should be. Yeah. So, so yeah, so we have two benches like that and that's how we start out the season. The nice thing about these benches in the early part of the season and the late part of the season, 'cause we're pretty much year round at this point, is that we can heat everything just on these two benches and it can be nine degrees outside. And as long as we're covering this with row cover, it'll stay 50 degrees in here, which saves tremendously on propane because we don't have to heat a 30 by 72 foot house on a nine degree night. So.

And this, this is heated by a Takagi.

Yeah. This is an on demand. Yeah. Yep. On demand Takagi system. We did try because we have a 20K solar system here. We did try an electric water heater, but it's, doesn't really make sense to do it. It's really much more efficient to go with an on demand system.

So was the electric not keeping up?

With the electric? Just costing too much. Okay. Yeah, yeah, yeah. And you know, we've grown since then, so it just we've exceeded the capacity of a 20K system really at least to get to net zero.

Yeah. Yeah.

Occasionally we have a month that's that goes to net zero.

So this is, I think 120,000 BTU an hour on demand, hot water heater. And it's supporting these two benches.

Yeah.

Which are just shy of 72 feet.

Yes. Yeah, they're, they're about 66 feet long.

And so that one heater comes into, it looks like two manifolds.

Yep. Two manifolds and, and we are able to shut this bench off and heat only this bench. So, so the manifolds will come in here, so there's an outgoing and then a return.

And that's all PVC for the main manifold and then it.

It's all the PEX kind of tubing.

Okay.

The PEX system. Yeah. We have a Delta T, the Delta T Solutions.

So there's a hole of a certain size you drill in the manifold and then these are barbed fittings that just snap in.

Yeah. These guys come pre-drilled. They can come pre-drilled and then these guys snap in.

Oh, the manifolds are from Delta T.

I see here.

Yeah.

Okay.

Yeah, and, and then the tubing comes on a long roll and you can roll it out for as long as you need.

And you know, I I've heard from some growers that the, they, they, they feel they there's a bit of sticker shock on the Delta T stuff and some of the, the heat mat stuff. And how well, how did you land where you landed on that?

I, I didn't think that, I mean, this was five years ago, you know, for the investment of what I can do with these 2 66 foot benches. It's not really, I mean, it totally pays for itself.

Okay.

Yeah. I've had no problem whatsoever. And we, we just, you know, we have, we don't just do water. We do the glycol in the system because.

Okay. Of our scenario that we don't heat the interior of this, if we don't have to, so that keeps the system running all year and I don't have to worry about draining it or.

Right. Right.

Which is a task that would probably get set aside.

Yeah.

Until it was a problem.

This is really cool.

Yeah. We really like it. I mean, I just, you know, it's really fantastic. You can do so much with two heated benches and then we've set up this kind of overhead watering misting system probably two years ago. And now we start our strawberry tips on here. We, we have that set up on a timer. So it goes off every 10, you know, 10 minutes

For the irrigation.

For the, for the misting on them when we first transplant them and have the shoots starting roots.

So that was a question I had is, this is pretty permanent.

It is.

And so you, you make use of it, not just for your early spring starts, but throughout. All year.

Yeah.

All year. I mean.

So what's the, what's the succession of starts that come through here.

Well, you know, when we're starting our main season, onions are all gonna be like the first things that we start on here. Celeriac is gonna get started. And then, you know, we're eventually going to move

through summer seedlings. I mean, every seedling practically gets started on here until it gets too hot and it doesn't really matter.

So these were here.

Yes. Yes.

Couple weeks. Three months.

Yeah, a couple weeks. A couple weeks. Yeah. You know, until they are sized up enough that we're trimming them like really regularly now once a week and eventually things like lettuce that want it cooler don't, you know?

Yeah.

I mean this, the heat bench is not going off during the, the part of the season anyway.

So, so then they, it really becomes sort of a, a spot where you can have starts going.

Right.

Set up for misting set or whatever water you need.

Yeah, and it, I mean, it's run from one temperature gauge. So there's, you know, there's a, a controller here that we can set to any temperature that we want to. You have like many different varieties of plants that want all kinds of germination temperatures.

Yeah.

So you have to pick a medium average and say, we're good.

And know the hot spots and cold spots.

Yeah. And know the hot spots. I mean, your hot spots are gonna be mainly in the front first bench. And then as the run goes to the back, it's gonna be a little bit cooler. And so you can have some microclimate that way.

And these are, these loops, they go down and back.

Correct.

So the looks like.

Correct.

This one goes down and comes back to this.

Yes.

Okay.

Yes. Yes. I'm not sure which is the intake.

Yeah.

One or the other one or the other.

But they're kind of connected closely.

Yes. Yes. So it's a 66 foot run and then comes back 66 feet. So, so it's a, it's a sizable run. Yeah. But it's really nice. We're in the process, we grow a lot of peppers here. So those peppers are all started in row trays of course. And now we're potting them up to 50 cell trays and they can all continue on the heat at night. I mean, it's, it's April 27th and we're gonna go down to 34 degrees.

Right

Tonight so, you know, I'm very thankful.

Yeah.

We've got a nice warm greenhouse here.

It is a lot of nice warm real estate for sure.

Yeah.

Which is great.

Yeah, yeah. And we tend to over winter, rosemary in pots, so all of those can come back here and hang out for the winter and we don't have to worry about them dying.

Do you, so over the winter, do you, do you sort of dial back to just one section of one of these or.

Yeah, we'll, we'll typically dial back to one bench and then cover that regularly. But as soon as we start seeding onions, we've pretty much got two benches going. And we try to, you know, we, we try to heat for as long as we can with just the benches so that we can save on propane.

Yeah.

In that early part of the year.

What's the temperature set point you run 'em at?

It depends, you know, when we are over wintering, you know, we might be setting the benches to like 45, 50 degrees. And then as we get into more seeds that would like a little bit more heat we'll take it to 60. So yeah, right now it's up to 60. So that slowly creeps up as the season moves on and we get more plants on that might want a little bit more heat.

Yeah. That's not super hot though even.

No, it's not, it's not, I mean, a lot of things wanna germinate at 70 degrees, but you know, we're compromising here and you know, it's also based on judging how your season is going and where you're at in your field prep and.

Yeah. Well, you're at, you're at 70 today. Even, even though it's set at 60, it looks like. If I understand that.

Passively, it's getting to 70 degrees here.

So heat's going backwards. So if, if you were to do it over again, what would you do differently?

Well, I would definitely strengthen the, the, the structure itself so that you could potentially entertain the idea of like, you know, a shallow soil or sand scenario to grow over wintered radicchio in. There's some really beautiful varieties, pink and purple and just gorgeous. So we've experimented with that in other ways, but that would be something I would change. And then just, just having, because we started out with electric hot water heater and we relocated that under the bench, our plumbing is not as accessible as I like it to be. So if, you know, at some point in the future, we'll probably tear this whole system down and make it, you know, one streamlined system. So it's all accessible and you know, the things that might wear out or get, need replacing would be your circulation pump.

Yeah.

Which we have located down on the leg here. So making that accessible and probably putting in cutoffs on both sides would help you exchange that out very quickly if it did fail. But other than that, you know, I think it's, I think it's good. I mean, if you, we have built in drains to drain the system too, but like I said, we've not, you know, we added the glycol and we kind of made it excessive so that it's not, you know, if we do add water into the system as things.

You don't need to re-add. Yeah.

Yeah, exactly.

So that's been in you've you've had the, the glycol in for.

Five years, five.

And have you had to check that at all for, sort of wears out over time from what I understand.

We haven't, we haven't. It probably is gonna be coming up on that at this point.

I have to check on that too.

The only thing that, that happens here, because the system's not really in use through the main part of the season is when we get to the fall, there's usually some air in the system.

Yeah.

So we kind of have to burp the air out of it. We keep like a little bucket here, you know, just to, to carry that out of the system and, and this, the on-demand heater has some water that condenses also. So, you know, for this, there is a pipe here that can vent out of the system, but we, we actually just have a bucket there because it's gonna freeze normally if it's going out.

One of the really nice things about these heaters is they're, they're modulating. So, you know, like they have a minimum firing rate of like, in this case 15,000, and it can go all the way up to 120,000, so it's really, you're only burning.

Yeah.

What you need to support the temperature.

Exactly.

Increase, which is just really amazing.

Yeah. And it's, and you know, when I bought this, they will tell you when you buy it that it's not meant to be used for the purpose that we're using it. So, you know, it may break the warranty on it or whatever, but it works really well.

Yeah, yeah. The one thing I know has, I wouldn't say it's been a, a problem, but it's one thing to be aware of is they have a minimum flow rate typically.

Yes.

In order to run and.

Yes.

For what you're doing, it's, you're, you're well over that, but in some cases that can cause a problem. So.

Yes. Yes.

Making sure the circulator is gonna have enough flow to trip flow switch.

To fire it up.

Exactly. Exactly.

That's great. I love the routed recessed.

That was fun.

Yeah.

I wish I had more pictures of that when we were doing that.

Yeah. You sent me some that were really, I got, You must have been covered in.

Yeah w were, this was a new house at the time. And so none of this was here and we could use this as a workshop. So it worked really well. And you know, it, wasn't my original idea. I mean, another farmer kind of turned me onto this idea and I was like, yes, I want it. I think, I think also in the construction of this, I might, the benches are pretty high and I thought that that would be a good idea for us managing, but you know, for the watering, I would actually make them low. Like, like we have on the.

That's a good.

Pallets.

Good point.

Yeah. You know, we do set our curtain opening on this side where we've got all of our baby plants to not come up and over that. So it's, it's lower and it, the breeze comes in under the benches.

Do you ever wish you had a smaller zone of heat mat?

Yes. Yeah, yeah. If you could set it up in different zones. And the thing that we set up here is that that bench on the outside of the house is the first zone and I would've set it up opposite. You want the interior.

A really warm.

Yeah. You don't wanna be heating against the outside. And we did that because we pushed that up against the side because we wanted to save space. We originally thought, well, let's do the whole house like this, but then I thought, mm.

And you'd start on the edge. Yeah. Right.

Yeah. Right. Right. So, yeah. And we do notice a growth difference, you know, because of that, too, that things in the last like three rows of the row tray are germinating much slower. And, and even on, even on the interior bench, the inside here is, is much warmer than the outside edges.

Yeah. What's, what's got you excited about this year?

Well, we're, we're on new ground, so that's, that's gonna be frightening and challenging and exciting too. It's sandier soil so I imagine that things, some things will do better and some things might not, but we, we are building a new building there. So that's really exciting to have a new space to, to work out of and get organized. And, you know, having been doing this now for 16 years, it's not a daunting, as daunting to say, okay, I need a building and this is what I need. I need a 30 by 40 foot space and it needs to have concrete on it and I need a drain and.

Yeah.

Yeah. And I need water and, you know, and a run-in shed and this is how it should look. So, so that part of it is nice.

What do you attribute that to other than just the time? I mean, have there been other sort of influences that have made that an easier?

Yeah. I mean, I think, I think it's always a matter of experience and the, and time growing different things. Quite honestly, when we bought this property, I had moved a greenhouse with me from the farm that I came from, which is an 18 by 24 foot greenhouse. And I was tickled pink that this was the best greenhouse ever. And this was it. I wouldn't need anything else. So three high tunnels later and three caterpillar tunnels. And I'm always thinking of more, you know.

We knew we were here when we turned, when we rounded the corner, we knew we were here, so, oh yeah, there's, there's some high tunnels.

Yeah. - Yeah, yeah. So, so I think a lot of it is experience and I just, I, I really like researching and trying to make things, you know, better and better. The other thing that we're experimenting with is something called structured water. We've done a couple of different experiments with that. The, the device looks like a filter and basically it, it energizes the water molecules so that they are organized and cells can take that in quicker. So they don't have to expend energy actually organizing those molecules because every cell, whether it's in a human body or a plant body, has to do that organization first in order to accept it into the cell. Yeah, so we did a test with onion seedlings and we had a control group that just got our regular water. And we had another group that got one filter at the hydrant and another that got a filter

at the, or it's not really a filter, but a unit at the hydrant and a unit on the wand. So it got an extra kind of zap. And the difference between the two that had the units on was negligible, but the difference between the control in those was obvious.

Oh. Is that, so it's a, is it electrolytic? Is it or.

No. It's this particular unit is structural.

Okay.

So it's kind of, I guess the closest thing you could say is it's simulating kind of a, a rocky bed of a creek, but in a very modulated way. Unfortunately with the units that we had, whether it's our water or the unit, we couldn't replicate the process the following year.

Yeah.

So I'm working with other companies.

Right.

To decide, you know? Yeah. And also, you know, people who might have more experience with agricultural applications.

Yeah.

So we're, we started communicating with a company out of Croatia actually.

Okay. I, I saw something on this not too long ago and it, I thought it had to do with sanitization, surface sanitization through structured water.

Structured water probably has that capacity as well.

Yeah, yeah.

Yeah. Interesting.

Yeah.

Cool. If you were giving advice to Sue Decker 16, 17 years ago, what, what would you.

That's a good question. I would say build bigger than you think you need. I would say be comfortable running your own race. There's lots of other farmers, there's lots of other techniques that you can compare yourself. There's always examples that you won't live up to. Run your own race, you know, look at what you have accomplished and just make sure you're improving on that year after year.

That's great.

Yeah.

Yeah. Good advice for anybody.

Yeah. That's some good wisdom right there. Love it. Yeah.

Yeah. It's sometimes hard to keep that all in, in mind.

Yeah.

Yeah.

You know, and, and I think year after year, I always have to say that to myself.

That's great.

Because there's always, you know, things that you can compare yourself to say, oh, well, I really screwed up on that.

But look at, look at where I come from.

There's also successes too. So, you know, find good people, you know, find good people and pay them as much as you can because it's well worth it over time. I mean, some of my employees have been with me for 12 years now.

Wow.

And that's like, amazing. And I couldn't do what I do if I didn't have them with me and have their kind of experience with my system. So every day I'm grateful for that.

That's great. It, it, it must be in the back of your mind, even subconsciously when Paul, you know, deciding to build a 30 by 40.

Yeah. Building and having it be something you're confident about doing, you know, knowing that you've, you've got a crew.

Yeah.

That's there.

Exactly.

And there for you, you know?

Exactly. And, and I can pay attention to, you know, subcontractors.

Yeah.

And not worry that my harvest is not.

Yeah.

Out to left field.

Whatever this, whatever this year's non crop project might be.

Right.

Yeah. That's great.

Thanks for listening to today's episode. I hope you enjoyed it. If I can ask you or direct you to do one thing, that is to go to the website for this podcast, [ag eng podcast.com](http://agengpodcast.com). That's A-G E-N-G P-O-D-C-A S-T.com. There you'll find the show notes. You'll find links to the farmer who we chatted with today, as well as photos or videos from the call when I visited the farm. If you've got some feedback to share, my contact information's on there, or you can leave me a voicemail and you can do that right from the link in the description in the mobile app. You're listening to this too, so go ahead and do that. Thanks again for listening. And I hope you have a great day.