

MULCH MATTERS EP. 24

Recycling Roots: Theron Smith's Journey from Metal to Mulch in the Plasticulture Revolution

[00:00:00] Nataliya Shcherbatyuk:

Hello and welcome to the *Mulch Matters Podcast* where we will explore the intriguing world of mulch and its impact on agriculture and the environment, as well as update you on the latest research about soil-biodegradable mulch and recycling options for plastic mulch. I am your host, Dr. Nataliya Shcherbatyuk, and I am a communications specialist for the project, "*Improving end-of-life management of plastic mulch in strawberry system*". In each episode, we'll dive into the latest research, trends, news, and insights on why mulch matters and how we can improve plastic mulch end-of-life options. We'll also branch out and discuss other plastics as well as talk to researchers, experts, and practitioners in the field who will share their insights and experiences on how to use mulch effectively in different settings.

[00:01:10] Nataliya Shcherbatyuk:

Hello, hello, and welcome back to another episode of Mulch Matters podcast. And our guest today is the owner of Flipping Iron - Theron Smith. Let's welcome him. Hi, Theron, how are you?

[00:01:23] Theron Smith:

I'm great, Nataliya. How are you doing today?

[00:01:25] Nataliya Shcherbatyuk:

I'm pretty good. I'm so excited you're on our podcast and I'm sure our listeners will learn a lot today.

[00:01:32] Theron Smith:

Hopefully. Hopefully I don't put them to sleep.

[00:01:36] Nataliya Shcherbatyuk:

I am sure you'll not. So, you know what? Let's go straight to the basics and basically back to the beginning, like I like to say, and can you tell us a little bit about yourself, who you are, what you do, how you got where you are, and cover a little bit to start about Flipping Iron, what you guys offer and how it came along.

[00:02:01] Theron Smith:

Yeah, so I mean, we've kind of talked about this on other occasions some of the show, different shows I've been through, but my background in recycling was, I started when I was 16 in the mining industry. My grandfather had a small company, him by himself and he worked at a mine in Mojave, California. And we would go out and recycle metal, when I got married and I was 22, we, my wife and I, we had an opportunity to take over my

grandfather's business and she's actually on here, Alise Smith. She's listening to this podcast and is on here too, and she's still my partner in this, we're 50/50 owners of Flipping Iron. Back then our company was Blue Ribbon Enterprises. Okay, we only did metal and in about 2013, 2014, one of our employees suggested we do a recycling of drip tube. I still remember that job. And we just picked it up and hauled it to a company that had a baler and sold it to them. And we thought, well, that's a new avenue that we can get into for recycling. And from there we've to the point where recycling, we still do a lot of metal. Our namesake Flipping Iron obviously does a lot of metal. We renamed our company in 2019, rebranded. Said we weren't gonna do plastics in 2019, and now at least half of our company, if not more, is focused on plastics. So didn't get away from it, but my wife and I, we do even more than we've ever done, and we were able to get into recycling at a young age and we've just stuck with it since then.

[00:03:49] Nataliya Shcherbatyuk:

That's pretty cool. So, you said, actually, you spoke about that I think during several of your presentations and field days that you bought the company from your grandfather. Is that correct?

[00:04:02] Theron Smith:

Yeah. So he had, it was a retirement company from him. He had actually retired and then somebody had asked him to come and start doing this cleanup. And then as I got older I helped him grow it a little bit more, but it was still his company and then it, I was looking really, we just had different perspectives. I was, you know, 21, 22 looking to secure my future for a long time he was looking to be like, well, I don't really want to grow this, so it was just a great opportunity. There was other grandchildren and children involved and not necessarily in the business, but we didn't want it to seem like he was giving us an unfair advantage. So, we had an opportunity to buy the company from him. And it's been good. We've had an opportunity to keep up other members of our family working for us. Kristi Barron, who's on here as well, she's my wife's sister. She's been with us for many, many years, and actually we just hired her daughter too, my niece, Sophia Barron, and I think she's listening. Well, so, we don't keep, we don't have too much family working here, but you know, when somebody needs a job, it gives us an opportunity to look at our needs and if they, there's a home for them, then we definitely would consider that. So it's been a great blessing.

[00:05:20] Nataliya Shcherbatyuk:

Nice. That's pretty cool. What do you think your grandfather would say now if he would look at the company how it turned around.

[00:05:28] Theron Smith:

Yeah. You know, my grandfather was always a big support of all of us kids, all of us grandkids, and always enjoyed being involved in whatever business we were doing. So, my uncle Eric, he has a business called Get it Done, and he pours concrete for big government projects. And my grandfather would go out there and enjoy that. I think he would have a mixed comments. I think he'd be pretty happy and pretty impressed with the equipment that we have. We have a pretty diversified fleet of equipment that gets our jobs done. I think he would have some sort of sarcastic questions like, what in the world does a metal company have to do with plastics? But, you know, that just be him being ornery like he was. But I think for the most part he would be

pretty impressed with what we did. I think he would also have opinions on how I'm doing it wrong, but that's just what grandfathers do.

[00:06:31] Nataliya Shcherbatyuk:

Yes. He would probably say from flipping iron to flipping plastic, huh?

[00:06:35] Theron Smith:

Exactly. Exactly.

[00:06:38] Nataliya Shcherbatyuk:

Yeah. That's pretty cool. So, you, your company is located in California state, correct?

[00:06:43] Theron Smith:

Yeah, so, uh, I personally live in Tehachapi, California, which is in the mountains of current county, but my company is in Bakersfield, California, but thankfully we've been able to spread out and go really throughout the west coast, but many, many locations here in California.

[00:07:02] Nataliya Shcherbatyuk:

Cool. And for growers who want to get to know more about your company, what would be the best reach to get to learn what you do and all the details about your service? Is it, do you have like a website or is there any other information they can use to learn about you?

[00:07:20] Theron Smith:

So, as you probably are aware, Nataliya, it took you quite a while to nail me down for this, calling me to get that information is not the best, but they're welcome to try my phone number is open to the public, they can have it, a lot of people have it, but the best, the best way for growers to get information is to probably call one of my two cells associate Kristi Baron or Adolfo Toscano. Adolfo focuses highly on the mulch and the fumigation film recycling. And the machines that we put out there to be successful in that, but we also have our website, www.flippingironinc.com, they can definitely get information there. And, also our social media, LinkedIn, Instagram, we're trying to be much more present on that as well, but really the best way to get the most accurate information and up to date information is probably to either call or email one of my sales associates, Kristi Baron or Adolfo.

[00:08:26] Nataliya Shcherbatyuk:

Nice, and let's get more into details about actually Flipping Iron and what you do in the plasticulture world. So, ag plastic space is quite wide and I would say it's growing. So, speaking about Flipping Iron, what sets you guys apart from other providers?

[00:08:48] Theron Smith:

You know, this has always been a question that has come up many times and I think one of the best things, the best, the best ways to put it is that like our diversity and our focus is what sets us apart, really as there's not a

company out there that we are aware of that is as diversified as what we are why that's important is because as markets change and demands change and outlets of the plastic change, our company won't be so tied to one outlet. So, for instance, if all we ever did was let's take a product called vine cover that is in California. They cover grapes and all we ever did was that and then all of a sudden tomorrow there was no outlet for vine cover, our company would be in a world of hurt because we're so singular in our approach some companies have been able to do so and been great success. And I tip my hat to them, but being able to work in so many different industries, being able to recycle plastic and metal from so many different industries we recycle plastic and metal from the mining industry. We recycle plastic and metal from the oil industry. And then obviously the ag industry. We do a lot of plastics and metals. It allows us to be able to roll with those punches a little bit more. And then taking, the other thing that really sets us apart is finding success in one product. For instance, if we Andros made the Mega Binders to recycle drip tape, and that's our primary equipment that we utilize to recycle mulch film. So, when we when there was success with the drip tape, we would take it and modify it to be able to recycle mulch film, few mitigation film, hoop film, tunnel film, vine cover, ag mulch film. Because we were able to be successful in one area, then we were able to be able to take that and what we learned there and modify it to be successful in other areas. And I think that's very helpful to have the equipment in place, because otherwise it's just too expensive and the possibility of failure is too high, if you didn't already have the equipment and the solutions in place for a different area.

[00:11:18] Nataliya Shcherbatyuk:

Yeah, that's great, just to clarify, when you're talking about vine covers, are you talking about the nets or is there something different that I'm missing.

[00:11:28] Theron Smith:

No, so in California, especially in the Central Valley the vines out here are primarily table grapes. They're not wine grapes. There are some wine grapes too, but they're primarily table grapes. And there's off cycle or out of season grapes that come off. So, our primary grapes are Flames and Thompson Seedless that come off in the summer, but then there's varieties of grapes that'll come off. And the fall, and the risk of having grapes come off in the fall is that if they get rained on, they can get mildew on the rain, on the grapes. And it'll cause them to rot, and so they cover grapes out here, especially if there's rain on the horizon. Actually, it's raining quite a bit right now here in Bakersfield. And they, they cover these grapes to be able to protect them from the rain, and then it's just use it single season and then they retrieve it, that's probably one of the besides for drip tape and drip tube, that's probably one of the big things that Andros modified their mega binders to retrieve is the vine cover pretty quickly after they made them. And so, we retrieve that as well. And that there's thousands and thousands of acres that come off every year of that.

[00:12:56] Nataliya Shcherbatyuk:

Okay. Now it makes sense. I was trying to figure out what are you talking about? Okay, great, thank you. And you know, you were talking about diversity and I really like the way you think about it because you know, when you listen to the business people, they like to say you gotta choose your niche and just do it something very narrow, something very important you think you can help everybody with and focused on that. And the way you brought it up that probably two narrative niche is not always the best on niche, or some people say niche I do not know how would you say it? I really like the way you see the diversity. You still stay in the area that's area

if you interested, but you diversify to the point that you cannot put all the eggs in the same basket at the same time. So, I think it's quite important, especially as you mentioned, that the demand is. Changes and, you know, so you gotta adjust to that as well.

[00:13:58] Theron Smith:

Yeah. No, we definitely see the need in that. Our biggest competition, and we don't really consider a competition because we're just so different than them, is local trash haulers and roll off companies. Now a lot of those local trash haulers and roll off companies have bailers, and they have the ability to recycle, and they can do a lot of what we do. And that's a huge help. And Flipping Iron couldn't handle all the plastic out there, so we don't really view them as competition. A lot of times we'll work with them and to be able to help find solutions, but they only work in certain areas. And then if there's an area that doesn't have that service, then that's where Flipping Iron really can come in and help out, so it definitely, it's something that we kind of really figured out for ourselves that works well and. Our growth has been unreal to the point where we've tried to I saw you earlier, my wife is, I feel like that this is a train and my wife is like the breaks of the train because instead of, and I don't mean that in a negative way, I mean that in a positive way is that if it wasn't for her, it might just run away from us. And so, she's been helped great on that and making sure that we stay regulated and stay. Focus and not getting too far off basis. 'cause we get opportunities all the time that we just can't go into because of not having the expertise or not having the manpower or not having the equipment.

[00:15:34] Nataliya Shcherbatyuk:

Yeah, I really enjoy the way you see from competition into collaboration. That's quite important to remember, I think because a lot of people focus on competition and competition, don't take me wrong, I think competition is quite positive because during the competition you really put your mind into developing and adjusting, but competition is great to certain point, and then what's really important is to collaboration. And I think you brought a great example that you let them do what they do, they help you out with that, and then what they cannot, for whatever reason, power, you can help them out with that. I see it's pretty good, you know, like collaboration into sustainability as well as plastic culture.

[00:16:20] Theron Smith:

Yeah, I mean, I think collaboration is, uh, so important. Our success, um, and what we do with Mulch film and fumigation film would only be because of collaboration between ones such as Andros themselves, they're the ones that are really stepped up to the plate and wanting us to help them out there. Uh, and just engineering, um. Monterey Bay Marine Sanctuary, we were able to, uh, go after a grant that we were able to get together and. I'm not an engineering company. We don't build our own equipment. We're not gonna become an engineering company and just is. And they're one of the better, uh, ag engineering companies out there. And so, they were a great company to work with. Now they recycled drip tape, and we have, we stumbled over the same drip tape at times before. Absolutely. Mm-hmm. But our working together has been much more important than the fact that, oh, look. You know, we both worked at the same pile of drip tape or the same, uh, mound of drip tape or whatever it is, and we have a great relationship that way, same thing with Driscoll's. Obviously, they're not competition, nor is Monterey Bay Marine Sanctuary, but bringing together these ones that have, like-minded goals that we can accomplish something has been great. And that really goes for our competition out there with the trash haulers or, uh, other company, other service providers as well.

[00:17:49] Nataliya Shcherbatyuk:

Yeah, that's pretty cool. It's quite important, I think. Yeah. Yeah. And you, you know, I'd like to zoom up a little bit on the state level. So, speaking about California, do you think that California is equipped to recycle all the mulch film, and which is actually used annually? What do you think?

[00:18:10] Theron Smith:

That's a, that's a tough question. So, that question has a lot of, um, points to it. Would make it difficult to answer yes or no. So, first of all. What is recycling compare, you know, what are we talking about recycling here? You know, in a sense, if we're talking mechanical recycling, where you take, uh, mulch, you wash it, whether it's in a dry wash or wet wash, process, and you shred it and you turn it back into, uh, a resin form that can go back into other ag film, I'm not very optimistic on that. California could handle the amount of mulch film that it would produce, just the strawberry industry alone is 40,000 acres a year, and that's just one, one industry here in California that utilizes mulch film. Now, if we talk about, recycling as an ability to divert it from the landfill, so export. Advanced recycling, whether it's paralysis or something along that line and even incineration as application, such as using it as an alternative fuel yeah, I do think that we can, I think that there's a definite possibility of that. I think that export is probably the shakiest, but it's, uh, the most, uh, financially viable. All those others are. Questionable about their financial viability. And really that's what. Comes down to recycling is if somebody wanted to recycle mulch film bad enough and they had unlimited funds, they could do mechanical recycling, but it's gonna cost a lot of money and the product that you get at the end might not offset the cost of what you put into it.

[00:20:12] Nataliya Shcherbatyuk:

Yeah. You know, you, you did bring a pretty good point about the recycling and you also led me to the other questions that I had for you, and that's about actual plastic recycle. So, is the plastic recycling a plastic is really being recycled? And this is quite common question, and I would like you, if possible, just to. Walk through, what do you do? What happens with the plastic that your team is collecting? What's the next step for those plastic types?

[00:20:48] Theron Smith:

So, we are almost a hundred percent beholden to export and essentially what happens is that we collect it from the field. We might process some of it and. And to be able to clean it up a little bit more, when we got into mulch film and fumigation film recycling, that's one of the hardest products to, to recycle. But there were already companies out there, uh, specifically in Southeast Asia that did recycle, uh, ag plastics such as hoop film, drip tape, Vine cover, things like that. So, we didn't go to a company that has never recycled ag film and asked them to recycle mulch films. Our approach was we went to companies that are already recycling ag film and trying to figure out what it would take for them to take mulch films. And it became clear is that we, it just needs to be cleaned up to the point of traditional, uh, agricultural film recycling. So, you know, vine cover and. Hoop film is gonna be somewhere between, uh, 60 to 70% yield. So, if you sent, uh, what, however, if you sent a pound of, or if you sent 10 pounds of plastic, you're gonna get actual seven or six to seven pounds of plastic. The rest would be dirt, water, and organics. And so, we realized that we don't need a. Thorough washing system. We just need to be cleaning up, uh, a little bit to be able to get them to be able to take it. And so that was a big help. And that's, uh, one of the focuses that our grant did is to be able to get us equipment that cleaned

it up just enough so that we could export it to Southeast Asia. But then once it gets there, one of the things that we've done over the last few years is to provide, certificates of recycling tunes like Driscoll's or whoever else has been working with us. Basically, it's, it's certificates that we, uh, that show where it's going, uh, what is being used for. And it's not being just thrown away. there's a logical thought of that. It really is being recycled essentially. These countries are paying us for this material it doesn't seem like a very viable business plan for them to pay us for our material, us to ship it there, and then they just turn around and throw it away There's really no, um, right. There's, that's really not a viable option for them. And that's not a viable business. So, uh, we do know that logically speaking, they are recycling it. 'cause otherwise why would they be paying us for Yeah. Why would they buy it?

[00:23:27] Nataliya Shcherbatyuk:

That wouldn't make any sense for sure.

[00:23:30] Theron Smith:

Yeah, exactly. Exactly. Primarily it goes into low grade plastics, maybe construction sheeting, maybe trash bags things like that, it is not going into higher grade plastics, or even back into mulch film at this time. But there's also possibilities that can change too with some projects being worked on here domestically.

[00:23:52] Nataliya Shcherbatyuk:

And what do you think that would actually take for California or any state in United States overall, you know, to shift away from this? Sending out plastic culture waste somewhere else and try to figure out what it can be done here.

[00:24:12] Theron Smith:

You know, I think collaboration is definitely needed. I think some people smarter than me need to help figure that out. I look at other examples of materials that are harder to handle than ag plastics, one that sticks out in the most of my mind is, is tires, tires are much harder to handle, they have metal with rubber mixed into them and all sorts of additives. In the United States and specifically California, we're just accustomed to recycling tires. They, we don't throw 'em into landfills for the most part. We, if you take it to the landfill, they have a spot, you throw it out and here in California and then they haul it away to a tire recycler. Um, now is that company that's receiving those tires actually recycling it. In a mechanical sense, not really. Uh, they have a couple different options for tire recycling. One of the biggest ones is incineration, they use it as a burning in some of the mining operations and alternative to fuel, and then the other one is they put it into asphalt. Some of the properties that are, we, we appreciate about our tires, the fact that they're resilient, the fact that they, uh, can withstand, uh, a heat and cold and abuse those products go into asphalt to make asphalt be able to handle that same, that same abuse. And so, the idea of, but are we really recycling tires? I think we are, in my opinion we are. Would other people, would other industries say We are, you know, I mean that's, that's for them to decide, but I think that they, that. Um, having a much more broad view of what we can do with this plastic and understanding that it's going to come at a cost when you go buy tires. There's, uh, in California, if you buy tires and go buy brand new tires, they're gonna charge you for every tire you leave behind. As a recycling fee, and that's just mandated. I'm not a big proponent on government mandating anything really, but we understand that for us to get rid of our tires, we just have to pay that. Um, now who has to pay that in the ag industry? I'm

not gonna go down that road because that's a, that's a, I, farmers in my opinion, are already being. Hit with a lot of charges. Right. And so where does that, where does that subsidy come from? I'm not sure. But I mean, I would ask you, Nataliya, like, what, what options do you see out there that, uh, would be a success to be able to handle our mulch film or ag plastics domestically in, you know, what, what options have you seen that are either successful or that you think might be successful?

[00:27:13] Nataliya Shcherbatyuk:

Yeah, that's a good point. It actually, you brought up something that when you were, were presenting the Tyn example. I think that one of, I'm not sure if the misconception, the misunderstanding would be the right word to use, but I think that can be one of the things to, for us to sort of consider. So you're saying other tires really recycled and you think they are. And I agree with you from my personal opinion, because for me, recycling is not necessary. If it was a tire created, then it has to be going back into the tire itself. So, the way I see recycling of the tire is there was a tire, it's been used, it's been wasted, and now it's been used for something else. And it's, it can be absolutely not. Necessary. Even, even even in the same area of ads being used prior to it. And I see it as, as a good recycle options, even when you see DIY of tires being used in the garden, you know, I mean, the whole point is that that tire hasn't been burned somewhere with the toxins released to the air, or it wasn't thrown out in the landfill. Right. So that's, that's my opinion on the recycling. Right. I think it should be the same way. Look at the, uh, mulch or any plastic for that matter. And that's the thing when, you know when the plastic waste plastic culture waste is being exported somewhere else, they're using that to build, like you mentioned, possibly to, um. You know, local, lower quality of the plastic material, but it's not necessarily film that it came from. It can be something else. It can be furniture, it can be any building material, and there are also some studies being done that plastic is being used for vault as well. So, I think what's really would be good, it's obviously to sort of, you know, promote the academic studies and of course I'm a little biased 'cause I'm from academia, right. But you know, when we study and for all those chemical chemists' people and physics, physics people for listening. If there is the way that, you know, it can be seen how the plastic can be used to anything else. Either it's furniture or any even cool pieces, you know, the table pieces, then I know those, the little things, but sometimes those little things give ideas to something bigger. So, it's not necessary. We can't, we have to get stuck if it comes from the ag plastic, uh, field, as the mulch has to go back to the mulch, maybe, maybe it can come back one or two times. For the thinner options. So different options, maybe bigger porous options, but what else can the plastic be used? So probably research and policy makers would be a good collaboration to look at it. But of course, research, it takes time. It doesn't, you know, it doesn't, something not expected to see in the year or so. So, patients, but also. If there is a collaboration to be done with those countries who are doing this already, to learn from them and not to see them as a competition who's buying waste from us to do, to use for something you know, beneficial that they will be using and selling later, maybe we can learn from them what are they doing? So why can't we do that? And maybe the question is simple as financially, it's not sustainable for us to do that here in the United States. Or maybe. We just didn't think about it. Why not to do it here in United States? Yeah. What do you think?

[00:30:58] Theron Smith:

Yeah, no, I think that's, I think that's absolutely the right viewpoint. I think that it's We have a precarious situation that we're in, in the United States or especially West Coast, I would say for California, is we do have a solution that has been great for us for a few years. I did some research back in 2013, China. Put out a, a law called green fence and basically it shut off the, uh, import of scrap plastic from all over the world, specifically United States,

that didn't stay take, that didn't stick very long, but it put us in a really. Awkward and difficult position. Back then but then it, that fence came down. They started bringing it in again, and then in 2018 they came up with national sword. And, um, and then I remember somebody once told me, uh, you know, fence, not very strong sword, much stronger than fence. And so basically, and that, that, that has. That has held China does not take in any of our scrap plastic anymore. And so the, and it really changed the dynamics of recycling ag plastics and it was very difficult for a long time. basically at some after that we stopped exporting mulch, film and fumigation. There was zero export of that, as far as I know, uh, for a long-time other products was difficult to get rid of drip tape, the more traditional materials, drip tape, drip tube, even that was difficult to move. But thankfully, other countries in Southeast Asia started opening their doors and they started taking. Some of that material in. Um, but really, we are in a position again that we are. Are feeling the pain of exporting and traditional exporting and just getting rid of our, our recyclable materials by just sending it to somebody and making it their problem or making them recycle it. We are, we are feeling the pain of that other countries have started to do the same things that China did back in 2018 or 2013. And just recently, Malaysia shut their doors to anybody that wasn't part of the didn't join the Basel Convention, and United States did not. And so, we have not been able to ship much to Malaysia, and they're one of the biggest receivers of AG plastics. So looking at any single solution as the solution is really naive for us, because if that solution shuts its doors or that solution stops being viable, then we are going to be in a very big, in a very big world of hurt here in, at least from my perspective in my geography in West coast us.

[00:33:56] Nataliya Shcherbatyuk:

Yeah, that makes total sense. It's basically what we were talking at the beginning of about diversity. Having one hope on one thing. It's a little bit tricky, especially with all the, you know, changes and developments and moving forward and definitely everything is moving very fast.

[00:34:14] Theron Smith:

Right.

[00:34:15] Nataliya Shcherbatyuk:

And you know, another thing that I was thinking about, and your opinion will be absolutely appreciated. What do you think about marketing itself? And let me tell you what. What I mean by that. So, there are a lot of recycling materials and while I, I was visiting California, I saw a lot of furniture, for example, like outside type of furniture. And it's recycling, it's recycled, but my opinion is that. What's a little bit missing point of all of that is, is the marketing. It's how do you, how do we present that material? And I know that furniture possibly, it's, you know, just one of the examples and it seems to be quite little part of the recycling potential business overall, but. If you just look at the, let's say, outdoor furniture and you are looking at the cost, obviously you probably will think, wow, it's too expensive for be something already used. Right. You know, that's what you kind of like, it's been already used, it's recycled.

[00:35:19] Theron Smith:

Right.

[00:35:19] Nataliya Shcherbatyuk:

But don't you think if that's put up as a marketing of why it's being done and even a short video of the process, of the benefits of that would not that be more, even exciting to purchase things like that because you would see more of the story of the product itself.

[00:35:41] Theron Smith:

I think that's definitely, I mean, I think that companies engaging in, you know, showing the source and, um, being able to stand behind that is definitely going to make it more appealing. I don't know if it' I think marketing would come into play, but I don't know if really consumers are ready to pay more. And I think that's what it always comes down to is like, yeah, you can have a great marketing story and apples to apples if. If that, if, if that one product another is the same price, then yeah, they're gonna like that marketing story. They're gonna like to get behind it and they're gonna wanna, and they'll pay, pay for, or they'll buy the one that has a better story, um, and maybe even slightly more of a price. They still might do that, but if they're looking at it as an, it's. A lot more, for the, for the recycled option, even with the better story. I don't know if consumers are willing to pay that. Um, maybe they are, but I don't know if, I think the marketing is great, but I think it has to be in connection with, the viability of, of cost.

[00:36:58] Nataliya Shcherbatyuk:

Yeah. That might be one of the biggest missing gaps at this point. What do we do with the recycling material? And how we can basically recycle into anything that would be used, but cost would be much lower.

[00:37:17] Theron Smith:

Yeah, because I mean, I think that, for instance, a lot of venues do wanna say they only use, let's say, recycled bags made from recycled material. Uh, maybe a sports venue or something like that. And they, they will. They do want that marketability. They wanna be able to say, hey, we're going green. And so then you do have opportunities of like, of that. But then when you go to maybe, let's say individual consumers, it's gonna be tough. And I think that e even especially with the economic situation in the world. Or in the United States right now is there's just not a lot of extra cash, so somebody has to go buy something and it's a little bit more for a recycled product. I don't know if they're willing to really spin that. So, I guess it depends on where you're marketing it too, because mm-hmm. I do think certain companies want to say they have that green tag, such as venues, and so I think they would definitely, appreciate it more. So, I think it, who you're marketing that too is also important.

[00:38:22] Nataliya Shcherbatyuk:

Yeah. So, it seems like the processing, the cost of processing from the field to the other final product might be the biggest bottleneck. Well, and you know, when we look forward more like looking ahead, what do you see as the biggest challenges? You know, addition to what we already talking about to the long term sustainability and plus the culture.

[00:38:48] Theron Smith:

I think that the biggest, I think the biggest challenges are really just are, are beholden to export for what we do. Um, there's other in companies out there, like on the east coast, I know there is a company that's processing

ag plastics into, uh. Repro to be able to turn it into advanced recycling. But here in California, we have so many constraints. First of all, our logistics to get any of our product anywhere close to advanced recycling is so expensive. It's a lot cheaper for us to send material from California to Malaysia. Then it is for us to send material from California to Texas. So when I say a lot cheaper, more than half or less than half of the cost to go from California to Malaysia as California to Texas. And then our cost to our cost of employment, uh, what it costs to employ people, regulations. Those are our biggest challenges. I'm particular to California because one, I live here, and two, I believe that my ex, my business in its entirety would not exist in very many other states. I think California is one of the few places that has, the recycling culture that needs to, that needs to exist for my business to exist. So, I think one thing is, is for companies that want to. Really be involved in recycling, whether it's advanced recycling, I would encourage them not to be afraid of us not to be afraid of California, I'm probably not an outlier on that half my day is complaining about the regulations and the cost to run my business here in California. But the reality is, is I couldn't run my, I could not run this business somewhere else. So, um, if you really wanna recycle ag film on the west coast, California's the place that it needs to be. So, I think that, that the fear of California and then also I think the, the beholden attitude we have to exporting, we're in a pre-precarious situation with that. I think that really, we have a strong business plan moving forward with flipping iron. We have great collaborators, we have great companies we work with, but if a government changes the rules on us and we can no longer export to that country, it doesn't matter how strong all that was, if that was our primary outlet for material, we will, it'll be, it'll be a tough future for ag film recycling, if that ever does get shut down.

[00:41:38] Nataliya Shcherbatyuk:

Yeah, that's a little bit scary to think about, but at the same time, I mean. You're doing a great job. There is a fantastic opportunity and there's tons of benefits, so I'm optimistic it will be successful for many, many, many years.

[00:41:54] Theron Smith:

Yeah, and you know, and I, and I don't want it to seem all doom and gloom. I definitely, our company is definitely um, we're very aware of the position we're in, and so we view ourselves as, we view what we're doing as somewhat of a band-aid because, a band-aid's necessary. If you think about what a band-aid does it, it might not fix the problem, but it is necessary. And so right now export is a band aid, is it viable for the next 20 years in its current form? But there could be options that do that, that would be viable. For instance, if it is so cheap to. Ship to Malaysia and then to ship back here. Uh, could we ship our scrap there, process it, and then bring it back as repro and manufacture with it here in the United States? That's, mm-hmm. That's test. We've actually ran, we've actually shipped material to Malaysia or to other countries, Indonesia, and brought the material back into the United States and sent it to manufacturers and to be able to figure out can, is there a viable option for that? You know, we've worked with, we're working with mining operations because we have a strong, strong background in mining. We're working with their operations to test the mulch film and the ag film to figure out what it would take for them to be able to utilize it in re in as an alternative fuel, kind of like a cogent type of situation. You put it in, its oil based, and they burn it and it provides fuel. And it's clean burning here in California and many other parts of the United States. We know that there's ones that have, that are doing a great job on researching, utilizing ag film and asphalt as another. Another area besides tires. So, I think that there is some great work being done, um, and I think that what we're doing is providing a nice fix for now, and it gives us a good a good path forward. And then when another alternative does step up, including advanced recycling, we have conversations on a weekly basis of advanced recycling. So, when another opportunity does come up, uh,

we're positioned to say, Hey, we can divert this much material from where it's going now. Straight to you, and it's already in this form, and we'll send it to you in that form. So, it's not all doom and gloom, it's just we're not sure what the solution's gonna be moving forward, but that's where, um, people coming in and working with us, collaborating mm-hmm. Podcasts like this, making people aware of the situation and then hopefully coming up with solutions moving forward will really help in our industry.

[00:44:37] Nataliya Shcherbatyuk:

Yeah, that's great. What's next for Flipping Iron and are there any exciting new directions, partnerships, anything you know on the horizontal.

[00:44:49] Theron Smith:

Yeah. So, I mean, we really have, we're always looking forward to figuring out what we, what we need to do to provide these solutions. And I talked about a couple of them, we are excited about the idea of bringing repro back into the United States and being able to utilize it and manufacturing, other thing is, is we have actually diversified, and we have operations now running in Illinois. Tennessee, Oklahoma, possibly Arizona here. Pretty soon we were in Nevada. So having a footprint that is going to allow us to be able to find solutions in other places is great. We worked in different industries, besides metal. I mean, they're all either related, they're all either metal or plastics adjacent., we work with one of the, uh, organizations, the plastic pipe industry the PPI, they actually have spoken at the APRC the last two years, the Ag Plastics Recycling Convention. And how that they've found success in recycling and overcoming government regulations or working along with government regulations, so there, there, we, we have mobile operations that are going throughout the United States now. I think that one of the things that I would really like to see our company work towards is some sort of maybe coalition of figuring out these solutions. There's a lot of players out there. So, you've talked about some of 'em yourself. You've worked with a lot of 'em yourself. You yourself are one of 'em. And Washington State University, they had a grant that, uh, did a lot of work in mulch film and I think that some sort of coalition to build able to help move this needle move the progress forward is, is, is definitely needed. Um, we're successful because of our collaboration and I think that we definitely need more of that. And, I mean, frankly speaking I think that it, we definitely need to see some more financial backing, not just in my company or not even nest. Started my company, but to this, to this progress in itself wherever it comes from, but you know, for as far as flipping iron goes, we just wanna stay focused on the equipment we need to get the job done. Diversifying our equipment and really, uh, providing solutions, uh, to problems, real problems that exist, we don't go out there looking for fake problems, we don't go buy equipment and search of problems. We go by, once the problem. It presents itself. We buy equipment to be able to solve it, and we've seen that, that being very successful and that's what we plan on continuing to do.

[00:47:44] Nataliya Shcherbatyuk:

Yeah, you're definitely doing a great job. That's fantastic. I remember first time I heard about your company when I just started with this launch project. I was so excited to talk to you a little bit about, you know, what you do, so that's really good. And you know, once you shared the story, when your son, I believe asked you, what do you do for work? And then his question being followed up by, so are you inhaling microplastics? So, what do you, you know, what did you think about in that moment? He asked you that. Is there anything you know that you got? I don't know any specific thoughts about it. 'cause I believe that's your daily work that you do.

[00:48:32] Theron Smith:

Yeah. You know, I mean it was a sobering question. It was funny, you know, I mean, I thought it was pretty funny. He said, if, if a lot of people, if we all have microplastics in you, how, or, and us, how, how much do you have dad? And I think that, I think there's a relative amount of truth to that. Unfortunately. We as a culture is, and maybe not unfortunately, but the reality is at least we as a culture is not going away from plastics. More and more of our clothes are made from plastics, you know, so we're constantly in contact with plastics. And I think that we don't even realize where we're coming into in contact with plastics. I heard research recently done that one of the biggest, ways in which we consume microplastics is through tea bags. And, you know, they made of polypropylene.

[00:49:26] Nataliya Shcherbatyuk:

Yeah, I've seen that too. I heard about it too. And I looked at my tea shelves, I was like, oh my goodness. I love tea.

[00:49:35] Theron Smith:

And who doesn't love, you know, there's lots of different teas. So, I think that we all are inundated with plastic. I think that. It's hard at this point for us, for me to get focused on, you know, what, how much plastic am I actually inhaling or taking in that's being negatively affected because the only way to provide the, uh, solution is to be. Involved in it, and so I think that that's what her name? Madam? Madam Keurig. Uh, not Keurig. What was her name? The one that did, uh, I'm drawing a blank here. That did, that kind of, did the research on what's the radiation. You know, she died from it, but she was doing the research from it. Now, I don't think I'm gonna die from it. I'm not trying to be that doom and gloom, but I think that the reality is, is that we have to figure out solutions for it. Because my thought of or if I had a thought of, oh, we shouldn't use plastics. That's just not viable. And so, the better question is how do we handle it to be able to be responsible with it that means that in my research, I am consuming more plastics now. It's okay. You know. We'll figure it, we'll figure it out. I already lost all my hair, so maybe that was from Ag Plastics, but, uh, I think in the long run, the goal is that maybe he won't, maybe my daughter won't, maybe the next generation won't have to under consume much as much plastics because we'll have a better understanding of what to do with it at the end of its life, you know, like I said. We all think of tea bags as something very healthy and then all of a sudden find out that that's one of the biggest consumers of a, of, uh, of microplastics into our body. And so, but does that mean we're gonna stop drinking tea? Absolutely not. We're just gonna figure out, we're gonna figure out alternatives to be able to be healthier at consuming tea.

[00:51:44] Nataliya Shcherbatyuk:

Exactly. And you know, one thing that I like to say that. A lot of people see the problem in the plastic, but I personally don't think that plastic is the issue. I mean, like you say, we go in plastic is not going anywhere. It's gonna here, it's here to stay, if not even increased because it's convenient, it's easy, and there's a lot of use for that. The question is our awareness about the plastic and also what we actually do with the plastic after it's being used, and that's something that we need to educate ourselves, educate our audience, and you know, plastic has tons of benefits and if we can figure it out. How to beneficially use it after it's been already, you know, after it's a waste. So basically, manage the waste of it. That probably will be one of the best focuses that we can do on the plastic itself.

[00:52:39] Theron Smith:

Yeah, I think that's so true, and I think that also focusing on what the real problems are with plastic. I think that we went through a, a funny situation here in the United States about straws, and they came up with straws that were more toxic for us than plastic was at one point. Now it's gotten better since then. And yeah, we have very good straws that are that kind of get us away from plastic, but. Understanding like what's the real problem and what is the, and how can we really come up with solutions? And I think that's where we're at right now. We have some, some decent solutions that have been great for many, many years, but what's the best solution? Or what's the combination of best solutions? 'cause I also don't think it's one solution's gonna fix it all. I don't think it's gonna be right. Hey, you know, all of a sudden advanced recycling is the savior that we all were hoping it'd be, and that's the solution I'll fix. So, I think it's gonna be one, one piece of the puzzle. I think mechanical recycling is a huge part of it, and I don't wanna push us away from mechanical recycling, but we, we have to do it in a way that's going to be financially viable for everybody. And, you know, how does that look and at times, unfortunately the best thing to do with plastic is to throw it away. And, but if we can reduce how much of the plastic we actually have to throw away, then that's also good for the environment because at times the only option and the best option is to just throw it away. And I know that's probably not something a recycler should say and probably that, but, but that's just because there was a solution for one thing doesn't mean it's a solution for all plastic moving forward.

[00:54:23] Nataliya Shcherbatyuk:

Yeah, I agree. Well, Theron, thank you so much. I think that was great educational piece of the podcast and I think you're doing fantastic job. Thank you so much for your time and I hope to have you back on our podcast with more exciting new information soon.

[00:54:41] Theron Smith:

Yeah, no, we appreciate it. I'm so happy to be able to do this and I think you, you're bringing a lot of awareness to the industry and I hopefully that we can get some more and more solutions. And I just wanted to say thanks to. All those that support us. And also, thanks to my Flipping Iron team, I've got some great, great employees, some great people that are doing a great job. We've talked about a few of 'em. My wife, Kristi, Adolfo, Fernando, he's been with me the longest out of all my employees, this would not be a success without them, always want to throw a shout out to all the farmers out there that are working so hard to be able to have a, to support the solutions that we've come up with Driscoll's and all of their growers and all the other the berry growers out there that work with us. And also, Jazmine at the Monterey Bay National Marine Sanctuary, Andros Engineering. All those guys have been great, collaborators and I just look forward to keeping moving forward with all of them and Washington State University. Everybody else moving forward with all you guys.

[00:55:53] Nataliya Shcherbatyuk:

Thank you so much.

[00:55:55] Theron Smith:

Thank you.

[00:55:56] Nataliya Shcherbatyuk:

That's it for today and until the next episode. You can find more information by following us on Instagram and LinkedIn by @mulch_matters and going to our websites www.smallfruits.wsu.edu and choose mulch technologies. This work is supported by Specialty Crops Research Initiative Award 2022-51181-38325 from the USDA National Institute of Food and Agriculture. Any opinions, findings, conclusions, or recommendations expressed on this podcast are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

Note: [Intro and outro music](https://pixabay.com/music/introoutro-motivational-ident-main-9923/) credit to Zakhar Valaha from Pixabay (<https://pixabay.com/music/introoutro-motivational-ident-main-9923/>)