Denise

Welcome to the Art of Engineering, where we speak with some of the top women in engineering about their processes, principles, and personal stories. I'm Denise McIntosh, CEO of Custom Powder Systems, The Containment Company. Today I'm honored to have as a guest, Brittany Lutz, who is the research and development scientist at Ortho Molecular Products in Stevens Point, Wisconsin. Welcome, Brittany.

Brittany

Hi, Denise.

Denise

Wonderful to have you. You are actually the second podcast we've done with your company, but I really wanted to go back and explore more of who Ortho is and what Ortho offers to the marketplace. And then first of all, talk about Brittany. How did you get there and what led you to become a research and development scientist?

Brittany

Well, I went to school in Madison. I grew up in the Madison area, but I met a wonderful person, my husband from Stevens Point, and we got married, but we lived in Oshkosh for a really long time. And I've always been really into dietary supplements as far as I've always thought that they, I've always taken them. I've always had a lot of good experiences with them and just, I really think the model is a good model and I've always been drawn to that. And I didn't even know the company was here, and I saw that this position had opened up and I was so curious and I went and had an interview and fell in love with it, and I've been here ever since and just kind of, yeah, it's been a fascinating journey.

Denise

Good. So what led you to be a scientist in the first place, or to study that?

Brittany

Well, when I was a kid, I loved solving problems and I loved doing all kinds of experiments on things. I think I wanted to be a chef at one point. I wanted to be an inventor, I wanted to be a scientist, I wanted to be a doctor. And I don't know what else. I had so many different career ideas, and my job at Ortho allows me to kind of do all of them at the same time.

Denise

Well, how fun

Brittany

It's great. I love it. Yeah.

Denise

So tell us a little about Ortho, because I noticed that Ortho's have been in business for over 30 years.

Brittany

35. Yeah, this is, yeah.

Denise

Wow. How did Ortho get started? Has it always been the dietary supplements?

Brittany

Yeah, it always has been. We got started, our founder is Gary Powers, and he started this business kind of ground level. I mean, he was making stuff very small scales and selling it to very locally, and we just kind of kept growing, kept putting out really good product. We've always prided ourselves on sourcing the finest raw materials so that we can put out the finest products. And we've always done nutraceuticals. It's just grown. We used to only have maybe a handful of products, and now we're up to over 180, I think, different ones. So we've really grown and we just keep growing our area. We sell nationwide now. We sell over fullscript, so we sell to anybody that is a practitioner. We sell to them, and we have a huge, huge sales network now. So it's been an interesting, it's grown really, really fast since I've been here. I've only been here five years, and it's grown immensely in the five years I've been here.

Denise

So one of the things that I noticed on the website is the term efficacy. So what does that mean as to me as a consumer of supplements?

Brittany

Well, what that means is that when we put product out there, we do the most diligent job of making sure that what we're putting out is exactly what is on the label, and that that product has clinical trials associated with it, that have proven it to be efficacious in some way as far as helping some sort of condition or improving just overall health markers. A lot of it is, there's a lot of things that in our product line that maybe they have a lot more anecdotal evidence. We don't make specific claims, obviously, but efficacious means that our products, we test all of our raw materials very thoroughly before we use them, even in making anything. And then we also test those capsules coming off the line after they're done to make sure that, yep, it's all, everything's in there and it's at the amounts we say it is, and it's a high quality from beginning to end of every batch. And so that, we're proud to put that out there for the consumer.

Denise

From what I understand about the supplements industry, that doesn't happen in every facility.

Brittany

That is correct.

Denise

So that's why I wanted you to talk about that, because knowing that what you're buying from Ortho Molecular, you get what it says you're going to get. That's important.

Brittany (05:58):

It's very important. And there's a lot of companies out there, like you said, that they skip that step or they just rely on, A lot of times what happens is we'll get a C of a from a vendor and they say it's got this much of something in it, but if we never test it and we just trust them, that's probably not the best route to go. And that's what a lot of companies do because it saves time and cost, obviously, but we don't cut corners that way. And that's how you can be assured that when you buy our products, that you're getting the highest quality that you can.

Denise

When I first thought about inviting you, it looked to me like you were lead scientist, and now you have become research and development scientist. So what is your new role?

Brittany

So I've always been, traditionally, our department has been called the formulation science department, and we've kind of been sort of the go-to people to help with everything in manufacturing from the formulation side of it, the research and development aspects of it, but not really that much of it. And now we have a new supervisor, a new kind of department structure. At some point, I'd like you to meet Russell. He's our research and development director, and he is in the process of restructuring our whole approach to things. And we're taking a more research and development based approach, which just helps us to optimize our processes a lot better and optimize our products to make sure that we have preventative so we can make our formulas a lot more, I guess, what would you call it, robust.

Denise

That makes sense. The reason we're talking today is because orthomolecular and custom powder systems have worked together for many years.

Brittany

We have!

Denise

Yes. We help make these products. So if you don't mind, tell me what pieces of equipment and how those pieces of equipment have helped you process these products.

Brittany

We really, really would be lost if we didn't have our IBC bin blenders. They allow us to be flexible. We make so many different products that it allows us to swap out totes very easily, which gives us a lot of flexibility as far as time structure and everything in our, we have a limited

footprint, and this allows us to be the most efficient that we can be. We buy your IBC bin blenders in various different sizes that allow us to make batches of different sizes, and we even have a little tiny one that is 18 liters that is exactly the same dimensions as ratio. It's scaled down, but the dimensions match up to the large ones, which allows us to get a very good idea of how a powder will behave on a very small scale so that when we scale it up, we really don't see too much difference from the pilot batches up to the larger batches, which is pretty incredible.

And that saves us a lot of time. And it also gives us, it just helps our R and D process just be a lot more true to the scale up. We also have a liquid mixer tank that we purchased from you guys, and that was really nice because that was custom built for us as far as our batch sizes go and the needs that we had around it. And it's always a pleasure to work with your company because everything is custom made. So we are able to review documents and look at the plans and say, oh, yeah, we really want this to be on here. And that really is a wonderful feature that I don't think a lot of companies have been able to provide for us. So that's part of why we love working with you guys, because you're so flexible and you're also very attentive during the whole design process, which is very, very hard to come by actually in this industry.

Denise

Well, thank you for that. And that leads me to one of the issues that we've dealt with in our own shop here in building that equipment, Brittany, is finding skilled workers.

How has that equipment, I mean, I'm assuming, I'm just making an assumption because I think I saw that the county where your plan is located, the unemployment rate is like 2.9%. So are you having difficulty finding workers?

Brittany

Well, in our department, it is quite difficult just because there's not a huge pool of talent in the Stevens Point area. It's just being a smaller city and everything. I dunno how familiar you are with the geography of how we're set up here, but Madison is the bigger city that tends to draw more people. It's got a lot more companies down there. I guess that would, if more people are in the job market would be down in that area. And we have to compete with a lot of other manufacturing facilities up here. So the fact that we produce our product in a safe, clean environment, climate controlled, the blenders are again, really safe to work around. They're really easy to operate. That's kind of a plus for us as far as getting manufacturing employees in. And we don't tend to have as much problem getting manufacturing employees here. It's the more skilled positions that we're having,

Takes a little bit of time to find the right people, but once we find the right people, it seems that we've overcome a few hurdles, but I think every company has just the way the job market's kind of changing and everything.

Denise

So would you say that the whole bin and the batch blending has alleviated maybe some of the employment issues that you might've had prior?

Brittany

It's hard to know because we have never not had 'em. So it's hard to know if we've made 'em better. But I think I've worked in other, when I was working my way through school, I've worked in factory type jobs before and not all machinery is the same. And there's definitely some benefits to working in a place where there's not danger, or at least the facility where we have everything is just so clean and it's safe. And I think that is a huge part of what we can offer to employees.

Denise

And a lot of it is automated,

Brittany

Which makes it very easy. All the settings are kind of plug and play. We don't have to rely on a lot of skill on that end. It's very straightforward. We don't really have that many problems with that end of it. Yeah.

Denise

Well, and I had forgotten that we supplied that very small one so that you could do the scale up. That really does help.

Brittany

It really does. Yeah. It's really, everybody loves looking at it too. They're like, oh, it's like a mini one.

Denise

So fits in with that research and development you do there.

Brittany

Absolutely. Absolutely. It's very important that we characterize the powders on the small scale first before we try to make something that we're going to sell. We want to make sure it's really the best product we can put out.

Denise

Very good. So what's a typical day in the life of Brittany Lutz as a research and development scientist?

Brittany

Oh, I wouldn't say I have a typical day, but my days are always an adventure. It's always fun. So usually I have to meet with usually several different departments because of our involvement in

so many different areas of what the company does. We usually have to meet with the lab on things, or we talk to our supply chain people. We have another person on our team who helps us look for samples of new raw materials that we want to test and look at and try out always on the lookout for something better. If there's new stuff out there, why we should be looking at it and evaluating it. And we work with our boss who works more with the marketing team on what kind of new products they want and what's out there that we want to look at and say, oh, I think we could do something better.

I look at costs of materials and figuring out what's the most cost efficient way we can do this. So that's a big part of it. We want to use our high quality raw materials, but we don't want the products to be out of reach for the average consumer either. So that's something that has to be taken into consideration. The most fun days I have are when I get to do taste testing, we do in addition to capsules and tablets, we do supplemental shakes that are ready to mix powders. So we have to make sure that they taste good, even if they have a lot of healthy things in them, we still want them to taste good.

Denise

What are some of the secrets of that?

Brittany

Oh, it's a lot of fun. It's a lot of having to play around with different flavors. We like to stay natural, so things without sugar. We're always looking into new alternative natural sweeteners that are no calorie, that don't taste nasty. So we have a lot of tasting and a lot of it you have to taste the raw material that you're trying to cover up. So if we put broccoli powder in something, we don't want it to taste like broccoli powder. So you have to taste it and say, okay, what can I put with it to cover the broccoli powder? And some things work better with a citrus flavor. Some things will work better with chocolate, some would work better with a coffee flavor. So it's all about characterizing what kind of bitter taste you're trying to cover up, or sour taste or whatever you're trying to cover, and then using that to your advantage. So it's more of an art than really any kind of science, but you have to, I mean, there's both involved, obviously, but you also have to, at the end of the day, make something that people want to take. So you run taste testing panels where you have people blind tasting the products against each other and telling you which ones they prefer, and then you use that feedback to get the formula perfected. And that's always a lot of fun. I always enjoy that.

Denise

How fun. So you do get to be a chef?

Brittany

I do once in a while. Yeah. It's fun. I like those days.

Denise

Oh, very good. Well, I knew about the supplements, but I don't think I knew about it. So they would be powdered?

Brittany

Yep, they're powdered. They come in like a canister, and you mix them, we say to mix them with water, and that's just the generic, but you can be more creative with them if you want, and mix them with milk or put 'em in your oatmeal or whatever, however you want to take 'em.

Denise

Okay. Well, I noticed that there were, well, you mentioned how many SKUs over a hundred.

Brittany

Yeah, close to 180, I think. Yeah, we have quite a few.

Denise

So in five years. So where in those five years, how many new products have been developed?

Brittany

Oh, wow. I would say probably 25 or 30, if not more.

Denise

So that R and D, what a fun thing to do.

Brittany

It is a lot of fun most of the time. Sometimes it's frustrating, but it's always, I love problem solving, so sometimes that actually is fine, like a new puzzle to do. And my team, I work with a great team. Carter is my cohort, and we have every day you'll get something from somebody with a question about how something is running or is this a new different, can we try this new raw material? Or our vendor said, we can't get this, how can we work around it? Or we spend the days. Sometimes we just spend the days making test batches and just seeing how stuff's going to work. But it's a very, I want to say it's a very hands-on job, which I like. But I think it also, there's a lot of room for creativity too, which is also something that at least I really like about the position

Denise

That's appealing. So speaking of the supply chain has sort of been wonky for the last few years. Is that something you've had to deal a lot with?

Brittany

Oh, definitely. Most definitely. Yeah. We work with some of our vendors, our trademarked items, so if we don't use that material, we can't make the product essentially. And they really tried some of 'em, we try to keep good relationships with them, but sometimes we had to wait and a

lot of products went on back order and we lost some sales to it. And that's just, I think everybody did though, when you looked across the board, nobody was able to get some of this stuff. We had a big hiccup with our, mostly it was component parts, so lids and bottles, which is, you would think that's really strange, but apparently that was a thing in the whole, across the whole food industry too. They'd have different colored caps or the liner was just a little bit different. It didn't have a tab on it or something, and you had to evaluate all that stuff too. But it was interesting. The length of time that it was a problem was super fascinating to me because I was like, everybody thought covid would be just this blurb and a little hiccup, and it turned out to be a big hiccup.

Denise

Yes, yes. And same here. I mean, different components for us, Brittany, but we dealt with having issues, getting PLCs and the things that make our equipment work.

Brittany

Absolutely. My dad works in construction, and they had the same issue. They couldn't get two by fours, they couldn't get steel, they couldn't get all these building materials. And so a lot of projects went on hold.

Denise

Yes. Very difficult. I'm hoping we're near the end of that.

Brittany

Me too. Yeah.

Denise

So a little bit about what Brittany does outside of work. What brings you joy?

Brittany

I have a lot of, well, okay, I have a 90 acre farm, first of all, and I like to garden. I do that when it's warm enough to garden, but I'm getting to the point now where I'm going to start my seeds. So I've got the itch already, but I do a garden every year. I have probably three quarters of an acre garden, so I plant all kinds of stuff in there. So I love gardening. I forage, which is also kind of helpful to my job, actually, because I learn all kinds of weird things about wild plants. And there's lots of interesting things that people don't really realize grow around here, that have huge medicinal benefits that you can harness on your own just by going in your backyard. It's kind of neat.

Denise

Well in the 90 acres, you have a lot of space to explore for food.

Brittany

I do. I do. It's great. I love it. Part of it is wooded, so we get mushrooms. There's lots of, I have a wild blackberries that grow kind of out in the very edges of it. And asparagus. We have tons of asparagus, there's tons of it, nettles, all that kind of fun stuff. So I'm a big fan of going out and finding free food whenever I can.

Denise

Very good. Well, and a three quarter acre garden, my goodness. That would keep you busy.

Brittany

Oh, yeah. Every night I go out there in the summer and weed and kind of check on stuff. And zucchini, you have to kind of check them every day, or they grow a foot overnight.

Denise

Yes. They can get as long and big around as your arm.

Brittany
Sure thing. Yep.

Denise

Yes. So tell me, because you have now been in this industry for over five years, can we, and what can we do to invite and attract more young women into the sciences and into manufacturing? I mean, it's one thing to find people, find women in the scientific field, but to also have them in manufacturing is, that's a good thing. So how do we find more of you, Brittany?

Brittany

Yeah, I think it's definitely something that we need to, as a society, even in general, put a message out there to the girls that are growing up that math isn't scary, science isn't scary, manufacturing machines aren't scary. All that stuff is stuff that you can definitely learn how to do just as well as the boys can. And I guess I grew up having a dad who really didn't act like I was a girl for the most part. I think he just wanted someone to help him work on cars, and he didn't care if it was a boy, a girl. So I was the one helping on cars and learning how to fix things from a young age, I guess. And just that early exposure I think is good. So I think getting that kind of exposure to girls when they're young and showing them just how much fun it is that really primes them for becoming interested in it as they get older.

I have two teenage nieces right now, and they're both taking different paths as they kind of explore what they want to do in life. And one is very artistic, and she's not very science-minded, and she voices that often, but she's always, she's like, well, I just like to do, and she doesn't think it's bad, really, but she's also not that interested. My other niece is super interested, watches, documentaries on Netflix about the beauty industry and counterfeit makeup and how horrible it is, and tells me all the stuff about it and is just fascinated with anything science. She just loves that kind of stuff. And I just try to encourage her any place I can, we go. And you can

do experiments that aren't really official experiments at your own house, and I don't think people really realize that, but it's not all in the lab. You can do things at your house that every time I make a batch of fermented pickles, it's a science experiment.

Denise

I made meringue cookies over the weekend because I had made lemon curd, and then I had egg yolk or egg whites. And I've determined that making meringue cookies is a bit of a science experiment.

Brittany

Oh, absolutely. That's absolutely a science experiment.

Denise

I like to encourage all people about manufacturing because it's not just about the science, because we need marketing people and we need salespeople, and we need accountants, and we need all these different people that help make up the company that produces the products.

Brittany

Absolutely. Absolutely. And I think just getting, for companies, getting your name out there and just showing the area that you're in, what you do and what kinds of, and I think a lot of it is just exposure. I mean, I don't think I even knew about even a 10th of the kinds of jobs out there until I got out of college, because they don't tell you about that in high school, or at least they didn't when I was in high school. They give you generic, oh, you could go into science. Okay, but well, what does that mean?

Denise

What does that mean?

Brittany

Right, exactly. And you don't know what kind of job you would get out of school until you explore and you're like, well, there's all these different types of science. What do I want to do? So I think it's, think it would've been really helpful when I was in high school even to have people from different companies just come and just talk about what they did and their role in the company. And you would find out that, well, I don't want to work for a paper company. That sounds boring, but maybe a paper company would have a really cool, you could be an r and d scientist at a paper company. Absolutely. There's always a niche no matter what company you're looking at. Yeah.

Denise

Well, Brittany, thank you so much for joining me today.

Brittany (30:48):

Yeah, my pleasure. I was very, very excited to get a chance to chat with you and be on your podcast. It's really an honor.