

Bryan Schaaf: Welcome to Meet Speak powered by the Certified Angus Beef brand. My name is Bryan Schaaf, and with me as always is chef Tony Biggs. If this is your first time tuning in, we appreciate you for taking time out of your schedule to join us. Today we're going to talk about dry aging. To some people it's earthy. To some people it's nutty. To some people it's flowery and artisanal. To a lot of people though certainly when browsing a menu, it's expensive. But today we are going to spend the next 30 ish or minutes talking about dry aging.

Bryan Schaaf: Something that I know as a chef is something that's near and dear to your heart, something that certainly is off putting to others. It's an interesting art. It's also something that we nearly have scienced ourselves out of in recent years. But the pendulum appears to be swinging back. Chef, talk to me about dry aging as it pertains to you. It's not anything new, right?

Tony Biggs: It's not, it's not. There's two types of aging. There's wet age and dry age. But everybody is on this dry age kick now. They want to learn about it, they want to know about it. They want to out do their peers with dry aging. When you go into a great restaurant in New York city or anywhere in the world, what do you see first? They have these beautiful cases and all these beautiful short loins of strip and rib eyes are turning and turning. That's a sounds a song baby. What they are doing is dry aging. Folks are coming in and going, "Wow, what is that? What is that funk that's growing on those short loins?"

Bryan Schaaf: We should note that funk specifically. Funky is a word that gets thrown around a lot with dry aging. Sometimes I've been in certain places where that funk is green, but it's important to know that mold growth, that crust that sometimes grows on the outside one, it's good. It's there to impart flavor. It's also there to keep out bad stuff. It's kind of a-

Tony Biggs: It is.

Bryan Schaaf: Yeah, it kind of serves two purposes. Here in front of us-

Tony Biggs: Isn't that lovely?

Bryan Schaaf: I know this, oh my gosh.

Tony Biggs: Oh my gosh. That looks lovely.

Bryan Schaaf: You guys can't see this because I understand this is an audio medium, but we actually have here sitting in front of us a, what did we say, a 94 day dry aged strip loin, certified. Angus beef prime. She's beautiful. If you could be here and smell what this studio is smelling like, to me, it's incredible.

Tony Biggs: It's beautiful. But Brian, why do we dry age?

Bryan Schaaf: Yeah.

Tony Biggs: Two reasons.

Bryan Schaaf: Yeah.

Tony Biggs: Taste and tenderness. Taste and tenderness. You want a different flavor because of the dry age process. What happens when you break down these enzymes? You have a better tenderness.

Bryan Schaaf: Yeah. Yeah.

Tony Biggs: Okay.

Bryan Schaaf: Right. Suffice it to say in the simplest terms. I always laugh a little bit when I hear commercials talking about fresh beef when in reality, the reality of it all is actually beef that's a little older, whether it's wet aged or dry aged is going to be more tender. Actually fresh beef is the last thing we would like in any of this. Right?

Tony Biggs: Right. But I am a blue cheese lover, and when I taste a perfectly dry aged steak and I put that first bite in my mouth, I close my eyes and I'm thinking of Roquefort. When I taste that, I just have to close my eyes and just relish the fact that somebody took the time to ... this was 90 days. Do you know one of our partners did a 350 day dry aged short loin?

Bryan Schaaf: Tell me about that. Tell me about that. Because is there a line where funk is too funky?

Tony Biggs: I felt it was too much. Now, at the culinary center it's certified Angus beef. Our to-go is 60. If we push 90, that's pushing it. But I liked the 60 day, and for many reasons. First, the shrinkage. It's less shrinkage. Those folks are looking for cost and all that, you're going to have some shrinkage when you're dry aging.

Bryan Schaaf: That crust that forms, you can't really use that for anything, right?

Tony Biggs: You cannot. So there's going to be a lot of cleaning of the short loin. A lot of discard of waste. You're going to be taking a lot of that funk off, as Brian mentioned, a lot of that green. And then you're going to have to cut perfectly nice steaks out of this. Now, I have found that when you're cooking a dry aged steak and you go to temp it, you can be very fooled by the temperature because once you touch that steak, it's been grilling, you think it's ready because of the moisture that's been taken out. You touch that steak with your finger and you go, oh, that's ready. But when you temp it and you see it's 80 degrees, we go to 125 or 115 and carry over cooking. You can be fooled by cooking a dry aged steak. For you folks out there, it's very important that you temp these with a thermometer.

Tony Biggs: We went to Kuwait, we had a very visit to Kuwait. We went to the Sultanchef Steak House. He's got \$100,000 inventory of dry age as you walk into the door in the coolers. Sheikh Mohammed pulled me aside and he said to me, "Tony, nobody knows about dry aging in Kuwait. They almost shut me down." I said, "Why, Sheikh?" "Because the health department does not understand dry aging. When they come into my cooler, when they come in to see my operation, the first thing they say is, 'You're serving bad meat. You're serving green meat. You are shutdown. You cannot serve this.' But hey, I've got \$100,000 inventory."

Tony Biggs: I think the Sheikh, he went to the top with his request, explained the whole dry aging process, and eventually he was allowed to open up again. Working with your local health department is critical because they don't have an understanding of dry aging.

Bryan Schaaf: Yeah, yeah. I think there's a lot of it. We see it of course because Cleveland is so close to here. We have a lot of friends playing with different molds and different forms of sort of old world techniques that are thousands of years old that have now come back to the fore. There is almost an element of you're teaching the inspectors. To have validation behind a lot of these processes, it's really kind of exciting to be in the fore because we're seeing these innovations with dry aging and with molds and with meat science-

Tony Biggs: Koji.

Bryan Schaaf: ... happening in real time.

Tony Biggs: Koji.

Bryan Schaaf: It's happening right now every day. With our friend, yeah, Jeremy Umansky with Koji up in Cleveland.

Tony Biggs: Our friend Jeremy.

Bryan Schaaf: Even our big meat companies that are really known for their dry aging program like Debragga and Spitler in New York, or Purely Meets in Chicago is as funky as anywhere that I've ever seen. There's a lot of incredible dry aged product that's coming on the market out there that's just good for everybody because-

Tony Biggs: You've seen the dry aged burgers, right?

Bryan Schaaf: Yeah.

Tony Biggs: Wow. Incredible.

Bryan Schaaf: Well, it's amazing.

Tony Biggs: Right?

Bryan Schaaf: Yeah.

Tony Biggs: The flavor, amazing.

Bryan Schaaf: Yeah. I actually just had one two days ago in Prime Cincinnati, at chef Shawn Hines fine downtown Cincinnati steakhouse. He actually brings in entire chuck clods and ages them to get them funky specifically to go into the grinder to make the strides. And it's-

Tony Biggs: It's beautiful.

Bryan Schaaf: It's incredible. It's just incredible.

Tony Biggs: Now remember I was saying about sub-primals, that is the key to dry aging, not individual steaks. What you will see in restaurants is sub-primals.

Bryan Schaaf: That's right. If you try and cut a strip steak and throw it in a dry aging cooler for 50 or 60 days, there's not going to be much left.

Tony Biggs: Correct. Correct.

Bryan Schaaf: Excellent. We're going to take a break and dive even deeper into meat science with our resident meat scientist. I've always wanted to have the title, meat scientists. But sadly I am-

Tony Biggs: I like that term.

Bryan Schaaf: I'm a meat lackey. But our own Diana Clark is going to be joining us on the pod to talk about molds. Exciting stuff. Stay tuned.

Bryan Schaaf: Joining me here in the studio is our resident meat scientists, which is a title, a term you don't hear very often. But somebody who a lot of our good friends know, somebody who a lot of our good friends continue to come back to learn from. We're talking to, of course, Diana Clark. Diana, welcome to the pod.

Diana Clark: Thank you. It's great to be here.

Bryan Schaaf: It's a pleasure to have you. Today we're talking about dry aging and specifically the science behind dry aging. It seems to be that in a day and age where we like to have everything explained and have good answers for everything and why it happens and why certain things happen, dry aging seems to be still a bit of a mystery.

Diana Clark: Yeah, definitely. I feel like there's a lot of art involved in dry aging, and so we haven't really taken the time in the scientific community to dive in to everything and figure out what's going on. I do think there's more of it being done now because the popularity of dry aging is increasing drastically, but it still is kind of

like an unknown area, which is kind of funny because it's been around for so long. We just have-

Bryan Schaaf: Yeah, for thousands of years, right?

Diana Clark: Yeah, yeah. This is how we've preserved meat.

Bryan Schaaf: Yeah. Can you talk a little more about about that? Because there's so much that happens in dry aging. As I like to understand it, I like to think of three things happening during the dry aging process. The enzymatic breakdown within the meat, which naturally happens, dry aging, wet aging, whatever.

Diana Clark: Yeah.

Bryan Schaaf: The dehydration of the moisture within the meat. But then also that mold growth. It feels like a lot of that we do understand. We've got a pretty good grasp of at least two out of those three, right?

Diana Clark: Yeah, I definitely think that. The enzymatic reactions that are going on, those [inaudible 00:11:11] are really diving into that meat. Diving in. It's already in the meat itself, but the [inaudible 00:11:17] are going through and actually breaking down the meat and making it more tender. Like you said, wet aging, dry aging, same thing's happening. If you wet aged for that extended period of time, that tenderness is still going to be the same as you dry age. There's really not going to be a difference, and we have scientific studies that prove that. That tenderness achieved either way is great.

Diana Clark: Then you look at the moisture being removed, that's just happening from evaporation. That's why we always stress to have a fan on your dry aged product to really pull out more of that moisture. That's going to condense that overall beef flavor that's already naturally found. But like a wine reduction sauce, as always we like to relate it to, you're just concentrating those flavors. So every bite that you take has that beefiness that you expect. That's why we really only dry aged certified Angus beef prime because we want to start with the best to achieve the best results in the end. My professor, Dr. McKeith used to always say you can't make good ice cream out of pig poop. You got to start with the best from the top in order to get the best dry aged beef.

Diana Clark: And then on top of that's the mold. That's the area where I feel like we haven't hardly scratched the surface, no pun intended, because the mold is kind of on that surface. But we recently, we're kind of working with Ohio State to see what was known I guess in the mold community. We reached out to a professor there, and he was amazed that more research had not been done in the mold community because there's been so much done on other food products, cheese and beer specifically. Over these past few decades, beer has grown popularly, and trying to understand the different components that go into there. But still,

mold and the dry aged area is still kind of question mark. If you think about the dry aging from a salumi standpoint, we've used molds for centuries.

Diana Clark: They used to put molds on that because they knew that it helped protect that salumi, they were able to peel those molds away, and then in the end they get this great product. The mold's definitely going to adjust the flavors of the meat as well. But we haven't really created I guess a catchall like a mold that essentially, I can take this mold and put it on my meat and I know all these great, fantastic flavors are going to come from it. Right now we're just kind of in the area of, yeah, whatever's there is growing and that's good.

Bryan Schaaf: As long as it's not certain colors, right?

Diana Clark: Yeah, exactly.

Bryan Schaaf: Our good friend in Cleveland, Jeremy Umansky, right?

Diana Clark: Yes.

Bryan Schaaf: Mr. Mold himself. He's the first person that I can remember specifically talking about specific molds and the specific flavors that come from them. Of course with Jeremy, it's Koji, right?

Diana Clark: Yeah.

Bryan Schaaf: It's the Koji mold which gives off a floral just very bright tone, which is completely counter to what most people think of with molds.

Diana Clark: With beef.

Bryan Schaaf: Yeah. But you're involved in some of those studies relating, trying to narrow down whatever those specific strains are and the flavors that they impart. Yeah?

Diana Clark: Yeah. It seems like the more I dove into the whole Koji thing ... and we always joke that you'd go down rabbit holes of papers ... but you start to realize that Koji has been extremely popular in Eastern cultures because Koji is used a lot in fermentation process for Sake. And so, they know it from food production, they understand the safety behind it, they understand how to get those flavors pulled out of it. But a lot of times it's used in rice or grains that you get that mold growth occurring. We've never really thought about putting it on a protein.

Diana Clark: But then you start to think about cheese. Now, in cheeses that actually have specific molds that they will grow on those cheeses to impart these different flavors or to bring out unique flavors in that cheese. Well, why haven't we done that in beef? And so, really Jeremy's taken it to the next level in my opinion of let's take the things that we love about Koji. You have that sweetness, that floral

flavor. Why don't we introduce that to the beef world and see what happens? He's really been able to take that to the next level. Just really driving home the the production of that mold on beef. It does bring about that dry aging flavor that is phenomenal, that we look for. We've done other studies where we've actually just taken different strip loins from different areas of the United States and try to break down the microbial content or the molds essentially that are on the strip loins. And that way we can see, okay, what is this mold growth that's on there? You do notice unique populations across all of them.

Diana Clark: But some of them, there actually were a couple that were extremely common that were found in all locations, but it still wasn't the predominant one out of each location. Now that we know what these molds are, now we need to really slow down and say, okay, let's just inoculate this meat with that mold and see what flavors derive from it, and so that we can take it little by little. But we really need to get a trained sensory panel in to do something like that so they can pick up those little flavors that not many consumers would really notice. Because some consumers can't even notice a difference in dry aged flavor in general, and some honestly don't prefer it. which is fine, but we need to get people that are in there that are extremely subjective to that taste.

Bryan Schaaf: It reminds me of when ... through what I get to do on a daily basis, sometimes I get thrown into these food and wine festivals and it's a wine tasting and there's the panel of psalms, and oh-

Diana Clark: Oh gosh.

Bryan Schaaf: We pick up ... this is obviously from the Eastern side of the Sierra Nevada's, and I pick up some green pepper notes. And I'm like, dude, all I'm getting is fermented grape. It's good. But yeah.

Diana Clark: It's still just straight fermented grapes. And then you ask them for an ice cube for your red wine.

Bryan Schaaf: That's right.

Diana Clark: They just shake their head and walk away.

Bryan Schaaf: There are a lot of folks who are beginning to do this in-house. And of course we work with a lot of meat companies, and I think it's easier just to say leave it to the experts. But there are a lot of chefs out there who are ... and truly I guess beyond chefs. Even sort of the home weekend warriors who are really interested in doing their own dry aging program. For those folks, I know it's really easy to be like, yeah. Is there anything that you can give them to maybe avoid some of the pitfalls that can happen? Because the thing about playing with molds is not all molds are good.

Diana Clark: Yeah. Yeah.

Bryan Schaaf: What are some of the signs to look for if this thing happens to go off the rails?

Diana Clark: Your biggest indicator is your nose. That's been from the day old time of just using your nose. If it smells funny and you think, oh this is repulsive, don't eat it. Your brain was trained to know those differences. Just back away. But-

Bryan Schaaf: The nasal appraisal.

Diana Clark: Oh, exactly. If you have a cold, get someone else to sniff it. Okay. Just don't leave it up to yourself. But really, at home you need to devote your own refrigerator. You need to make sure that that refrigerator has racks that basically air can pass through. You need to have a fan in there. You need to watch the moisture. It takes a lot. It takes a lot of babysitting. You could talk to Jess Pryles. She actually did this, made it a little cooler and stuff at home. Set up, ready to go. My husband actually made a little one when he was still at Ohio State. They have a little pitfalls I guess that they've gone through, but it did take time. It's not a one and done. It's not you put this piece in and it's going to be great. It's probably going to take some adjustments.

Diana Clark: Some of you might lose moisture a little bit more faster, so that way maybe you'll have to have a little bit of water sitting in the bottom of your cooler. Some of you might have too much humidity and you might need to put a small salt block in there. Never ever though dry age just one steak. A Lot of people I feel like have tried that or gotten those little boxes to fit inside the refrigerator to dry age a steak. You're wasting your money because by the time you trim off all that exterior surface, you're going to be left with practically nothing. Try to get a whole sub-primal, like a whole strip loin or something like that that you could go to the grocery store and get one of those. That's a great idea, but that's really only if you want to and you have the time to devote to do it.

Diana Clark: Otherwise I would leave it up to the experts. But those experts can be chefs at a restaurant. They do have the time to do that. They do have the culinary knowledge to do that, so they have a little bit more of expertise of what to look for when it's going bad. They've seen food go bad before. They know what it smells like. They can get rid of it. And we can definitely work with any chef who is setting up a refrigerator in his restaurant or in her restaurant. What to do, what are the best practices, so to speak. We always talk about the humidity range. You want to target around roughly 75 to 85% plus or minus 5%. We're kind of really loose on that. We at the center don't control for humidity, we just let the outdoor temperature kind of reflect what our humidity is, but we're fortunate enough that we have a relative humidity that's around 80% so we really don't have to control for that too much.

Diana Clark: However, in the winter months when it drops down to more of like a 60%, we add more meat into that cooler because that's going to increase that moisture, and then we're going to have better results there. But you really just need to watch your meat. If it's drying out too quickly, then essentially you're going to create almost a hard casing around the outside, and you're not going to have

that great condensed beefiness that you want to have in dry aging. We always recommend having that fan in there. If you're looking to grow specific molds, sometimes you can't really rely on your cooler itself or what's around you. What I recommend and we've had a few people do this with great success, go to sausagemaker.com and order their Bactoferm mold-600. It's *Penicillium Nalgiovense* is the actual mold itself. Just inoculate your sub-primal with that. That is a great mold that's been used for salumis. We inoculate our salumis with that, and so that's going to be the predominant mold that's found in our coolers.

Diana Clark: Start off there. You know you're going to have good results there. You're going to have, that mold is going to be the most present because it's going to kind of win out against all other molds, and it's safe. Just keep moving along from there, and I feel like that's a good starting point.

Bryan Schaaf: Excellent. One more time because we are running a little tight on time, can you tell us one more time, what is the name of the mold?

Diana Clark: *Penicillium Nalgiovense*. It's Bactoferm mold-600 at sausagemaker.com.

Bryan Schaaf: I just wanted to make you say that twice.

Diana Clark: Thank you.

Bryan Schaaf: One last thing. Of course, our good friend Jess Pryles the hardcore carnivore, where can folks find the article that she wrote about dry aging?

Diana Clark: That would be on her website at hardcorecarnivore.com. If you search dry aging on there, it should come up pretty quick.

Bryan Schaaf: Excellent.

Diana Clark: Yeah.

Bryan Schaaf: Diana Clark, meat scientist, thank you so much for joining us today.

Diana Clark: Yeah. It's been a pleasure. Thanks for having me.

Bryan Schaaf: Chef Tony, you love meat science don't you?

Tony Biggs: I love meat science. I've got a smock with my name on it, so when I walk in, people think I'm the scientist.

Bryan Schaaf: Right, right. If you want to know how cool meat scientists are, there you go. Even chefs want to be meat scientists. Growing up, I wanted to be Freddie Mercury. Now I want to be Diana Clark. That's about all that we have time for this week here on the pod. We invite you to continue to check back and

subscribe. Check back soon because yeah, we're going to keep doing this podcasting thing. If you have any questions, if you have any ideas, if you want to know more than what we've presented in case we leave you with some cliffhangers, you can email us at podcastatcertifiedangusbeef.com. Until next week. We're going to tear into this dry aged strip loin, and it's going to be delicious.

Tony Biggs:

Yummy! Bye.