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## For Immediate Release

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### **CRAWFORD COUNTY DAIRY FARMER DISCUSSES FINDING INNOVATION IN DAILY TASKS, USING DATA TO MILK THE RIGHT COWS & MANAGING MANURE WITH LESS MECHANIZATION**

*Josh Waddell Was Interviewed in the Latest “Cow-Side Conversations” Podcast*

**Harrisburg, Pa.** – In the Center for Dairy Excellence’s latest episode of the [“Cow-Side Conversations” podcast](#), Josh Waddell of Apple Shamrock Farms LLC in Northwestern Pennsylvania talks about what innovation truly looks like – and how finding labor savings within daily tasks often gets forgotten on dairy farms. He shares some of the technology he utilizes on a daily basis and innovative decisions he has made to save on labor and drive efficiency. These include a three-cell lagoon system and sand lane system that helps reduce mechanization and labor costs by pumping manure versus hauling it. Josh also talks about the Afimilk cow monitoring system and feed tracking data he uses to make sure he’s milking the right cows, a coherent group calving system and bedded pack barn he built for springer cows, and the unique system he developed for group housed, free choice fed calves.

The Waddells milk about 1,200 cows, grow their own forages, and have approximately 25 full-time employees. During the podcast interview, Josh describes how they use technology and data analytics across the dairy operation through an Afimilk system. The technology allows Josh to monitor production, rest time, heat detection, and cow group changes. He’s also able to connect the technology to his feed tracking system.

“This system is huge for us. We’re milking 1,200 cows right now, and it allows me to sort 1,200 cows down to a list of 30 cows to go look at. We’re looking at cows that need attention and really maximizing our time. By knowing daily milk weights, you can also get ahead of things. We know if she’s sick before she knows she’s sick,” Josh shared. “That system feeds into my feed tracking system, which gives my nutritionist real-time information. We can make subtle changes in the diet just by knowing exactly what the cows are milking every day. It’s all real-time data. It’s fantastic.”

Josh finds the technology helps to ensure he is milking the right cows by giving data-driven insight into each cow’s potential. He says the technology also helps with growth opportunities in a structured way.

“The technology really allows you to watch your cows and be on top of things. You can plan. When you want to start growing, you have some confidence that you’re going to have the right cows. You’re not working blindly. It’s a lot more structured growth, which has always been our philosophy,” he explained. “You need to be milking the right cows. Just because your facility is full does not mean you have the right cows. With this technology, along with parlor monitoring technology, you can milk the right cows, maximize the milk per stall, and then you can start talking about high yields.”

For Josh and his family, genetics and genomic testing play an important part in milking the right cows. They are a satellite dairy facility for in vitro fertilization (IVF), and they have been doing IVF on a quarterly basis for about seven years.

“I really like proven and old cows. We’ll look at parents and find cows that are holding up in our facility correctly, pair that with genomic numbers, and get a snapshot. We’re taking yearling heifers and flushing them to get more of their babies on the ground to help milk the right cows,” he said. “I really think IVF is going to be game-changer in the industry. I don’t necessarily think you need to be doing it, but you need to be aware of people doing it. There’s opportunity to take a 20,000 pound cow and have her carry a baby that will be 40,000 pounds. She can still be there to milk, but she can replace herself with an animal twice as good.”

On the manure management side, Josh and his team inject all of their manure and find agronomic advantages to that practice in addition to fertilizer savings. They also separate their sand without the use of heavy machinery through a unique sand lane system. The system pumps sand-laden manure through a pipeline to get sand out of the manure instead of hauling it.

“We wanted to be on sand, but didn’t want to have the maintenance problems that come along with sand. So, we chose a three-cell lagoon system,” Josh explained in the podcast. “When you run your sand-laden manure through the sand lane, the sand drops out and goes into cell one. What’s left flows through cell one and into cell two and three. Those two cells act as a big settling pond. It gives you a very non-mechanical system.”

Josh has found that the system mitigates their labor and maintenance costs, and it also gives them options for what they can do with types of manure. The system helps with:

- **Less wear and tear.** “The electric pump took a truck off the road that would have hauled our sand. By having that sand lane, it also really saves my manure spreaders. We’re not wearing fans out on the front of the spreaders or hauling that heavy, sand-laden manure. It has been a game changer getting the sand out of the manure.”
- **Better and cleaner sand.** “Through the pumping system, we’ve found we’re making better sand by having a very consistent flow into the sand lane. It doesn’t sound like a lot, but you get a little more sand back. Your sand is cleaner, the turnaround time is faster, and it goes into the barn faster.”
- **Less maintenance.** “There’s only one pump and a concrete pad back there to break, so there’s just no maintenance involved. It’s as simple as it gets. It turned out to be a huge win.”

For projects like this, Josh makes a lot of his management decisions by working with a benchmarking group and comparing their numbers. He also has a few fellow dairy producers that visit each other’s farms and give advice. After getting an idea from one of his peers and putting a twist on it, Josh decided to build his own system to offer free choice milk replacer for his calves.

“Group housed, free choice fed calves are a big deal. If you can get it done right, it’s a big deal. The calves grow, and it offers labor savings. I’m very excited about that. It still needs some refining, but so far it’s working really well for us,” he added.

For his springer cows, Josh describes his approach to coherent group calving on a bedded pack style calving barn. He has groups of 14 cows and tries to ensure they are all due as close as they

can to each other. Every week, they move groups of cows into the bedded pack calving barn. If every cow in the group is due in a two-day window, they can stay with their group and don't have to experience social change.

"After moving from a just-in-time calving to a bedded pack style, I don't think I'll ever go back. We used to have 100 cows in a pen when a cow was trying to give birth to a calf. Now, it's so much more labor-friendly and it's easy to watch the cows. It's much less stress on the cows, too," Josh explained. "They are there, they are clean, and they can lay down. You aren't trying to put a cow in a box stall or trying to sort one cow out of 110. She's only in a group of 14."

Ultimately, Josh says innovation is about making simple, everyday tasks easier to cut costs and drive efficiency.

"When it comes to innovation, you can buy a fancy chopper or have a great corn planter but those tasks are a few weeks out of the year. What can you do to those daily tasks to automate them, simplify them, and make them labor-friendly and super easy?" Josh said. "Giving baby calves free-choice milk so if a feeder is late, there's milk there. That's where it's at. It's your daily tasks. When you look at innovation, sometimes people want to get held up on big barns and big parlors, but you walk by the things you're doing 365 days a year that might not take a lot of money to make better."

To listen to the full podcast interview with Josh, visit [www.centerfordairyexcellence.org/podcast](http://www.centerfordairyexcellence.org/podcast). The podcast is also available on [Spotify](#), [Apple Podcasts](#), and [Amazon Music](#). With a new episode released each month, this interview is the last episode in the fourth season. A new season will begin in November of 2024. The podcast was designed to share real-time farmer insight, tricks of the trade, and inspiring stories from dairies across Pennsylvania.

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The Center for Dairy Excellence is a non-profit organization initiated by the Pennsylvania Department of Agriculture in 2004. Bringing together people from more than 40 different dairy organizations in Pennsylvania, the Center's mission is to enhance the profitability of the dairy industry by empowering people, creating partnerships, and increasing the availability and use of resources. Learn more at [centerfordairyexcellence.org](http://centerfordairyexcellence.org).

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