Interview with Doug Parrett

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Interviewer: Mark DePue

DePue: Doug, I think we've arrived at the heart of your operation here. Why don't you tell us what we've got here.

Parrett: Well what we have is, what makes this beef research facility unique is, we have the ability to measure individual animal feed consumption on about 900 head, at any one time. Now why is individual feed consumption? Well what we're trying to do is determine which animals grow and gain more efficiently. Who can grow while eating less feed, or who can grow faster while eating the same amount of feed? We've always assumed if animals were bigger and grew faster, they were more efficient, but we never had the opportunity in large scale, in history, to measure that kind of intake. Now part of that is a couple of electronic discoveries, or things that were made for research.

This is a Gross A feeding system, and it's pretty simple in design and pretty intricate as far as the electronics to it. These tubs are surrounded with electronic sensors to these bars, and so what we have is a space for one animal to come in individually and consume feed. So each of the animals, if you look out at the animals, you see they have an identification tag, and in their left ear there's a little, small, white electronic transducer tag, an RFD, a radio frequency tag. And so when the animal comes into the bin, it sets off the computer and it weighs his feed bunk every second. And so we have the capacity then, no matter what feed we're feeding, what animals are in there, we can measure how much feed they eat. It's our goal here, is how do we identify animals that can grow fast, be efficient, and actually do it on less feed.

DePue: Doug, it looks like we're at the brain center, if you will, for the grow safe operation. Tell us a little bit about what we're looking at.

Parrett: Well what's interesting is we're at a time in research, when we can gather an enormous amount of information. We just looked at Gross A feeders. We talked about when an animal is in there, measuring their consumption by the bite, or

every second, and so you have 900 animals, twenty-four hours a day, every second they're eating, and we record it somewhere in the data. Now, when you get a lot of data, then you can actually start to think wow, what can I do with all this data? One of the good things is, if we go here and look, you see every animal and how they've eaten over a twenty-four hour period. Animals take a distinct eating order. They have a dominance and recessive. Some animals eat at daylight, some animals eat in the middle of the day, and some animals eat at different times, and at the end of the twenty-four hour period, they all should have consumed similar amounts, not the same but similar amounts of feed. But when you start each day, what we learned from our pattern of consumption is, there will be an animal, if you go through here, that hasn't eaten. And then you can say all right, animal number twenty-seven, in pen number seventy, you need to go look at it because it's probably sick or getting sick, or something's happening that it's not consuming, or the equipment is not measuring. Maybe its ear tag is wrong. But you can just sit here in the office before you start your day, and identify animals that might have a problem. Now most production facilities, they have what they call a pen manager, who goes through and looks for all these problems, whether it's sick animals or some kind of identification tag that's not working, things like that. But here we have this.

Now, the next frontier for research is, particularly when we think about genomics and DNA related research, what do we do with all this information? What do we do with this enormous amount of information? What are the combinations that we can put together, that actually will help us solve problems? And so this bioinformatics, using biological information to solve problems, is going to be the next hurdle. We're gaining and gathering more information than we can actually produce and resolve right now, but we're putting it away somewhere, and computer capacity does that.

DePue: What's the difference between the red bars and the green bars?

Parrett: Well the green bar would be an active consumer. So that's an animal that's actively eating right now. The red bar would be just an accumulation then, of consumption during the last—you know, through this current twenty-four hour period.

DePue: And the animals we were just looking at, how old were those animals? How much do they weigh? How much larger are they going to be growing?

Parrett: Those animals out there in those pens weighed about 600 pounds. They would be animals that are about nine months old, and they've been on just before, they were weaned and then have just been on a grass diet to now. And then we're actually finishing them now, and for a period of time we're feeding them on mostly a forage or grass diet. One of the questions we're addressing; traditionally, we have fed cattle high corn diets, high energy diets, and now we're using corn byproducts. High energy diets beget rapid growth and high quality meat. Now we're asking the question, what about cows, producing cows

that end up spending their life just eating grass. Are they animals that were efficient, in this case the steers, the males, efficient on grain, are their half sibs, animals sired by the same sires, are they also efficient but on a forage diet? So it's a very practical question but a very important question.

Again, I can't reiterate enough, all of the DNA is collected on these animals, and we have people diving into all these myriads and profiles, and looking at these assays of hundreds and thousands of sets of genes, and how do they influence animal production.