Crowning Achievements at the 2010 World Dairy Expo

Booth #176 in the Arena Level of the Coliseum

Enter for a chance to win a free genetic preservation

2010 BOVANCE EVENTS

October:

World Dairy Expo
Madison, WI; Sept. 28 - Oct. 2

American Royal
Kansas City, KS; Oct. 22 - 31

November:

North American International Livestock Expo
Louisville, KY; Nov. 6 - 19

Stop by the Bovance or Trans Ova Genetics booth and ask us how genetic preservation and cloning can bring extra value to your herd.

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Inside this issue:

BOVANCE BULLETIN: Fall 2010

Champion Steer at Iowa State Fair Continues Reign

The 2010 Grand Champion Steer at the Iowa State Fair uniquely claims a familiar title. "Doc", the steer shown by Tyler Faber of Sioux Center, Iowa, was a genetic copy or clone of the Grand Champion Steer, which won at the same show in 2008 – produced through cloning technology. A clone is basically an identical twin, just born at a later place in time.

"This is a milestone achievement," says Diane Broek, general manager of Bovance. "Achieving championship status demonstrates that superior genetics can be replicated through cloning technology, and offers breeders successful options. Though few animals are worthy of the investment and time to be cloned, those that truly are elite outliers can provide great contributions to improving the meat and milk supply. These are the best candidates for the technology," she adds.

Broek acknowledges that a great deal of precise nutrition, care and husbandry were required to ensure the growth and development of this individual coupled with the genetic caliber of the calf. "Bovance offers services that provide a genetic opportunity to our clients but ultimately, in the show ring, genetics are only a minor portion of the winning recipe. It takes hard work and skill on the part of the exhibitor to bring out the best in that genotype, and even then, there is an element that is out of their control. A champion animal is a combination of the three and we congratulate Tyler on this achievement".

As with other animals produced through Bovance, Doc was registered in the Supply Chain Management Program – which identifies and registers cattle and pigs produced through cloning technology.

Sired by the famous club calf sire, Heatwave, Doc's pedigree further illustrates elite genetics and the advanced use of technology. Heatwave has been genetically replicated through cloning in order to make his elite genetics available to more breeders through his clones. •

Understanding the Perspectives: EU's Position on Cloning

As the debate in Europe over the use of livestock cloning continues, there is public confusion on the situation. Below are things you should know:

1. Currently, Europe considers products from cloned animals to be "novel foods" needing approval to enter the marketplace. The specific regulation is unclear on food from the offspring of clones. The process to revise the novel foods directive is ongoing.
2. The three bodies of government that must agree on legislation in Europe do not agree on the issue. The **Commission** is comfortable with clones in novel foods as it is currently; the **Council** wants clones and its first generation offspring to be in novel foods; and the **Parliament** wants to prohibit clones and their offspring from being used or imported into Europe.
3. The revision process now is in conciliation among the three bodies to reach consensus.
4. The Commission is drafting a report on the different aspects of cloning and is set to be released in November. Bovance, ViaGen and Trans Ova Genetics have supplied information for use in the report.
5. Recent press highlighted the confusion in this debate. Officials in the U.K. discovered products from the offspring of a cloned dairy cow had entered the marketplace. The U.K. is the only Member State to consider products from offspring of clones to be novel and need approval before consumption.
6. The U.S. government is actively engaged in the issue and works closely with cloning technology providers; beef, pork and dairy trade associations; and genetic exporters to ensure no non-tariff barriers are erected for U.S. products because of cloning.
7. ViaGen and Trans Ova Genetics operate the Supply Chain Management program to identify and register clones produced. We provide an incentive for proper disposal of the clones at the end of their reproductive life.

Bovance will keep you informed on the EU issue. Please contact us with any questions. •

CLONING Q & A

Q: I understand that there is a more economical option to Genetic Preservation now available through Bovance exclusively…tell me more.

A: In the past year, Bovance has added a new service called Express Tissue Bank (ETB) that allows for the cryopreservation of tissue samples without going through the cell line or Genetic Preservation (GP) process. This service is available for those clients that may want to take a large amount of samples but will move forward with cloning relatively few of those samples. The service is very economical, starting at $300 however, if you do decide to clone at a later date, a cell line or Genetic Preservation will need to be produced in order to have the cells needed for the cloning process. At that point, the Genetic Preservation fee of $1,500 would apply. So if you feel there is a high likelihood that you will clone the genetic donor, we would suggest that you start right in with a Genetic Preservation so the cells are in the bank and you do not incur both an ETB fee and a GP fee. If you would like to preserve a large group of genetic donors with the possibility of only cloning a few, years later when you have more information on their production, the Express Tissue Bank option may be the service for you.

Q: When choosing a cloning company, it is very important to me that I choose someone with experience. How long has Bovance been cloning cattle?

A: Bovance is a joint venture of two established companies: Trans Ova Genetics of Sioux Center, Iowa and ViaGen of Austin, Texas. The combined years of experience from these parent companies involves over 12 years in cloning dairy and beef cattle and an additional 30 in advanced reproductive technologies. They have produced more cloned animals for agriculture purposes than any other organization in the world and through ViaGen, have the exclusive rights to the "Dolly patent" which covers the somatic cell nuclear transfer process (SCNT) used to produce most of the cloned embryos transferred today.

A tissue sample is the first step to the preservation of elite genetics.

Q: I have heard there is a registry of cloned animals….what does that involve?

A: To assist food processors wishing to identify food products from a cloned animal, ViaGen and Trans Ova Genetics created a Supply Chain Management (SCM) program in December 2007. This program has components of education for clients, affidavits, identification and registration of the cloned animal and a marketing incentive. Each cloned cow or bull receives a radio frequency identification device (RFID) ear tag with a unique animal number that is entered into a national registry of cloned animals that can be queried by legitimate users. The program was developed with extensive cooperation and input from all critical participants in the food supply chain, including representatives from beef, dairy and pork industries, as well as processors, grocers and food service providers. All calves currently produced in the Bovance program are enrolled in the SCM program to help facilitate the movement of this technology in an orderly transition towards commercialization. •

Sweetness of Carmel Extended Through Her Clones

Ralma Goldwyn Carmel-ET, achieved the maximum Holstein classification score of Very Good 89, as a two-year old. Carmel also had an outstanding first-lactation, producing more than 36,000 pounds of milk, 1,400 pounds of butterfat and 1,200 pounds of protein. Carmel's impressive pedigree, combined with her production records has made her one of the most heavily contracted cows for embryos, bulls and female offspring. For these reasons, her owner Jeff Rugg, D.V.M., turned to cloning to preserve her genetics and expand her reproductive potential.

Rugg cites several reasons for his decision to clone her. "First of all, it was an added insurance policy to preserve her genetics in case something would cause her to die," says Rugg. "Secondly, it became evident that it would be impossible to produce enough female offspring for me to develop, due to the tremendous international demand for her embryos," he adds. "Finally, I really wanted to see Carmel develop as a milk cow normally would, which would mean that I couldn't have her both producing embryos and pregnant at the same time."

In March of 2009, four beautiful clone heifers were born, surpassing his expectations. According to Rugg, all four heifers are very similar to Carmel, and all four already have begun producing embryos using in vitro fertilization (IVF) and reverse-sorted semen from high genomic young sire matings to produce the next generation of outstanding, genetically superior females.

"With the four clone copies of Carmel, I am able to generate genomically-superior females through the use of IVF – and still allow these heifers to develop and mature as lactating cows as well," says Rugg. "I have been able to generate a total of 29 IVF female pregnancies by 8 different sires, and all four clones are due to calve in at 23 to 24 months of age." •

Facebook in 2011

Bovance will launch a fan page in January 2011, where you can exchange ideas and thoughts relative to cloning technology. Visit our fan page at www.facebook.com/bovance and click the "Like" button.

Make sure to check the fan page weekly for cloning facts, polling questions, upcoming events and promotions. We're eager to hear your thoughts on the latest in cloning and genetic preservation. •

facebook

Bovance Announces Scholarship Program

Bovance is happy to announce our first scholarship essay contest open to high school seniors and students pursuing their first or second year of higher education. Students must write an essay between 750 and 1,000 words based on one of the following questions:

- *How do you think cloning and genetic preservation benefit the livestock industry?*
- *What animal would you clone to lead a specific breed, and why?*
- *How would you explain the benefits of cloning to a consumer who is questioning the technology?*
- *How would you explain to a consumer that products (meat or milk) from a cloned animal are safe?*

Entries must be received no later than March 1, 2011, with winners being announced by April 15, 2011.

For more information and to obtain an application visit www.bovance.com.

MORE INFO AT:

- www.bovance.com
- www.transova.com
- www.viagen.com
- www.clonesafety.com