FCEB 32

PI: Geoff Dahl

Final Report for 2017 to Florida Cattle Enhancement Board on Brahman Herd Expansion Project at UF (UF Project P0038415); 1 September 2017

Bos Indicus genetics are a critical component of Florida cattle production and that importance extends through out the southeastern US. Resilience to heat and humidity, parasite resistance and other factors are improved with Brahman influenced crosses vs. Bos taurus animals. While the absolute percentage of Bos indicus genetics within a commercial herd will vary in Florida, almost all producers use some level of Brahman or other Bos indicus blood to generate the terminal animal of highest productivity in our environment. Despite these advantages, purebred Brahman, have some disadvantages especially in the area of carcass quality and reproductive performance when compared with Bos taurus cattle. While some progress has been made in identifying animals that express desirable genetics for carcass and reproductive performance, much more work is needed to advance this field. That advance, however, requires a larger herd of animals to use in identifying and testing genes of interest.

The unique opportunity for developing the herd of Brahman cattle has been recognized by the FCA and Brahman producers in Florida since before the closure of the USDA-ARS facility at Brooksville. Indeed, the nucleus of our herd is from the herd that was liquidated as Brooksville closed. Most recently, the FCA passed a resolution on September 8, 2016, that:

"The Florida Cattlemen's Association recommends that the department of Animal Sciences at the University of Florida move forward with the Bos Indicus improvement initiative. The directive is to develop selection tools for the industry in order to improve the Brahman breed with a focus on carcass quality and fertility"

The aim of this project is to rapidly expand the Brahman herd at the University of Florida to provide a resource for studies related to improving carcass and reproductive selection. Expansion of this herd, along with collaboration with Brahman producers in Florida and elsewhere, will allow for meaningful studies related to genetic selection for improved carcass quality and reproductive performance. The first step in the project was to establish an advisory committee of Florida Brahman breeders to provide input on mating selections and general approaches for the herd expansion. That committee coordinated by Jerry Wasdin and chaired by Henry Kempfer, has met twice face-to-face since April, 2017, and had numerous phone discussions regarding the breeding program for herd expansion.

While carrying capacity at the Gainesville units is limited, we project that we can expand the herd to ~250 mature Brahman cows by internal expansion and replacement of the current herd of Angus-Brangus animals at Santa Fe/Boston farm. To accelerate the expansion we initially used some of our top Brahman females to produce embryos that we could transfer to our Angus/Brangus cows and heifers. The last update on the UF Brahman herd IVF project was on April 24, 2017. As previously reported, the first round of IVF in March resulted in 4 early pregnant recipients as diagnosed on April 24, 2017.

Since that time, in our second round of IVF, on May 14 and 15 we performed oocyte pickup (OPU) on 16 cows from our UF registered Brahman herd. 185 oocytes were collected and taken to Dr. Hansen's lab for fertilization. Due to an accident in the lab, only 45 viable embryos were formed and implanted into our recipients on May 23. This resulted in 18 early pregnancies diagnosed on June 20.

Because we had such low numbers after the first two rounds, we decided to purchase frozen embryos to attempt a third round for the Spring 2017 breeding season. 45 sexed female embryos were located and purchased from Southern Cattle Co. These were put into our recipients on June 20. They were pregnancy checked on 7-20 and resulted in 25 early pregnancies (~90% female). In summary, from the IVF program we produced 47 early pregnancies, some of which we expect not to go to term. We feel we'll get around 40 live calves out of the Spring 2017 embryo work, and many of those will be heifers. With the additional funding provided to our project in July of 2017, we have produced additional embryos to be placed in December of 2017 and Spring of 2018. We currently have 147 frozen sexed female embryos produced in Texas. These embryos have use production-based donor cows from a Texas ranch (Kallion Farms) with a combination of AI sires being used in our UF program from various producers in Florida and out of state.

Also, from our breeding program at the Beef Research Unit, we have pregnancy tested the Brahman herd with the following results: Through AI and natural service, we have 62 pregnant mature cows (94 %), 15 pregnant 2 yr. old heifers (100%), and 11 pregnant yearling heifers (44%). Of these we will need to cull approximately 5 cows and heifers for disposition or other serious production problems, but should still have around 83 pregnant females for the 2018 Spring calving season.

Overall, there are approximately 47 IVF pregnancies (several sexed, female), and 88 natural and AI pregnancies produced to make registered Brahman calves. Taking into account necessary culling and expected embryonic loss, we are projecting around 123 purebred calves born in 2018, with a good supply of frozen embryos in store for the 2018 breeding season (and late 2017). We will also be attempting to make more fresh IVF embryos from our own donors in 2018, and have more experience and knowledge gained this year which should help us have better results next year.

BUDGET FOR FLORIDA CATTLE ENHANCEMENT FUND- BUDGET JUSTIFICATION				
PROJECT TITLE: 32 Expanding the UF Brahman Herd				
	% Complete	τοτλι	EXPLANATION/JUSTIFICATION OF	COMPLETION DATE
DETAILED LINE ITEM DESCRIPTION	% complete	TOTAL		
Materials and Supplies	100%	\$ 31,324.92	Purchase of materials and supplies for reproductive procedures and care and handling of the Brahman cowherd	9/1/2017
Embryo Production and Transfer	100%	\$ 94,615.26	Expenses associated with the production and transfer of embryos	9/1/2017
Final Research Project Report			Project report detailing research, which may include, findings, future needs, results, conclusions, issues, risks, assessments and all other pertinent information.	9/1/2017
Indirect Cost		\$ 15,065.31		N/A
GRAND TOTAL: (equal to percentage		\$ 141 005 40		
of completion)		ş 141,005.49		