Final Technical Report

FCEB Project #2

UF beef herd management software

Principal Investigator: Fernanda Rezende

Co-Principle Investigators: John Arthington and Raluca Mateescu

1. Main objective

   The purpose of this project was to *provide high-quality and easily accessible records on purebred Brahman and Brahman influenced cattle for the development of research-proven solutions directly applicable and relevant to the Florida beef industry*. Our **main objective** was to development and implement a custom beef cattle herd management software that unifies the entry, compilation, storage, and access to UF/IFAS beef cattle herds data.

2. Significance

   From a research perspective, it will serve as unique resource for current and future projects investigating the Brahman breed and its influence. New opportunities may arise to better inform and educate students and stakeholders about the biology, contribution, and challenges of Brahman breed to the Florida beef industry. In addition, it will set the stage for the future implementation of herd electronic identification and automated data collection, improving herd traceability. Ultimately, it has the *potential to improve animal overall performance* through the continued development of *optimized management, health and reproduction protocols that will drive more assertive recommendations for the Florida Beef Cattle industry* based on even more reliable, up-to-dated, and faster to access field and genetic records.

3. Approach

   Develop a unified high-quality dataset including productive, reproductive, health and genealogical data from UF Brahman and Multibreed herds. Provide access to current and historical herd records to researchers and extension agents. Facilitate data collection, compilation, and access for the annual genetic evaluation, and support current and future research projects focused on Brahman cattle.

4. Final report

   Data integration and normalization are essential steps to make historical data compatible with the software structure and meaningful to the needs and interests of the users. The

software development and data integration were conducted and oversaw by Dr. Rezende in collaboration with a specialized and renowned company with more than 20 years of experience in data control of beef cattle herds.

To illustrate the complexity of these processes, only the company has dedicated roughly 450 h to our project and 80% of their time has been on gathering, compiling, and checking records across several Excel spreadsheets accumulated over time (Figure 1).

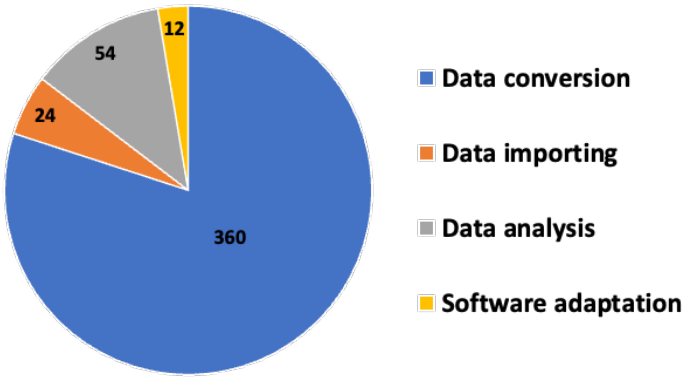

Figure 1. Software developer work hours dedicated per activity.

Records from 4,396 calves born from 2016-2023, including mating (2015-2022) and genealogy information have been already incorporated into the software database. A summary of compiled records per breeding season from UF Beef Research Unit (BRA) and Santa Fe Beef Unit (STAFE) is presented below (Table1).

It is noteworthy that all these records were scattered innumerous spreadsheets accumulated over time, requiring careful data curation. A total of 19,895 records have been included into a standardized, unique and high-quality dataset. For that, mating and calving information were crossed and exhaustive checked for consistency demanding more time than originally to complete this essential step.

The SQL database has been allocated to the UF/IFAS served from where it will be accessed from computer stations located at the UF beef units form data entry, access and management. Only beef unit manager and authorized staff will be allowed to add or modify records in the database. However, the data will be available for consultation and export by ANS faculty and students.

Translate records into ready to be used and meaningful information is a very time-consuming process but rewarding when completed. We are very excited with the progress of these project and looking forward to having it fully incorporated into our UF beef units' daily management activities, as well as supporting beef related research projects.

Table 1. Number of records per breeding season and farm

Farm	Year	# Cow	# IA	# TE	# Calving	#Calves
BRU	2015	132	134		132	132
BRU	2016	318	263		318	322
BRU	2017	441	454		355	359
BRU	2018	377	352		306	305
BRU	2019	472	427		235	235
BRU	2020	424	328	64	247	247
BRU	2021	493	239	114	231	232
BRU	2022	456	302	108	249	235
BRU	2023	475	367	122	211	203
STAFE	2015	288	297		198	213
STAFE	2016	284	163		200	203
STAFE	2017	289	59	118	150	153
STAFE	2018	444	232	234	282	283
STAFE	2019	318	181	114	325	326
STAFE	2020	388	367		303	306
STAFE	2021	326	275		302	307
STAFE	2022	426	373		351	335
STAFE	2023	376	269		308	287

5. Conclusion

The project has been successfully conducted, the database was completed, and the software implemented. As next steps, trainings are under development to be offered to beef unit manage, staffs and faculty members later this upcoming semester. We appreciate the Florida Enhancement Board for its continuously support for the success of the UF beef research program.

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Invoice Date:	08/15/2024
Invoice Period:	05/01/2024 - 07/31/2024
Principal Investigator:	Marcondes De Rezende, Fernanda
Award Begin Date:	10/30/2023
Award End Date:	07/31/2024
UF FEIN:	59-6002052

Sponsor Award ID:	2
Award Title:	UF Beef Herd Management Software
Award Amount:	$39,880.00

Invoice #	I000130490
UF Award #	AWD15806
Primary Project #	P0324622
Primary Department:	60090000
Current Invoice Amount:	$31,217.79

Description	Current	Cumulative
Personnel - Salary	$752.49	$2,016.12
Personnel - Fringe Benefits	$220.45	$590.67
Materials and Supplies	$26,900.09	$26,900.09
Direct Cost	$27,873.03	$29,506.88
Facilities and Administrative Costs	$3,344.76	$3,540.82
Total	$31,217.79	$33,047.70

For billing questions, please call 352.392.1235
Torres,Kannika S kannika@ufl.edu
Please reference the UF Award Number and Invoice Number in all correspondence

By signing this report, I certify to the best of my knowledge and belief that the report is true, complete, and accurate, and the expenditures, disbursements and cash receipts are for the purposes and objectives set forth in the terms and conditions of the federal award. I am aware that any false, fictitious, or fraudulent information, or the omission of any material fact, may subject me to criminal, civil, or administrative penalties for fraud, false statements, false claims or otherwise. (U.S Code Title 18, Section 1001 and Title 31, Sections 3729-3730 and 3801-3812).

Kannika Torres

Certifying Official

Payment History	
Cumulative Invoices:	$33,047.70
Payments Received:	$1,829.91
Outstanding Balance:	$31,217.79
Note: Outstanding balance includes current invoice amount	

FOR UF USE ONLY Additional Projects: N

Project ID	Deptid	Department Name	Current	Cumulative
P0324622	60090000	AG-ANIMAL SCIENCES	$31,217.79	$33,047.70