Know Your Heifer

Optimizing Replacement Beef Heifer Development in Florida

Final Report and Florida Ranking

2020-2021

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Support:

Gainesville, August 20th, 2021

Dear Rancher,

Thanks for participating in the "**Know Your Heifer Program" 2020-2021**. Please find below a summary of the data collected during the first year of the Program. We also included data collected in some of our studies, conducted in the last three breeding seasons in Florida ranches. The purpose of this **Final Report and Florida Ranking** is to illustrate how our industry compares in terms of reproductive potential and reproductive performance of yearling heifers.

The name of your operation is indicated so that you can see how you ranked among the other operations that participated, but the identity of the other ranches was kept anonymous.

We ranked operations by three different criteria: **final pregnancy rate** (Table 1), **proportion of mature heifers** (Table 2) and **pregnancy rate at 30 days** (Table 3). For each ranking we highlighted ranches in the top 10, 25 and 50%. We also presented a summary of overall reproductive performance according to reproductive tract scores of heifers (Figures 3 and 4).

I hope that this ranking helps to guide your next steps and to set goals regarding reproductive management of your yearling heifers in the up-coming breeding seasons. Please contact me or your County Agent if you have any questions about this program. I hope you will enroll your animals again in the 2021-2022 "Know Your Heifer" Program!

Many thanks for your participation. Best regards,

Mario Binelli, PhD

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For more information on this program, please go to our webpage:
https://animal.ifas.ufl.edu/extension/beef/KYH/

Table 1. Ranking of Florida operations according to pregnancy rates measured 30 days after the end of the breeding season **(Final Pregnancy, %).** Orange represents operations ranked on the top 10%, Blue represents operations ranked on the top 25% and Green represents operations ranked on the top 50%.

Ranch	Code	Number of head	Duration of the Breeding season, days	Program	Protocol	Service	RTS1-2*	Proportion RTS4–5, %	Pregnancy 30d, %	Final Pregnancy, %
	1	16	.	KYH	None	None	.	0.0	.	.
	2	5	94.0	KYH	CIDR	AI+Bull	Cull 2	60.0	.	100.0
	3	64	100.0	KYH	CIDR	AI+Bull	Cull 1	85.9	50.0	98.4
	4	24	89.0	KYH	None	Bullonly	None	95.8	.	95.8
	5	54	119.0	KYH	CIDR	Bullonly	Cull 1	66.7	.	93.5
	6	90	82.0	KYH	CIDR	AI+Bull	Noncull	90.0	48.3	93.3
	7	74	77.0	Study	CIDR	AI+Bull	Noncull	37.8	43.2	93.1
	8	66	90.0	Study	CIDR	Bullonly	Noncull	81.8	.	92.3
	9	107	63.0	KYH	MGA	Bullonly	Noncull	89.7	.	91.6
	10	11	79.0	KYH	Long-CIDR	AI+Bull	Noncull	0.0	.	90.9
	11	137	73.0	Study	MGA	AI+Bull	Noncull	83.9	45.2	90.5
	12	154	67.8	Study	CIDR	AI+Bull	Noncull	85.7	39.0	90.3
	13	59	62.5	Study	CIDR	Bullonly	Noncull	79.7	38.9	89.7
	14	163	91.0	KYH	CIDR	AI+Bull	Cull 2	77.9	35.1	89.6
	15	93	86.0	KYH	Long-CIDR	AI+Bull	Noncull	78.5	.	89.1
	16	152	90.0	Study	CIDR	AI+Bull	Noncull	88.2	44.1	87.4
	17	96	64.0	KYH	MGA	AI+Bull	Noncull	83.3	50.0	86.5
	18	66	92.0	Study	CIDR	AI+Bull	Noncull	81.8	43.9	84.8
	19	318	74.0	KYH	CIDR	AI+Bull	Cull 1	54.4	.	84.5
	20	126	61.0	KYH	MGA	AI+Bull	None	81.7	37.3	84.1
	21	129	60.0	KYH	MGA	AI+Bull	Cull 1	67.4	40.2	83.9
	22	67	64.0	KYH	CIDR	Bullonly	Noncull	83.6	.	83.6
	23	33	63.0	KYH	CIDR	Bullonly	Cull 1	51.5	.	81.8
	24	64	59.0	KYH	Long-CIDR	AI+Bull	Cull 2	68.8	.	81.8
	25	101	94.0	Study	CIDR	AI+Bull	Noncull	69.3	40.6	81.2
	26	63	113.0	Study	CIDR	AI+Bull	Noncull	74.6	36.5	79.4
	27	87	86.0	Study	CIDR	AI+Bull	Noncull	36.8	39.1	79.3
	28	96	69.0	Study	CIDR	AI+Bull	Noncull	52.1	30.2	79.2
	29	40	63.0	KYH	CIDR	Bullonly	Noncull	22.5	.	75.0
	30	171	65.2	KYH	MGA	Bullonly	Noncull	75.4	.	73.5
	31	22	72.0	KYH	Long-CIDR	AI+Bull	None	95.5	.	72.7
	32	92	60.0	KYH	None	Bullonly	Noncull	62.0	.	71.7
	33	94	92.0	KYH	CIDR	AI+Bull	Noncull	69.1	26.6	66.7
	34	141	60.0	Study	CIDR/None	Bullonly	Noncull	40.4	20.1	61.4
Total	.	3075	76.0	.	.	.	.	70.1	38.6	83.7

*Noncull: no heifers culled due to RTS; Cull 1: culled heifers that scored RTS1; Cull 2: culled heifers that scored RTS1 and RTS2; None: all heifers were RTS3 and above, none were culled.

Table 2. Ranking of Florida operations according to the proportion of heifers with RTS 4 and 5 (**Proportion RTS4-5, %**). <u>Orange</u> represents operations ranked on the top 10%, <u>Blue</u> represents operations ranked on the top 25% and <u>Green</u> represents operations ranked on the top 50%.

Ranch	Code	Number of head	Duration of the Breeding season, days	Program	Protocol	Service	RTS1-2*	Proportion RTS4–5, %	Pregnancy 30d, %	Final Pregnancy, %
	4	24	89.0	KYH	None	Bullonly	None	95.8	.	95.8
	31	22	72.0	KYH	Long-CIDR	AI+Bull	None	95.5	.	72.7
	6	90	82.0	KYH	CIDR	AI+Bull	Noncull	90.0	48.3	93.3
	9	107	63.0	KYH	MGA	Bullonly	Noncull	89.7	.	91.6
	16	152	90.0	Study	CIDR	AI+Bull	Noncull	88.2	44.1	87.4
	3	64	100.0	KYH	CIDR	AI+Bull	Cull 1	85.9	50.0	98.4
	12	154	67.8	Study	CIDR	AI+Bull	Noncull	85.7	39.0	90.3
	11	137	73.0	Study	MGA	AI+Bull	Noncull	83.9	45.2	90.5
	22	67	64.0	KYH	CIDR	Bullonly	Noncull	83.6	.	83.6
	17	96	64.0	KYH	MGA	AI+Bull	Noncull	83.3	50.0	86.5
	8	66	90.0	Study	CIDR	Bullonly	Noncull	81.8	.	92.3
	18	66	92.0	Study	CIDR	AI+Bull	Noncull	81.8	43.9	84.8
	20	126	61.0	KYH	MGA	AI+Bull	None	81.7	37.3	84.1
	13	59	62.5	Study	CIDR	Bullonly	Noncull	79.7	38.9	89.7
	15	93	86.0	KYH	Long-CIDR	AI+Bull	Noncull	78.5	.	89.1
	14	163	91.0	KYH	CIDR	AI+Bull	Cull 2	77.9	35.1	89.6
	30	171	65.2	KYH	MGA	Bullonly	Noncull	75.4	.	73.5
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	21	129	60.0	KYH	MGA	AI+Bull	Cull 1	67.4	40.2	83.9
	5	54	119.0	KYH	CIDR	Bullonly	Cull 1	66.7	.	93.5
	32	92	60.0	KYH	None	Bullonly	Noncull	62.0	.	71.7
	2	5	94.0	KYH	CIDR	AI+Bull	Cull 2	60.0	.	100.0
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	29	40	63.0	KYH	CIDR	Bullonly	Noncull	22.5	.	75.0
	1	16	.	KYH	None	None	.	0.0	.	.
	10	11	79.0	KYH	Long-CIDR	AI+Bull	Noncull	0.0	.	90.9
Total	.	**3075**	**76.0**	.	.	.	.	**70.1**	**38.6**	**83.7**

*<u>Noncull</u>: no heifers culled due to RTS; <u>Cull 1</u>: culled heifers that scored RTS1; <u>Cull 2</u>: culled heifers that scored RTS1 and RTS2; <u>None</u>: all heifers were RTS3 and above, none were culled.

Table 3. Ranking of Florida operations according to pregnancy rates measured 30 days after the beginning of the breeding season **(Pregnancy 30d, %).** These are usually for operations that performed AI. Orange represents operations ranked on the top 10%, Blue represents operations ranked on the top 25% and Green represents operations ranked on the top 50%.

Ranch	Code	Number of head	Duration of the Breeding season, days	Program	Protocol	Service	RTS1-2*	Proportion RTS4–5, %	Pregnancy 30d, %	Final Pregnancy, %
	3	64	100.0	KYH	CIDR	AI+Bull	Cull 1	85.9	50.0	98.4
	17	96	64.0	KYH	MGA	AI+Bull	Noncull	83.3	50.0	86.5
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	33	94	92.0	KYH	CIDR	AI+Bull	Noncull	69.1	26.6	66.7
	34	141	60.0	Study	CIDR/None	Bullonly	Noncull	40.4	20.1	61.4
Total	.	**1892**	**80**	.	.	.	.	**71.4**	**38.6**	**83.7**

*Noncull: no heifers culled due to RTS; Cull 1: culled heifers that scored RTS1; Cull 2: culled heifers that scored RTS1 and RTS2; None: all heifers were RTS3 and above, none were culled.
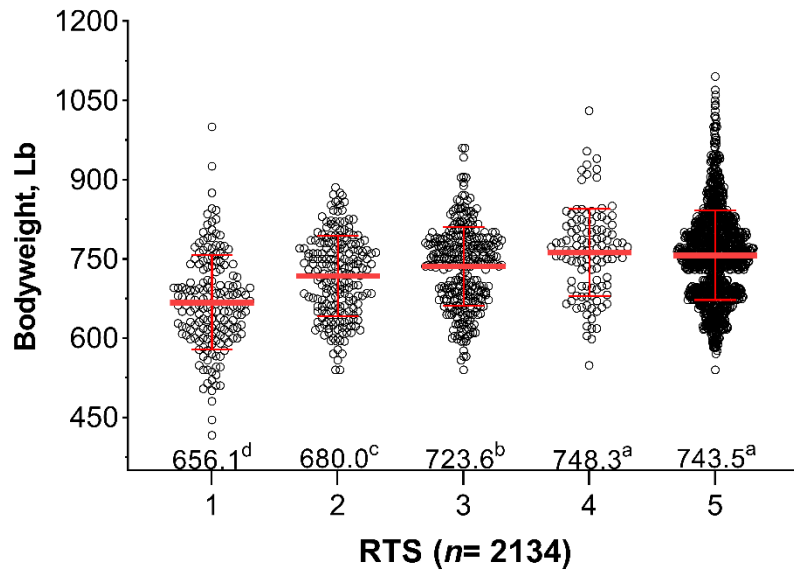
Figure 1. Individual body weights of heifers according to the RTS, in all operations. Number at the bottom is the average body weight for each RTS class. Means with different superscripts are statistically different (P < 0.01).

Interpretation: Although, on average, body weights are smaller for heifers with a smaller RTS, there are heifers with similar body weights throughout all RTS classes. Thus, one cannot predict sexual maturity based on body weight alone.
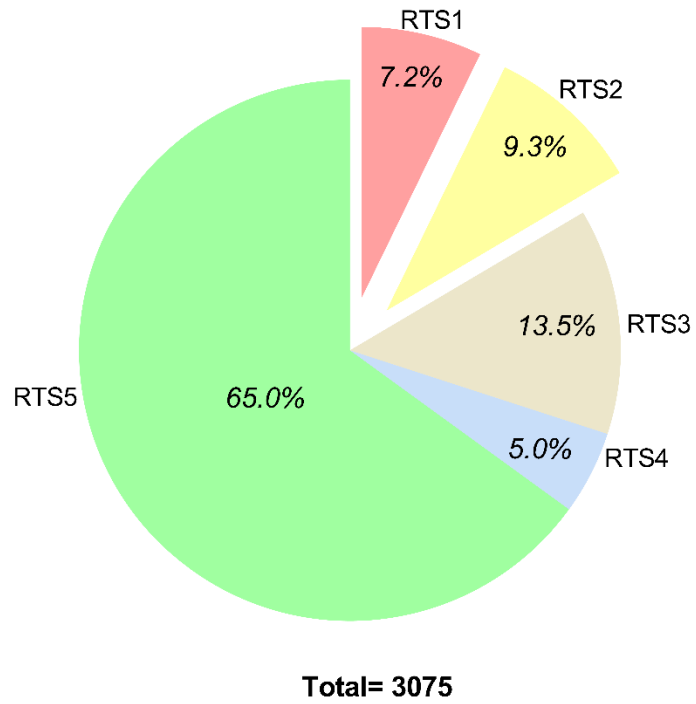
Total= 3075

Figure 2. Proportion of heifers in each RTS class, considering all operations.

Interpretation: there were 30% immature heifers (RTS 1, 2 or 3) prior the breeding season in Florida operations.
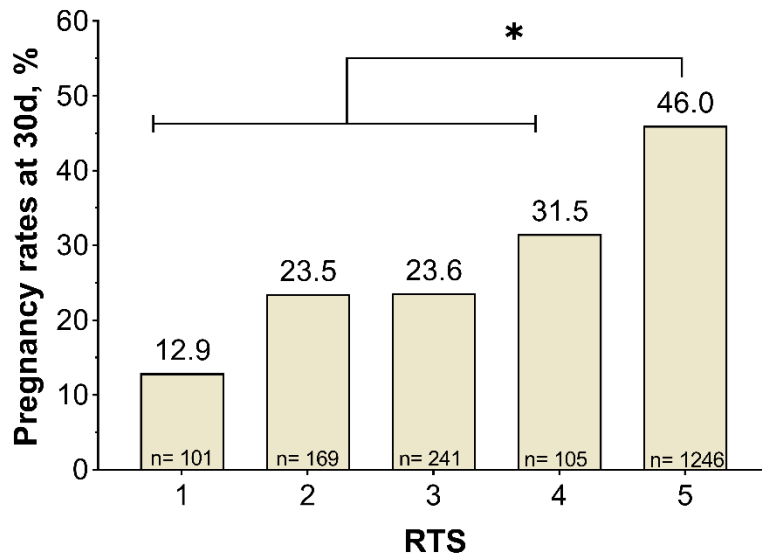
Figure 3. Pregnancy rates measured 30 days after the beginning of the breeding season according to the RTS measured prior to the breeding season in Florida operations. There was a significant effect of RTS class on pregnancy rates ($P < 0.001$). Pregnancy rate of RTS5 heifers was greater than every other RTS classes ($P < 0.05$).

Interpretation: only RTS5 heifers achieved excellent pregnancy rates on the beginning of the breeding season.
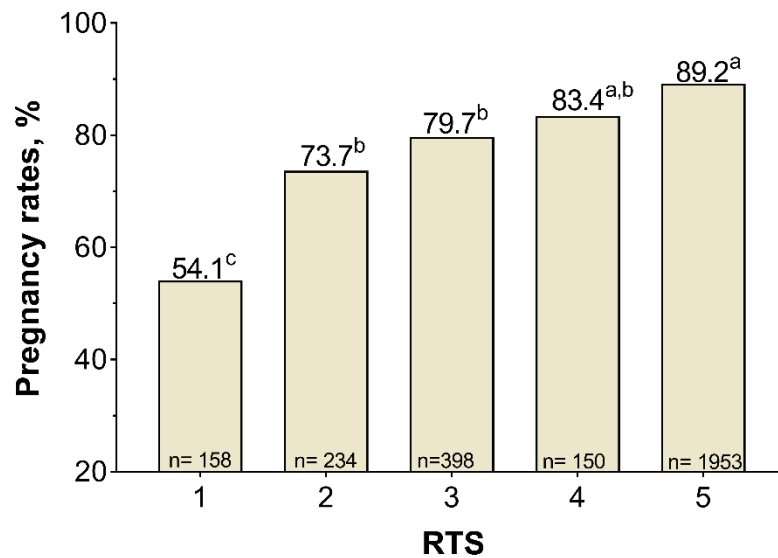
Figure 4. Pregnancy rates measured 30 days after the end of the breeding season according to the RTS measured prior to the breeding season in Florida operations. There was a significant effect of RTS class on pregnancy rates ($P < 0.001$). Pregnancy rate of RTS5 heifers was greater than that on RTS classes 1 to 3 ($P < 0.05$), but similar to the RTS4.

Interpretation: only heifers that presented RTS3 and above achieved pregnancy rates of 80% and above, at the end of the breeding season. RTS1 heifers achieved very low pregnancy rates.