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What a multibreed herd taught us about the influence of *B. indicus* genetics on dam reproduction and calf weaning weight

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University of Florida Brahman Cattle

UF | ANIMAL SCIENCES

Florida Cattlemen's Association

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Reproduction

OXFORD

What a 31-yr multibreed herd taught us about the influence of *B. indicus* genetics on reproductive performance of cows

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Intermediate proportion of *B. indicus* genetics favors the productivity of crossbred beef cows reared in subtropical conditions

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Under review, Translational Animal Science

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The University of Florida multi-breed beef herd

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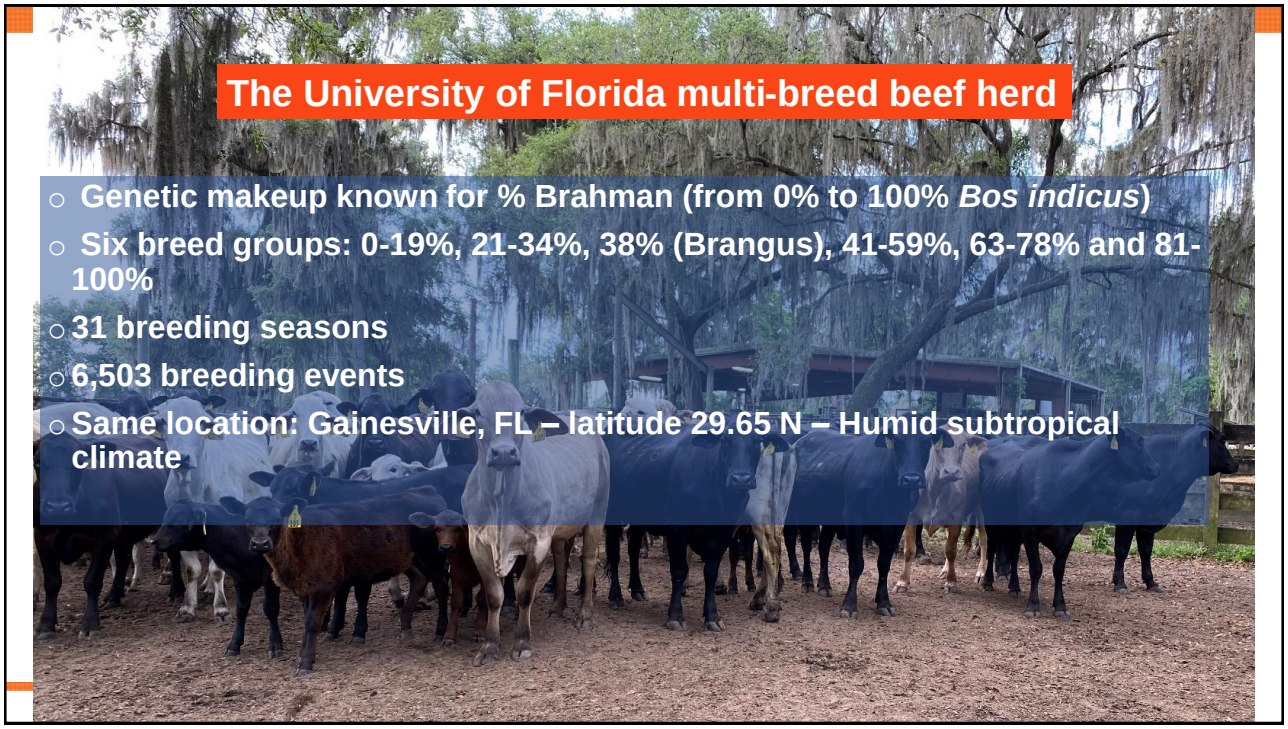
The University of Florida multi-breed beef herd
Genetic makeup known for % Brahman (from 0% to 100% *Bos indicus*)
Six breed groups: 0-19%, 21-34%, 38% (Brangus), 41-59%, 63-78% and 81-100%
31 breeding seasons
6,503 breeding events
Same location: Gainesville, FL – latitude 29.65 N – Humid subtropical climate

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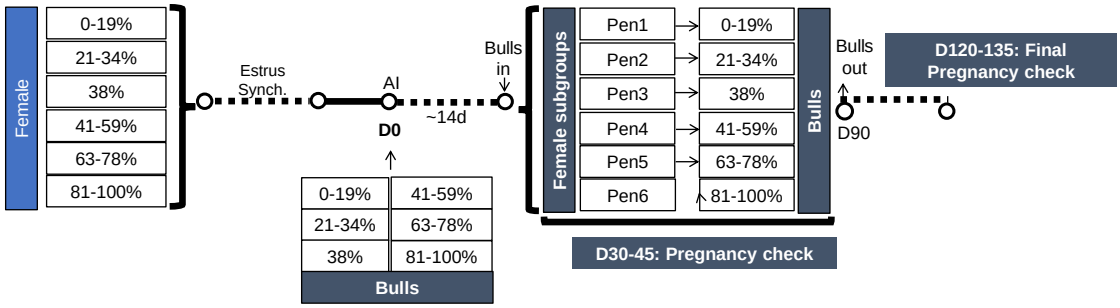
Reproductive management

- Diallel crossbreeding scheme



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Productivity of a cow-calf operation

$$Productivity = \frac{Pounds\ of\ calf\ weaned}{Number\ of\ cows\ exposed}$$

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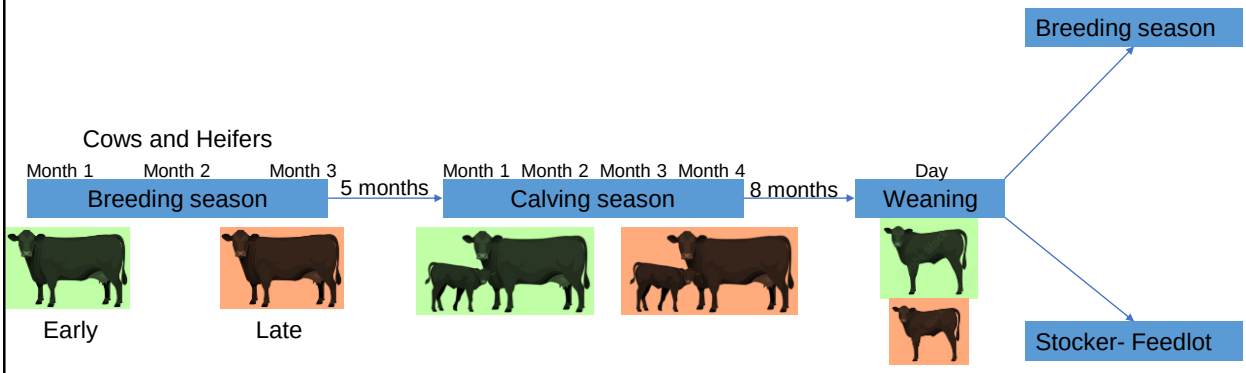
Calendar of activities in a cow-calf operation system



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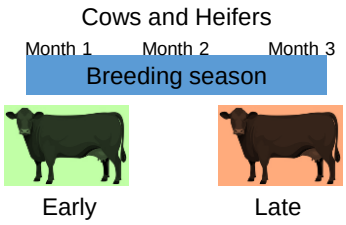
Performance in the breeding season



- Response to estrous synchronization protocol
- Pregnancy by artificial insemination
- Pregnancy at the end of the breeding season

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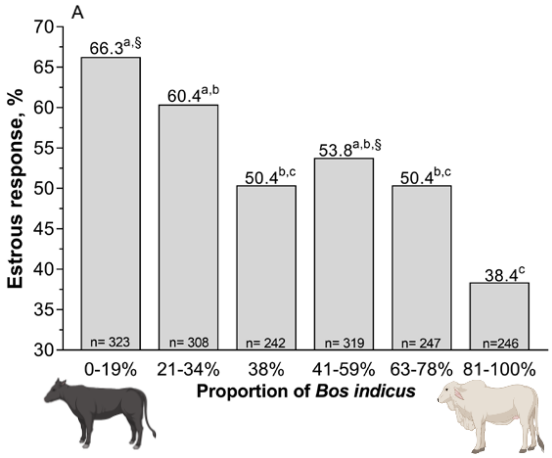
Probability of estrus response to synchronization protocol decreases as the *Bos indicus* proportion increases



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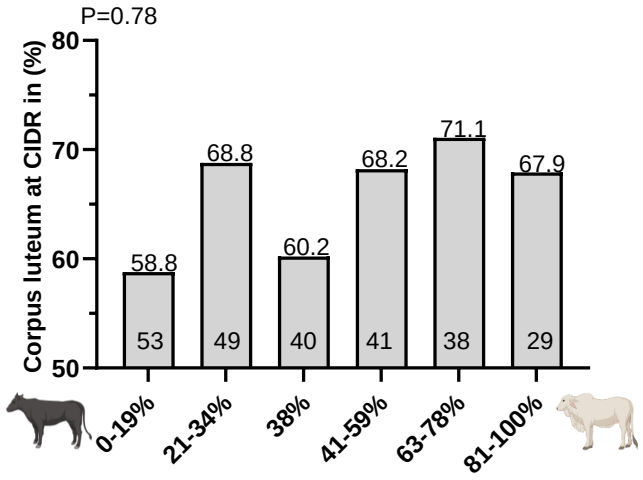
Cyclicity at the beginning of the synchronization protocol was similar across *Bos indicus* proportions



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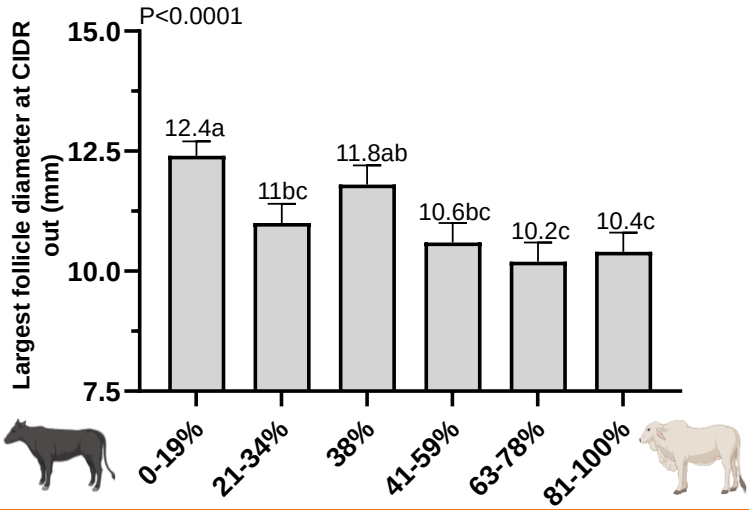
The diameter of the largest follicle at CIDR removal decreases when the *Bos indicus* proportion increases



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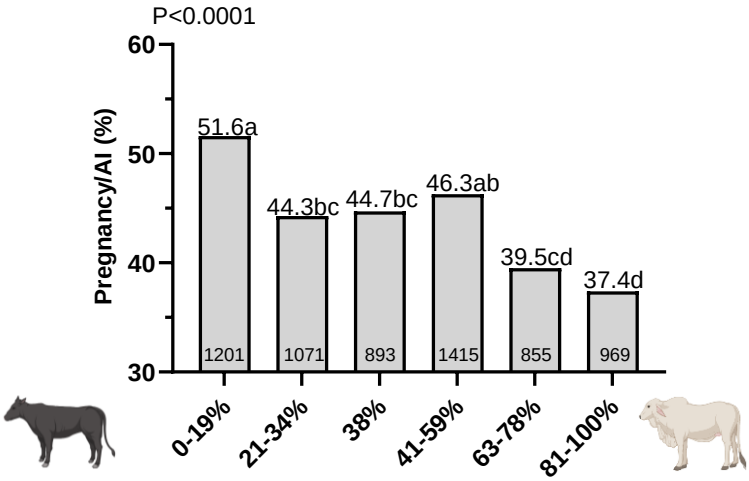
Pregnancy by AI is negatively associated with the proportion of *Bos indicus*



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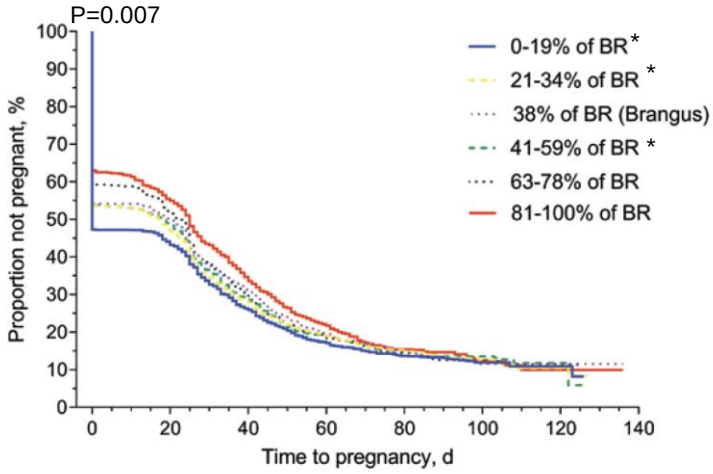
Cows with greater proportion of *Bos indicus* take longer to get pregnant in the breeding season



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Performance in the calving season

- Average days to calving in the calving season
- Gestation length

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The average days to calving in the calving season was longer in cows with greater proportion of *Bos indicus*

Table 1. Association between the proportion of *Bos indicus* genetics of cows and rate of calving in the calving season.

Item	Proportion of *B. indicus* genetics (groups)						*P*-value
	0-19%	21-34%	38% (Brangus)	41-59%	63-78%	81-100%	
Females, no.	1,180	1,039	876	1,395	848	974	.
Rate of calving[1]							.
AHR (95% CI)[2]	1.69* (1.54-1.86)	1.49* (1.35-1.64)	1.44* (1.30-1.59)	1.48* (1.35-1.62)	1.39* (1.26-1.54)	1.0 (reference)	< 0.0001
Days to calving							
Mean ± SEM	52.3 ± 1.2	59.0 ± 1.4	57.6 ± 1.4	57.3 ± 1.1	60.3 ± 1.4	78.0 ± 1.6	.
Median (95% CI)	38 (36-41)	47 (42-50)	48 (44-51)	47 (45-49)	50 (47-53)	68 (64-71)	.

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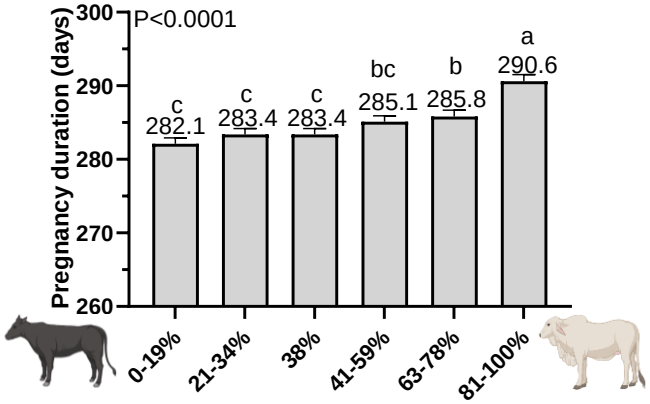
The average pregnancy duration is longer in cows with greater proportion of *Bos indicus*



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Performance at weaning

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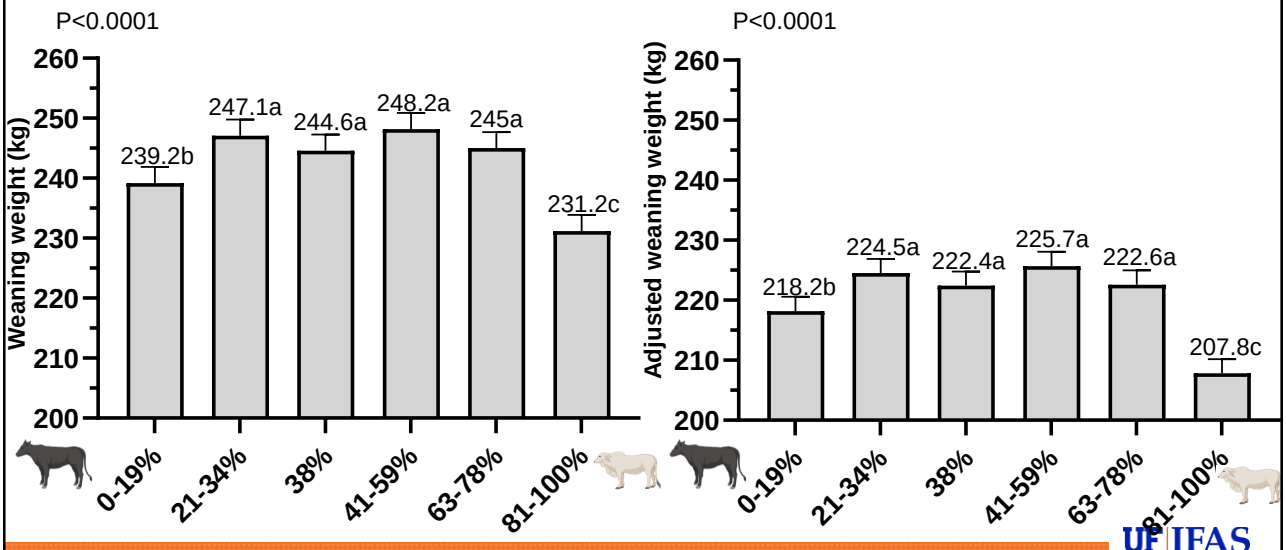
Weaning weight is lighter when the proportion of *Bos indicus* increases



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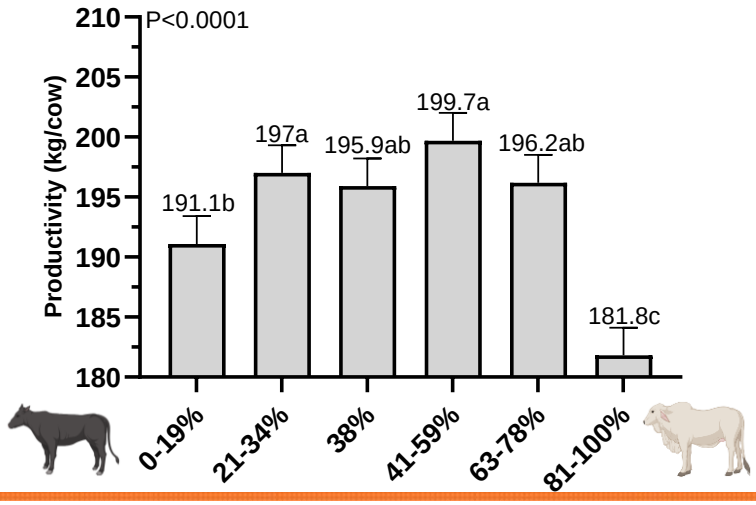
Productivity of a cow-calf operation

$$Productivity = \frac{Pounds\ of\ calf\ weaned}{Number\ of\ cows\ exposed}$$



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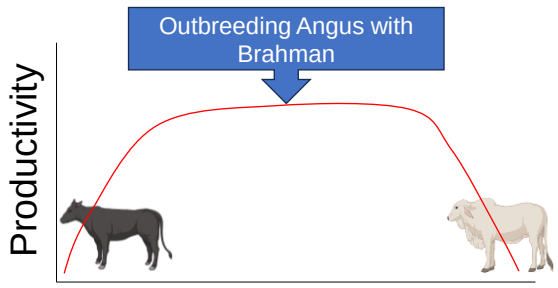
Conclusions

- Greater Brahman (*Bos indicus*) genetics = less estrus to protocol = lower P/AI + longer gestation = longer days to calving.



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