## Reproduction - Impact of Estrous Synchronization and AI on Cowherd Performance Over Time

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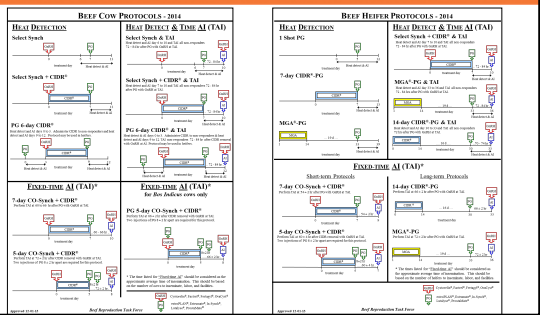
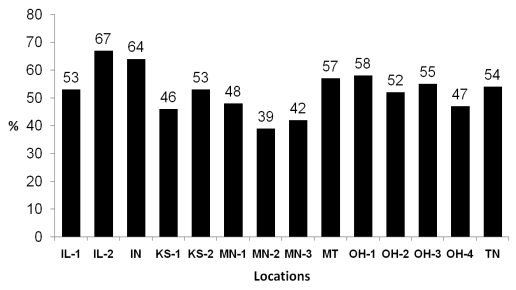
## We know how to synchronize cows!

## Estrous Synchronization and AI in Beef Cattle



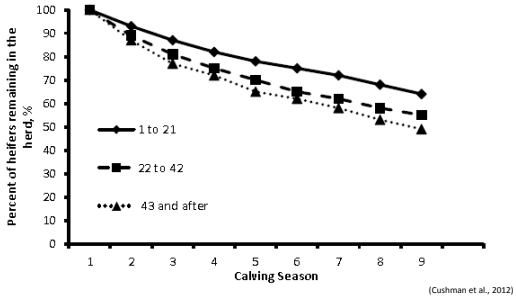

## Location/Herd Effects




## UF-NFREC Case Study

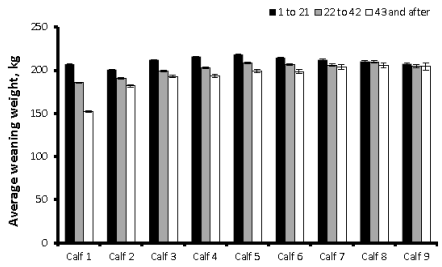

## Pregnancy has 4 times greater economic impact than any other production trait!

## Influence of Calving Period on Reproductive Longevity




(Cushman et al., 2012)

## Influence of Calving Period on Weaning Weights




(Cushman et al., 2012)

## Expectations for Every NFREC Female in the Herd

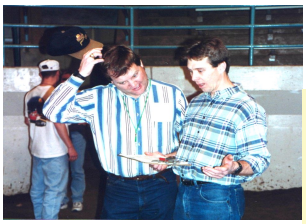
- Must calve by 24 months of age
- Cow must have a calf every 365 days
- Cow must calve without assistance
- Cow must provide sufficient resources for the calf to reach it's genetic potential
- Calf must be genetically capable to perform
- Cows must maintain their body condition score for my conditions
- Must not be crazy (disposition)

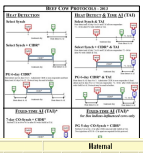
## Primary Reasons for Choosing Not to ES/AI

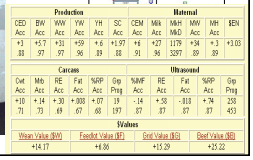
**Too many hassle factors!!!**

## Primary Reasons for Choosing Not to ES/AI

Complicated protocols and sire selection







## Primary Reasons for Choosing Not to ES/AI

Reliable facilities

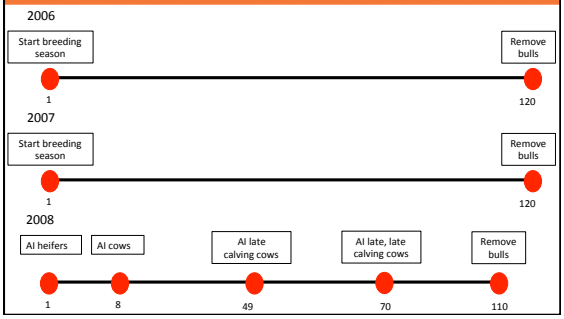
## PRIMARY REASONS FOR CHOOSING NOT TO ES/AI

Labor for AI and administering products

## PRIMARY REASONS FOR CHOOSING NOT TO ES/AI

TIME!


## UF-NFREC CASE STUDY

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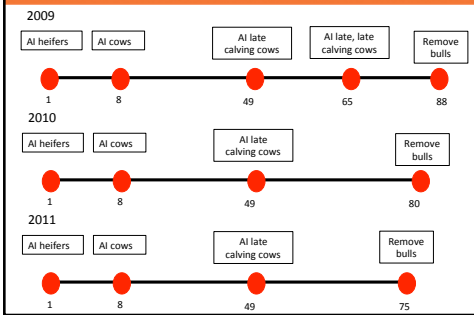


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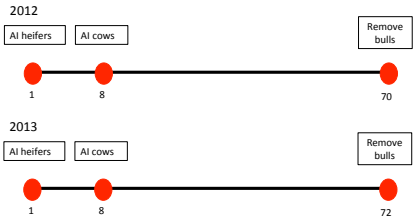
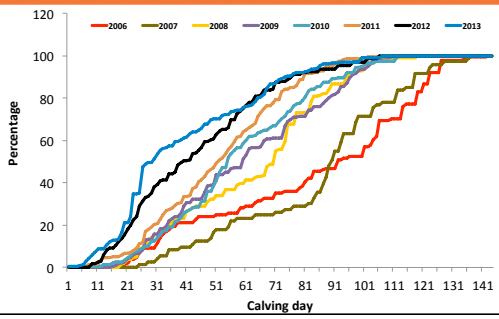



## UF-NFREC CASE STUDY



## UF-NFREC Case Study

Breeding season pregnancy rates:

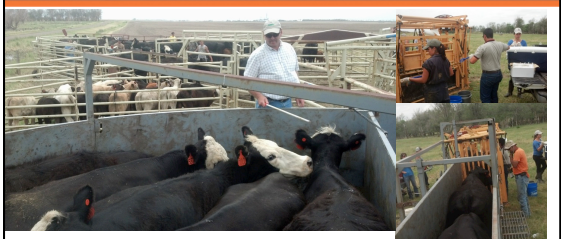
| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|
| PR | 81% | 86% | 84% | 86% | 82% | 94% | 92% | 93% |
| Mean calving day | 79.2 | 80.9 | 59.2 | 56.2 | 53.7 | 47.2 | 39.5 | 38.7 |
| BS length | 120 | 120 | 110 | 88 | 80 | 75 | 70 | 72 |

## UF-NFREC Case Study

Change in calf value:

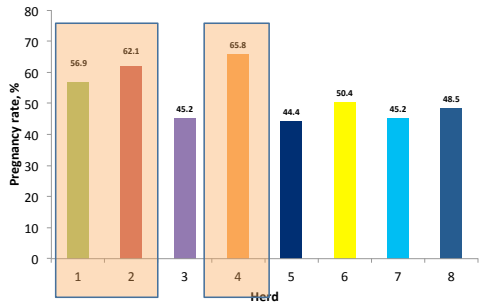
| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|
| Mean calving day | 79.2 | 80.9 | 59.2 | 56.2 | 53.7 | 47.2 | 39.5 | 38.7 |
| Difference from 2006/2007 | 0 | 0 | 21.7 | 24.7 | 27.2 | 33.7 | 41.4 | 42.2 |
| Per calf increase in value | 0 | 0 | $87 | $99 | $109 | $135 | $166 | $169 |
| Herd increase in value | 0 | 0 | $19,100 | $29,700 | $32,700 | $40,500 | $49,800 | $50,700 |

## 2nd Experiment Case Study

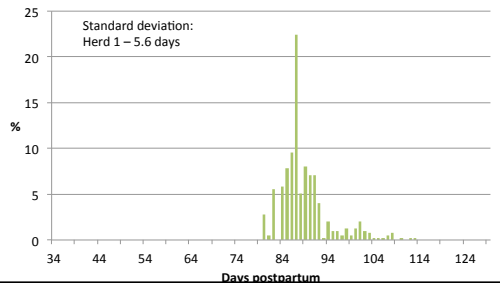


- 1,700 cows on 7 operations

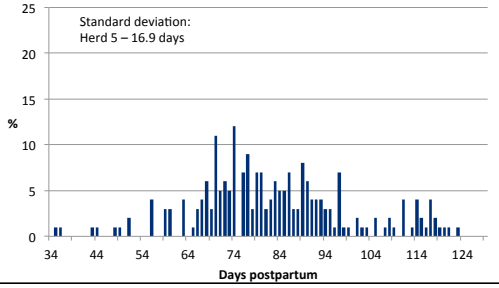
## Pregnancy Rates by Herds




## Distribution of Days Postpartum – Herd 1

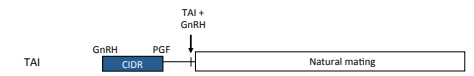



## Distribution of Days Postpartum – Herd 5



## Economics of Implementing TAI Program

## Impact of Fixed-Time AI on Calving and Weaning




(Rodgers et al., 2011)

## Impact of Fixed-Time AI on Calving and Weaning

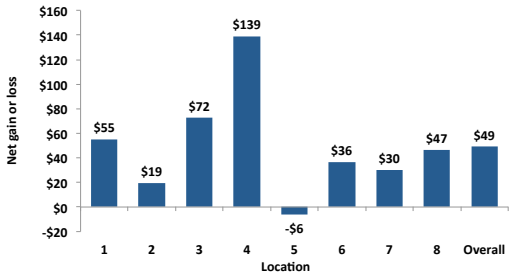
| | Treatment | |
|---|---|---|
| Item | Control | TAI |
| No. of cows | 615 | 582 |
| Weaning rate, % | 78 | 84 |
| Weaning weight, lb | 387 ± 8[a] | 425 ± 8[b] |

[ab] Means within row differ (P < 0.01)

38 lbs

(Rodgers et al., 2012)

## Gain or Loss per Cow Exposed to TAI



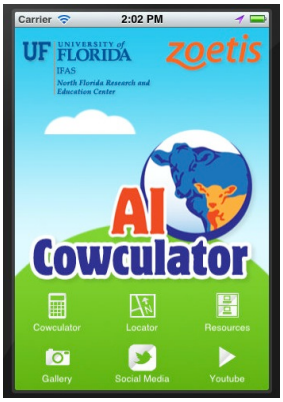

(Rodgers et al., 2011)

## Change in Value Based on Herd Sire Costs

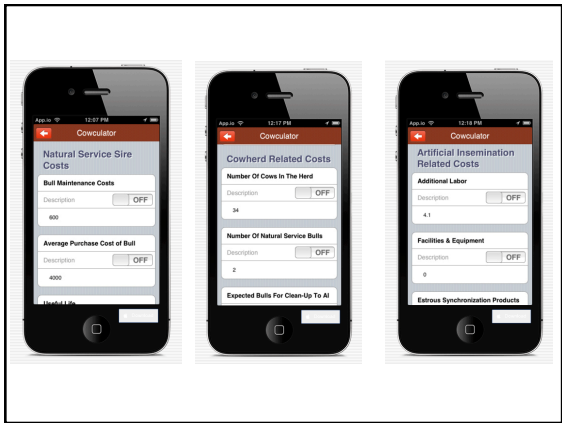
| | Bull Value | | |
|---|---|---|---|
| Item | $3,000 | $6,000 | $10,000 |
| Increased returns (increased value of AI calves) | $97.22 | $97.22 | $97.22 |
| Decreased costs decreased costs of clean-up bulls) | $32.11 | $61.35 | $100.34 |
| Decreased returns (Attributed to fewer clean-up bulls included in decreased costs calculation) | $0.00 | $0.00 | $0.00 |
| Increased costs (additional labor, semen, AI supplies, etc.) | $44.60 | $44.60 | $44.60 |
| Gain per cow exposed to AI | $84.73 | $113.97 | $152.97 |
| Gain per 34 head operation | $2,881 | $3,875 | $5,201 |
| Gain per 100 head operation | $7,446 | $9,434 | $12,086 |

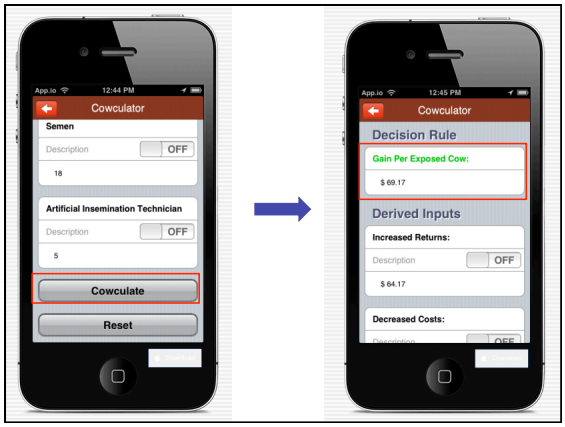
AI Cowculator

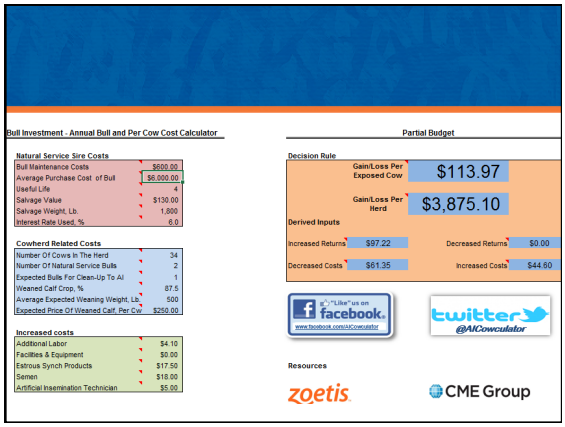
**Google Play Store**
**or**
**Apple iTunes**






THANK YOU!