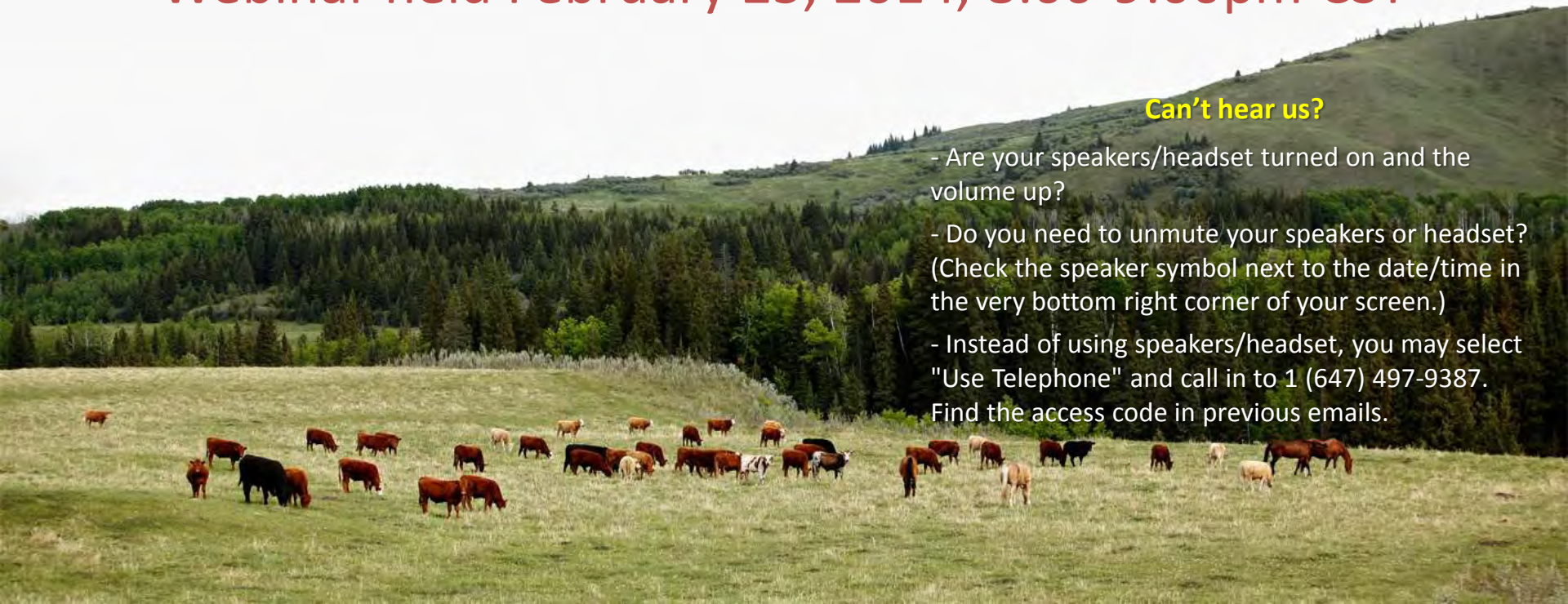


Boosting the Calf Crop Percentage in Your Beef Herd

Webinar held February 25, 2014, 8:00-9:00pm CST

Can't hear us?

- Are your speakers/headset turned on and the volume up?
- Do you need to unmute your speakers or headset? (Check the speaker symbol next to the date/time in the very bottom right corner of your screen.)
- Instead of using speakers/headset, you may select "Use Telephone" and call in to 1 (647) 497-9387. Find the access code in previous emails.



Tonight's Agenda

Welcome

- Tracy Sakatch

Investments in Beef Research in Canada

- Reynold Bergen, Ph.D.

Achieving Reproductive Goals and Capitalizing on Momentum

- John Campbell, Ph.D., DVM

Questions

- from the audience

Closing Remarks

- and where you can find more information



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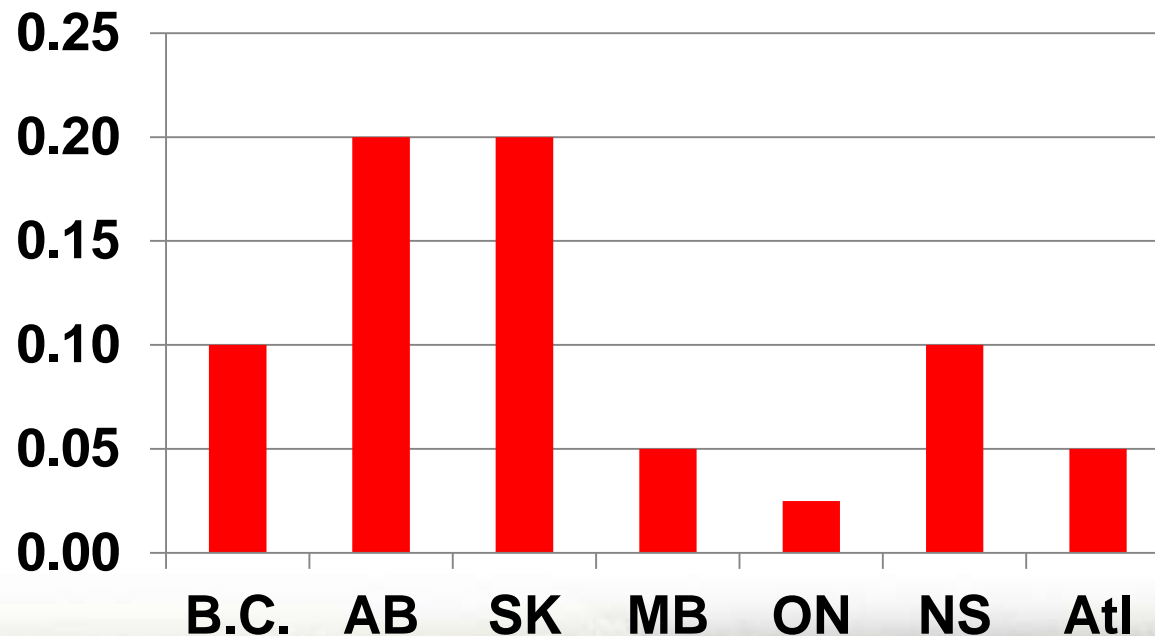
Beef Cattle Research Council

Feb. 25, 2014



Beef Cattle Research Council

- Funds research of priority to the Canadian beef cattle industry since the late 1990's
- Funded by 2.5 to 20% of the \$1.00 National Check-off
- Each \$ is leveraged to gain an additional \$6.00 in funds
- Eleven representatives appointed by provincial associations



Most producers pay a \$3 Check-off



Provincial Check-off

Provincial activities, including

- advocacy
- policy
- research
- marketing
- promotion
- etc.

CCA activities, like (inter)national

- advocacy
- trade
- legal
- policy
- etc.

E.g. R-CALF, COOL, CETA, TPP

National Check-off

Funds:

Canada Beef Inc.

- marketing
- promotion

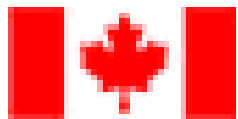
BCRC

- Research

NOT THE CCA



The Beef Science Cluster



Government
of Canada

Gouvernement
du Canada



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Achieving Reproductive Goals and Capitalizing on Reproductive Momentum

Dr. John Campbell

Dept. of Large Animal Clinical Sciences
Western College of Veterinary Medicine

Profitability Criteria for the Cow Calf Herd

- ▶ Calf Crop Percentage (Reproduction)
 - Number of calves weaned/cows exposed to the bull
 - ▶ Average weaning weight of calves
 - ▶ Selling Price of Calves (marketing)
 - ▶ Annual Cow Cost (Cost of Production)
- 

Profitability and Production

- Reproduction is 5X more important than Growth Rate
- Reproduction is 10X more important than Carcass Quality



Reproductive Goals

- ▶ High percentage of cows pregnant (95%)
- ▶ I want to “Front load” the breeding season (65% bred in first cycle)
 - Gives me heavier calves!
- ▶ Uniform calf crop
 - short breeding season
 - 42–45 days for heifers
 - 63 days for cows
- ▶ Breed heifers to calve as two year olds

Front Loading the Breeding Season: (65% Bred in 1st cycle)



*A calf gaining 2.5
lbs/day x 21
days x \$1.50/lb
= \$78.75
additional
revenue per calf*

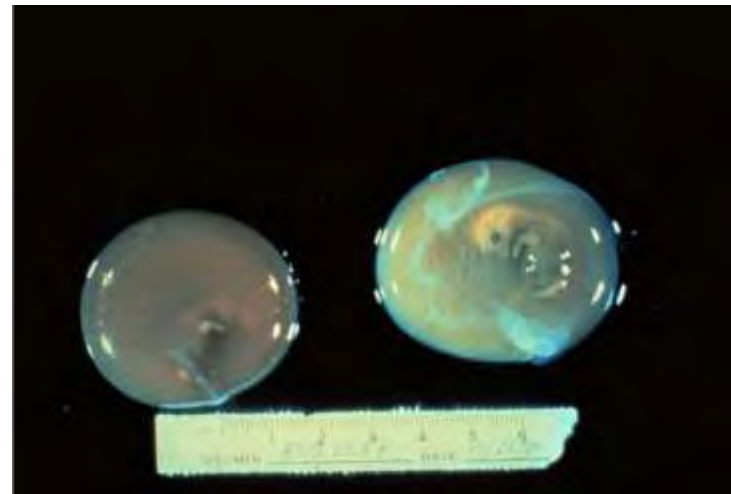
*Plus benefits of a uniform calf
crop!*

Reproductive Goals

- ▶ Good reproductive performance every year (low risk of reproductive losses)
 - Avoiding wrecks
 - Vaccination Program (BVD, IBR)
 - Prebreeding modified live vaccine
 - Avoiding diseases like Trich, Vibrio
 - Biosecurity: Maintain your herd's health status

Nature's Obstacles

- ▶ 60–70% likelihood of a calf being born from a single mating of a fertile bull and fertile heifer
 - This is the best we can expect!
 - Nature's limits on reproductive success
 - Most embryos are actually lost by day 14 and cow cycles again when expected



Nature's Obstacles

- ▶ Fixed gestation length (282 days)
 - Cows must conceive within 83 days of calving!! (365–282)
- ▶ Delay in first estrus due to suckling
 - Post-partum interval (PPI)
 - Suckled beef cows do not begin estrous cycles for 50–60 days post calving (if in good body condition!)
 - 1st calf heifers takes longer 80–100 days



Front Loading the Breeding Season

Calving Timing

- Cow calves early in calving season
- 1st 30 days

Anestrus

- Will have at least 50 days prior to breeding season
- Ensure good Body condition score

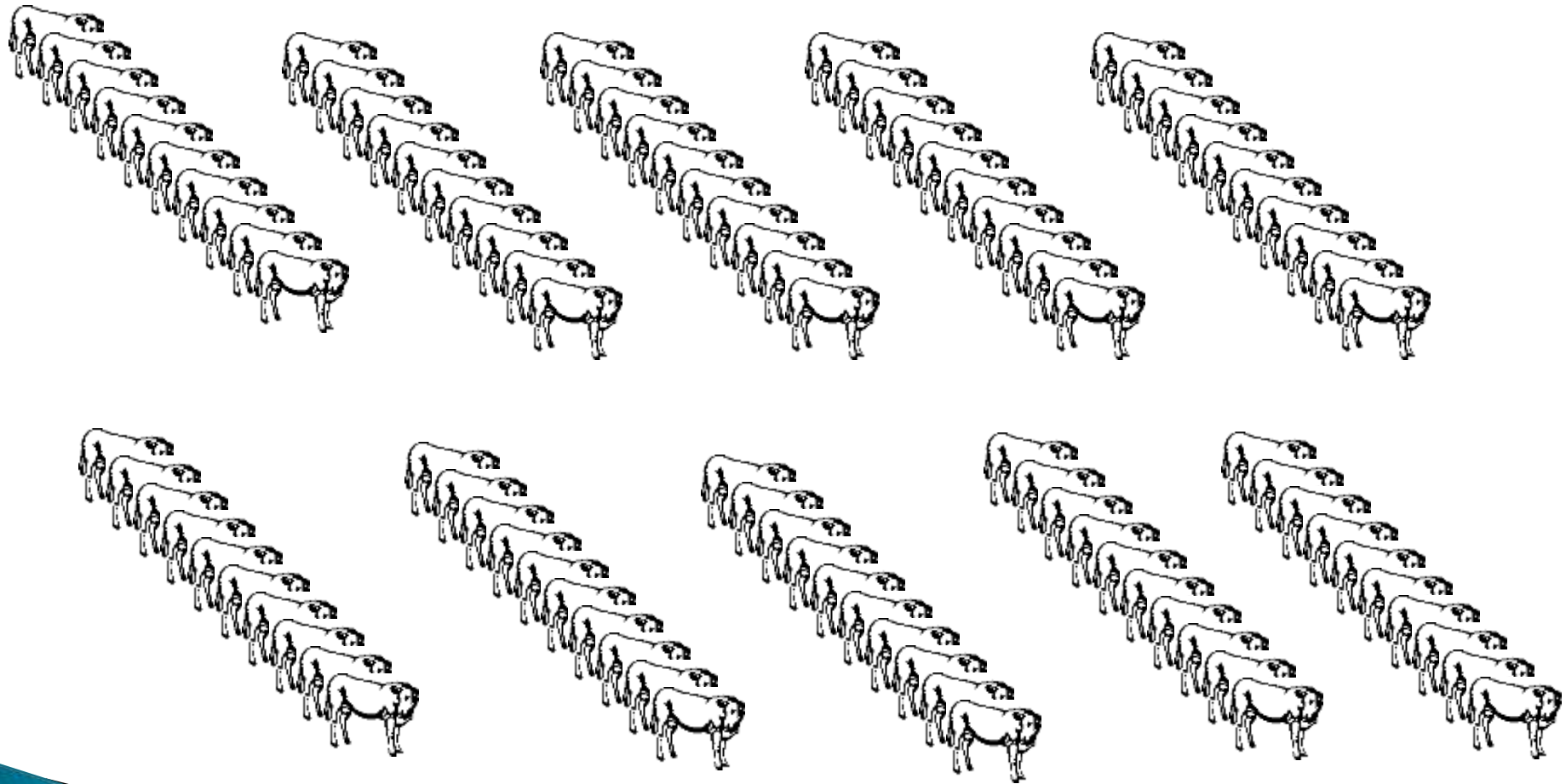
Breeding Season

- Cycling at start of breeding season
- 3 chances to get pregnant in 63 day season
- Ensure Fertile bull used

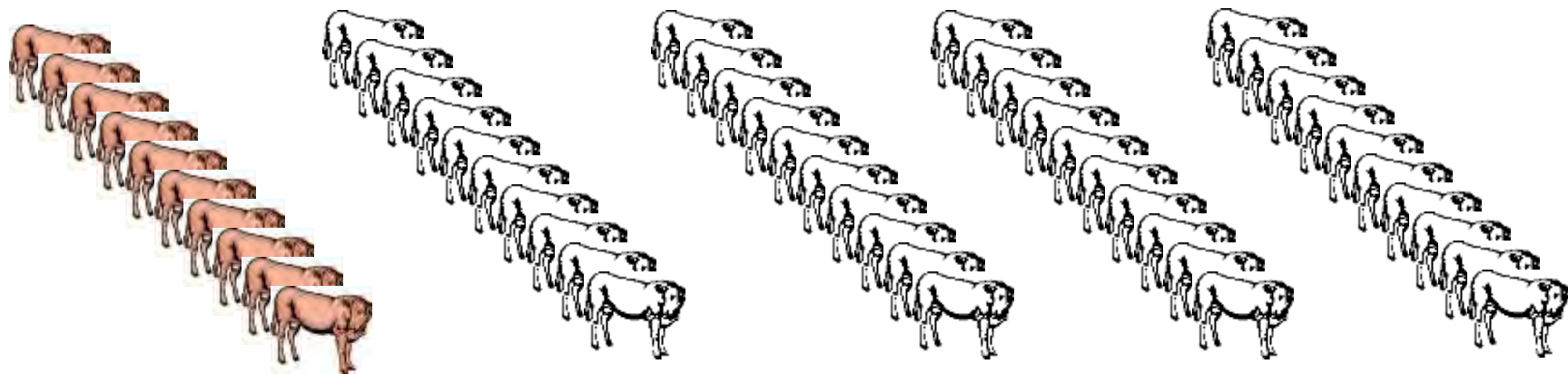
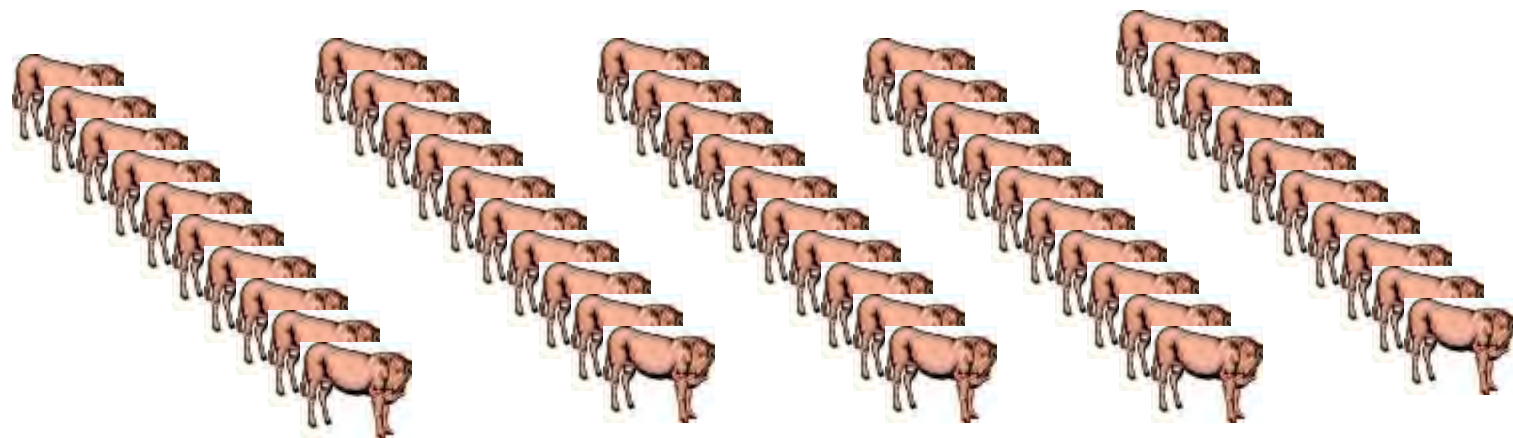
Preg Checking

- 95% Pregnancy Rate

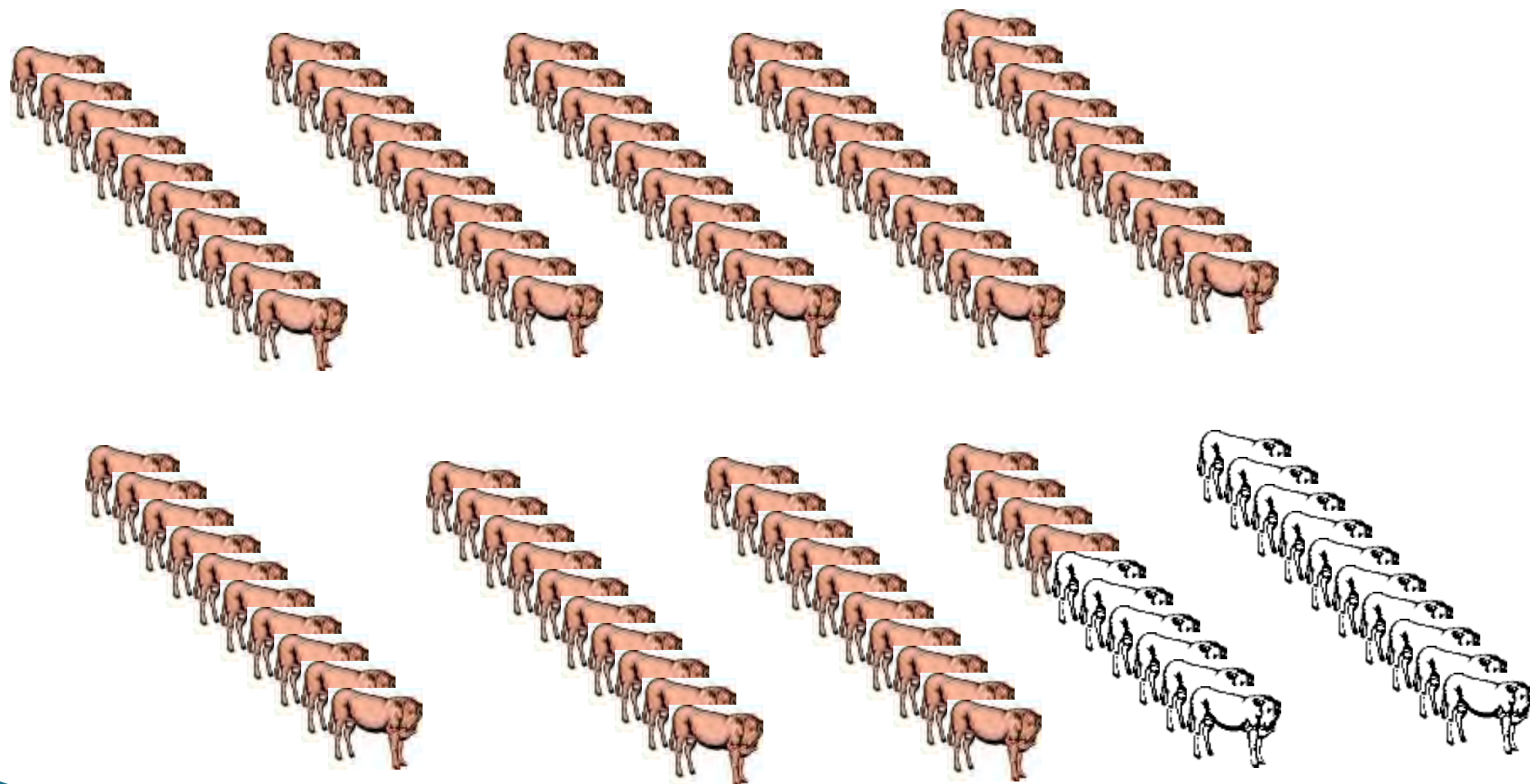
100 cows, 3 Heat cycles, Assuming a 60% Conception Rate



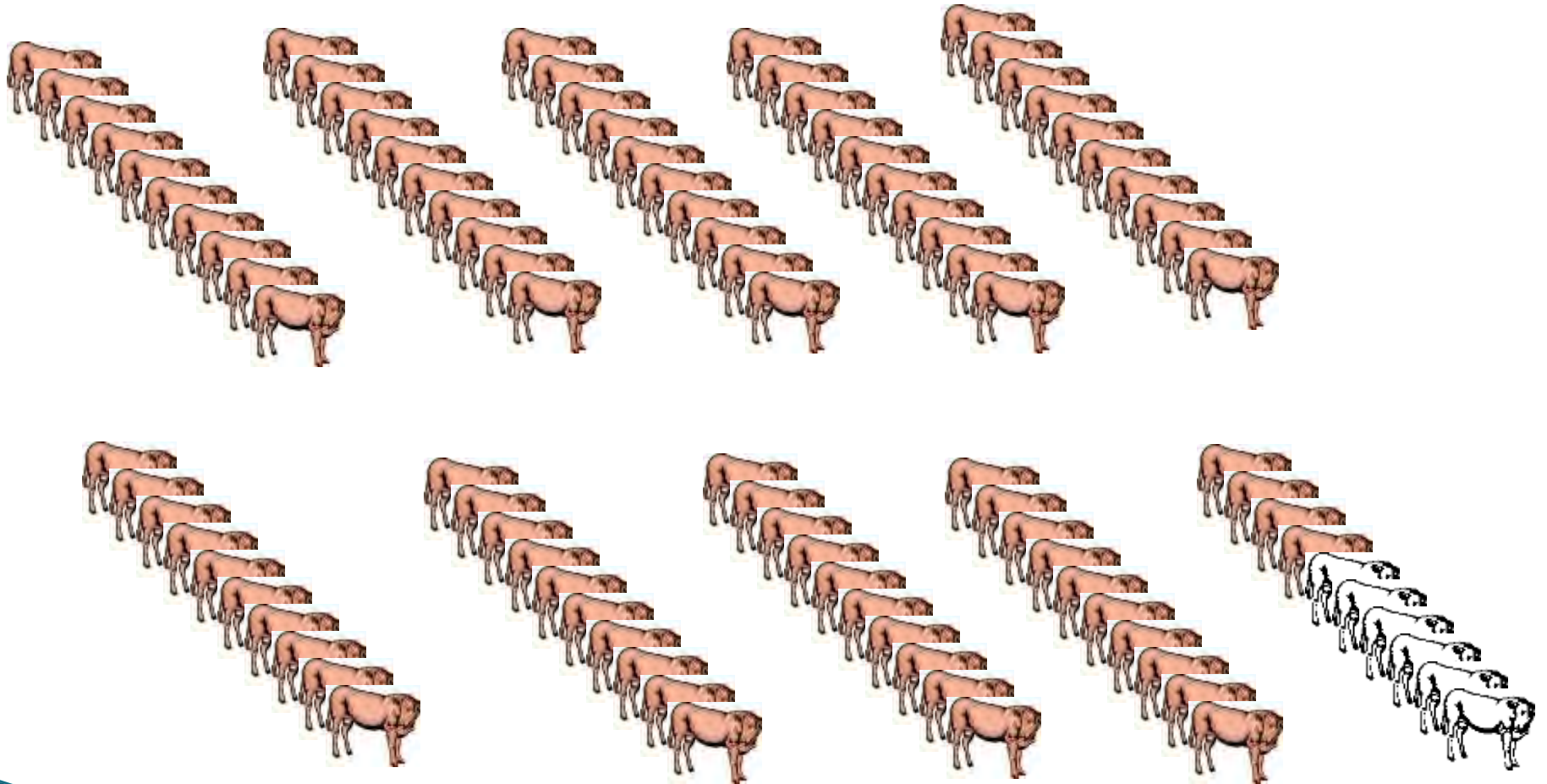
1st Heat Cycle: 60 Pregnant, 40 Open



2nd Heat Cycle: 84 Pregnant, 16 Open

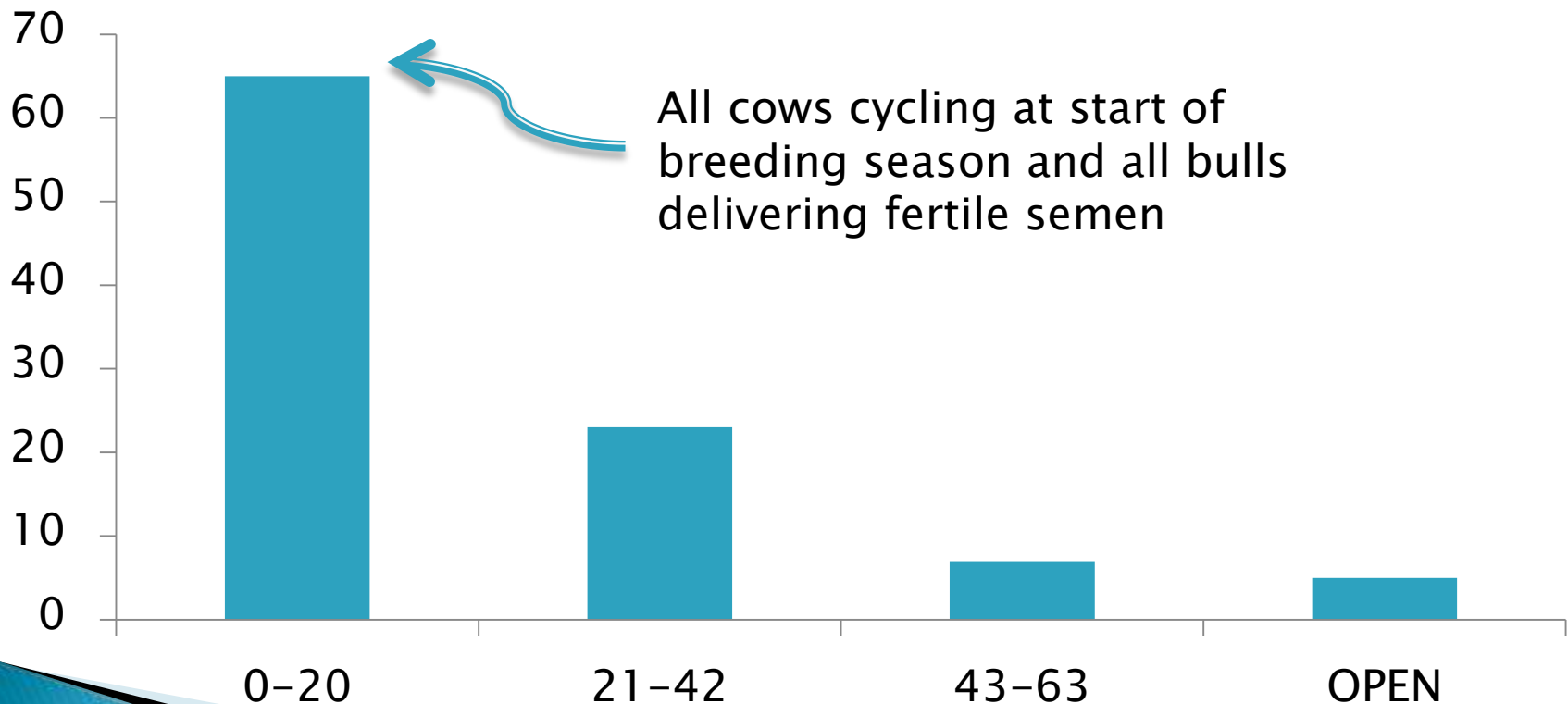


3rd Heat Cycle: 94 Pregnant, 6 Open = 94% Pregnant



Reproduction: What do we want? (The Best Case Scenario)

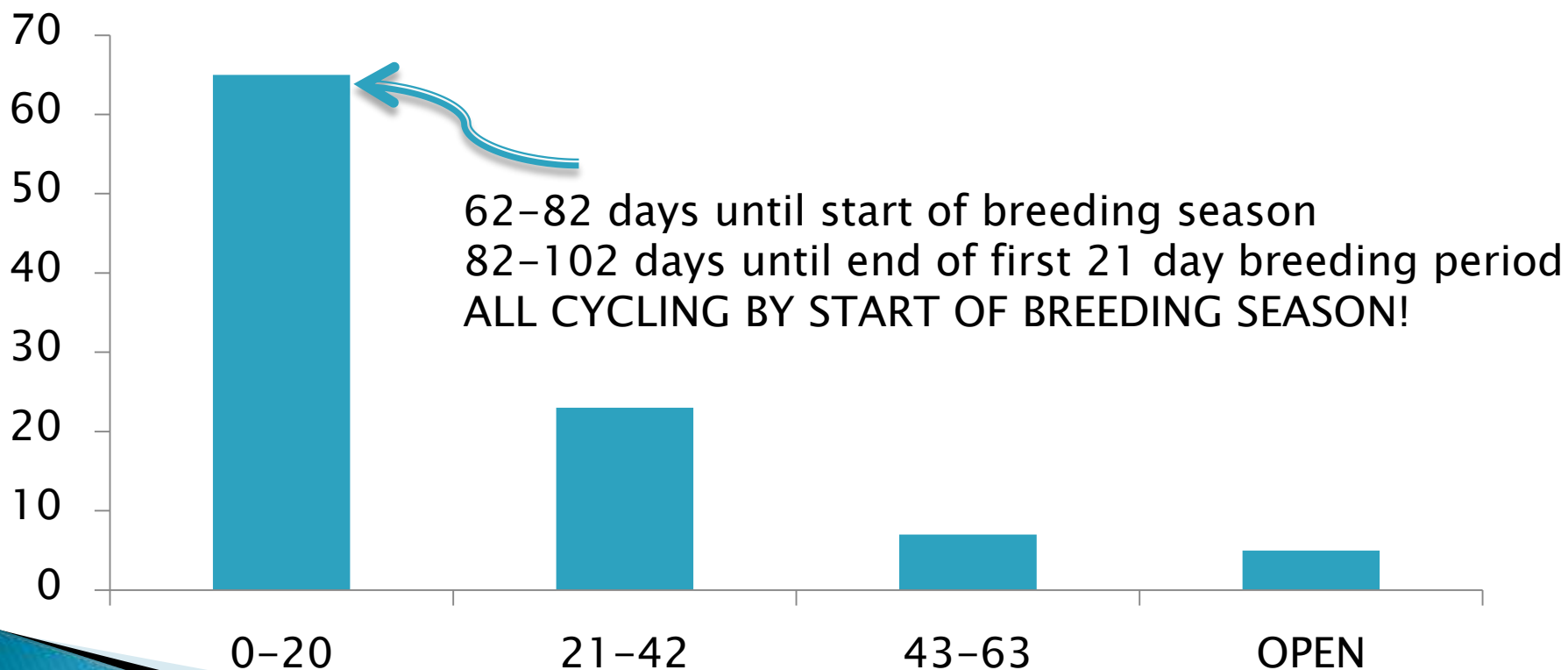
Calving Distribution



MOMENTUM IS IMPORTANT!!

(Dr. Bob Larson, KSU)

Calving Distribution



Front Loading the Breeding Season

100 cows, 3 Heat Cycles, Assuming a 60% Conception Rate



94%
Pregnancy
Rate

MOMENTUM IS IMPORTANT!!

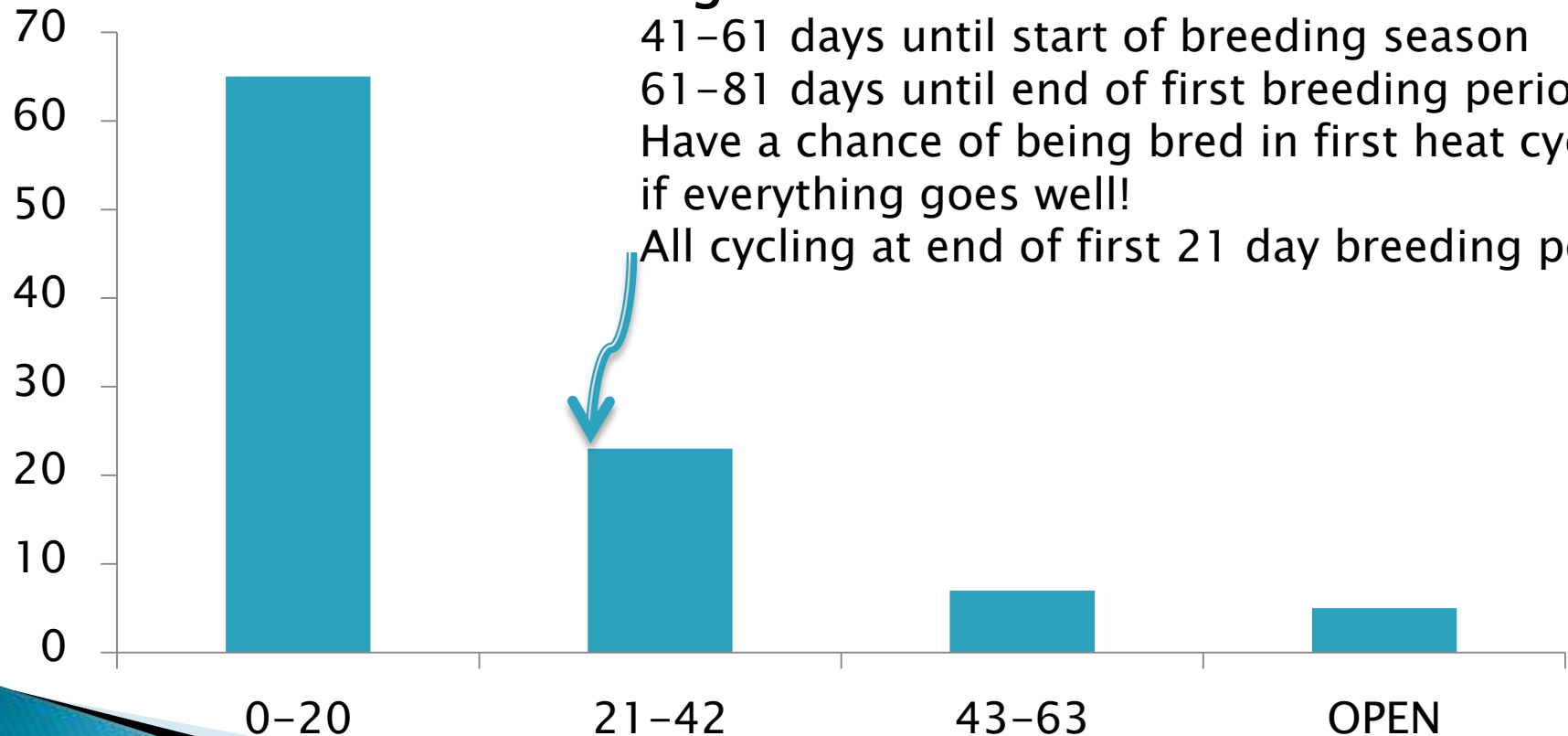
Calving Distribution

41–61 days until start of breeding season

61–81 days until end of first breeding period

Have a chance of being bred in first heat cycle
if everything goes well!

All cycling at end of first 21 day breeding period



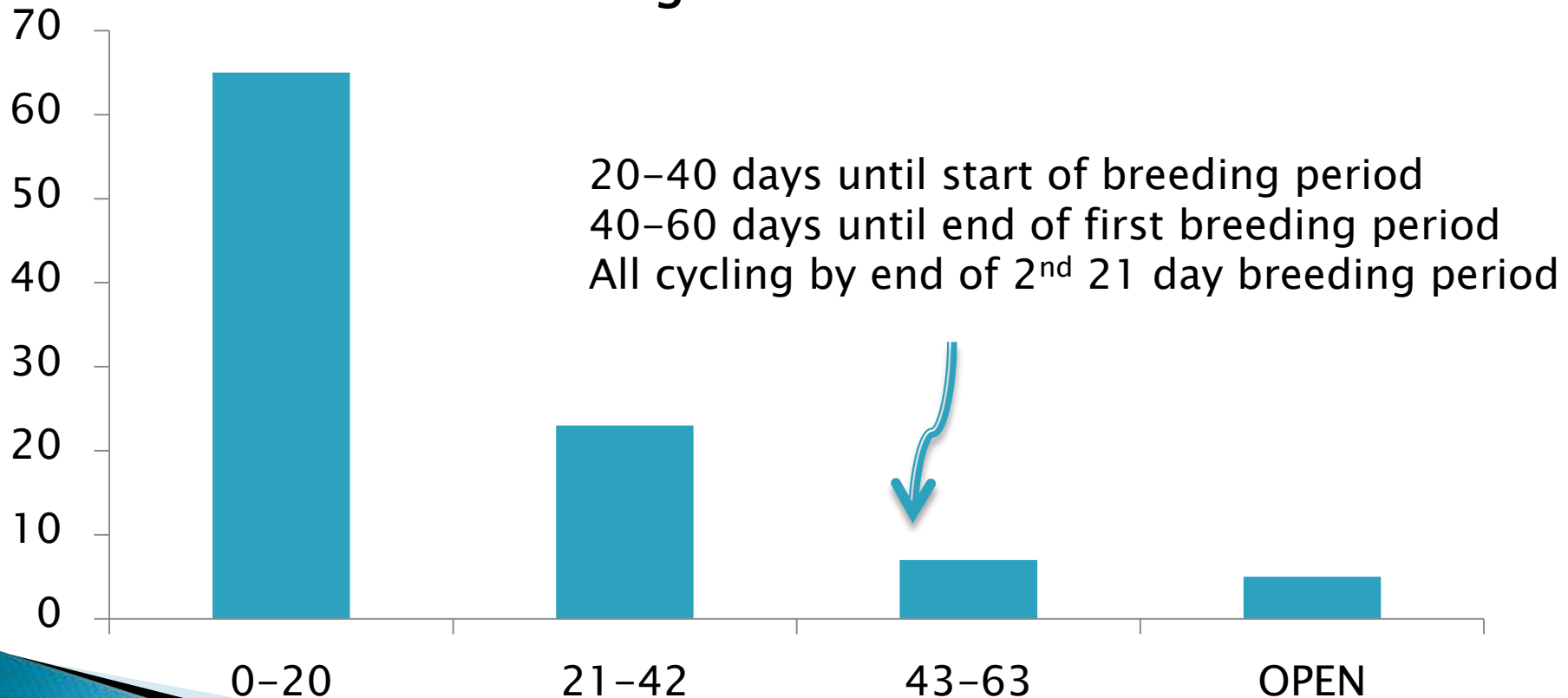
Front Loading the Breeding Season

100 cows (calving later in the calving season)
2 Heat Cycles, Assuming a 60% Conception Rate



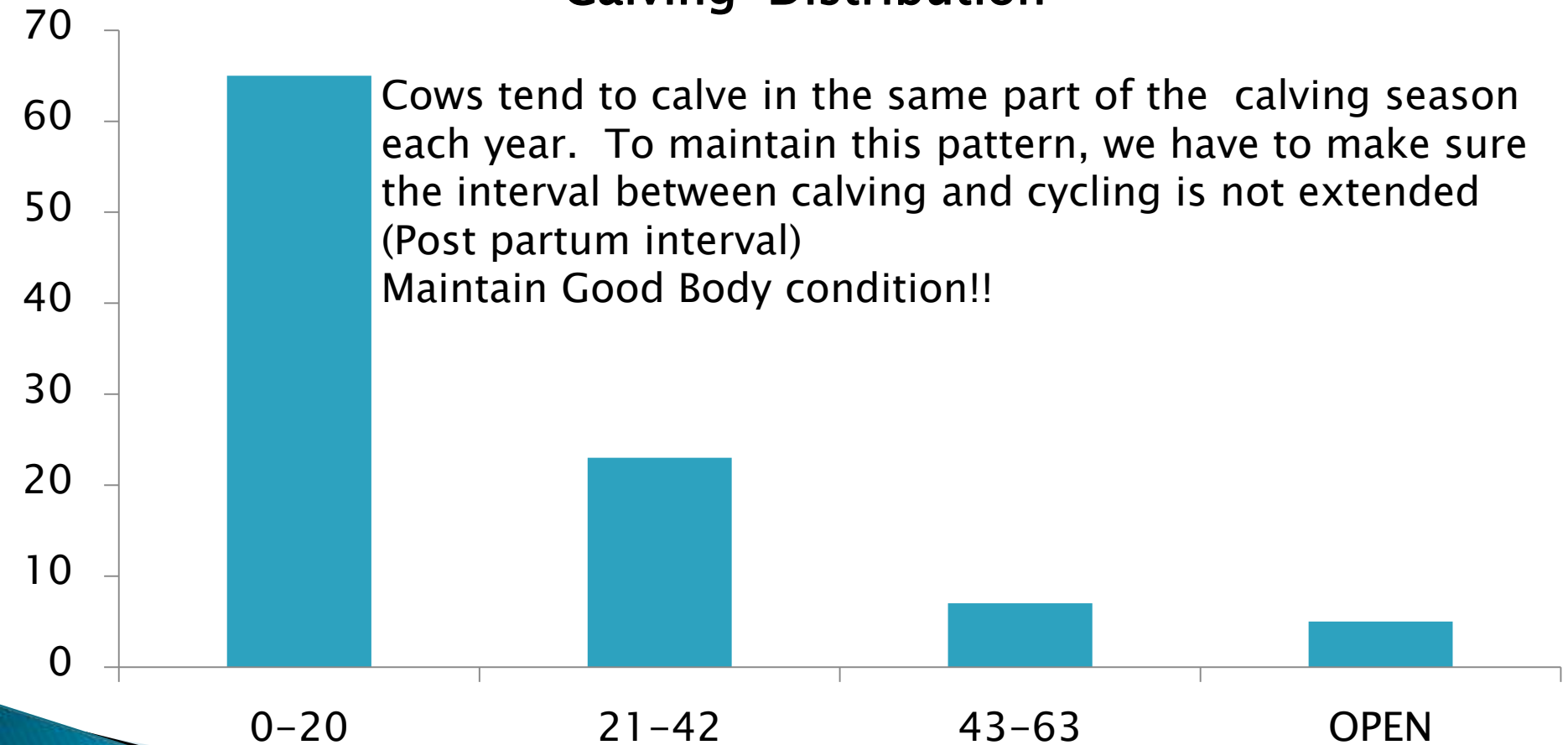
MOMENTUM IS IMPORTANT!!

Calving Distribution



MOMENTUM IS IMPORTANT!!


Calving Distribution



Poll Questions



TWO THINGS HAVE TO HAPPEN FOR A COW TO GET PREGNANT!

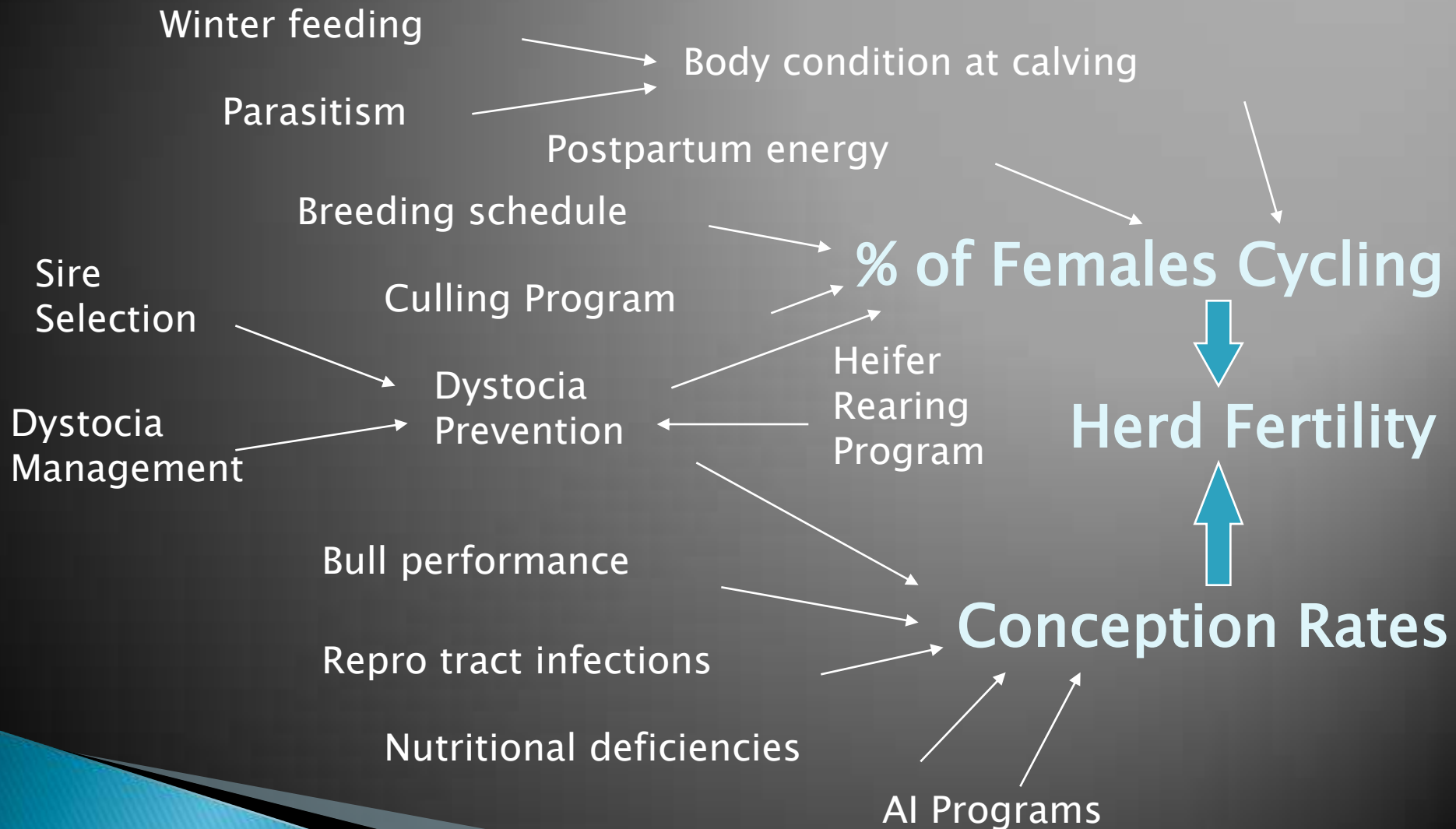
- ▶ 1) The Cow must have a heat cycle (be in estrus)
 - ▶ 2) The Cow must conceive (bred by fertile bull)
- 

Major categories of Risk Factors for Poor Conception Rates

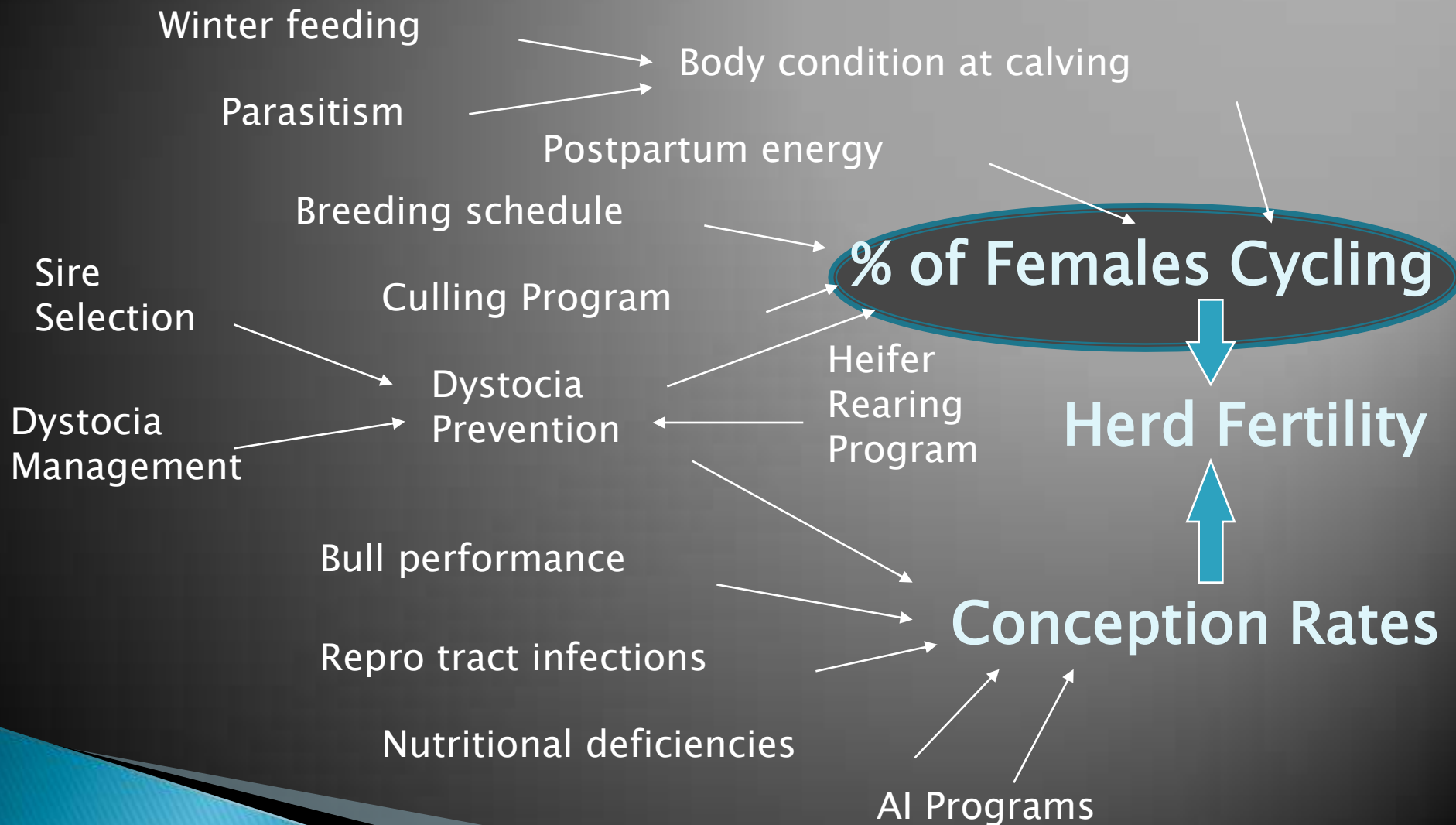
- ▶ Bull problems
 - Infertile bulls, injuries, not enough bulls
- ▶ Nutritional problems
 - Cows not coming into heat
- ▶ Infectious disease: failure to maintain pregnancy
 - Trichomoniasis, Vibrio, BVD, IBR, Neospora etc.



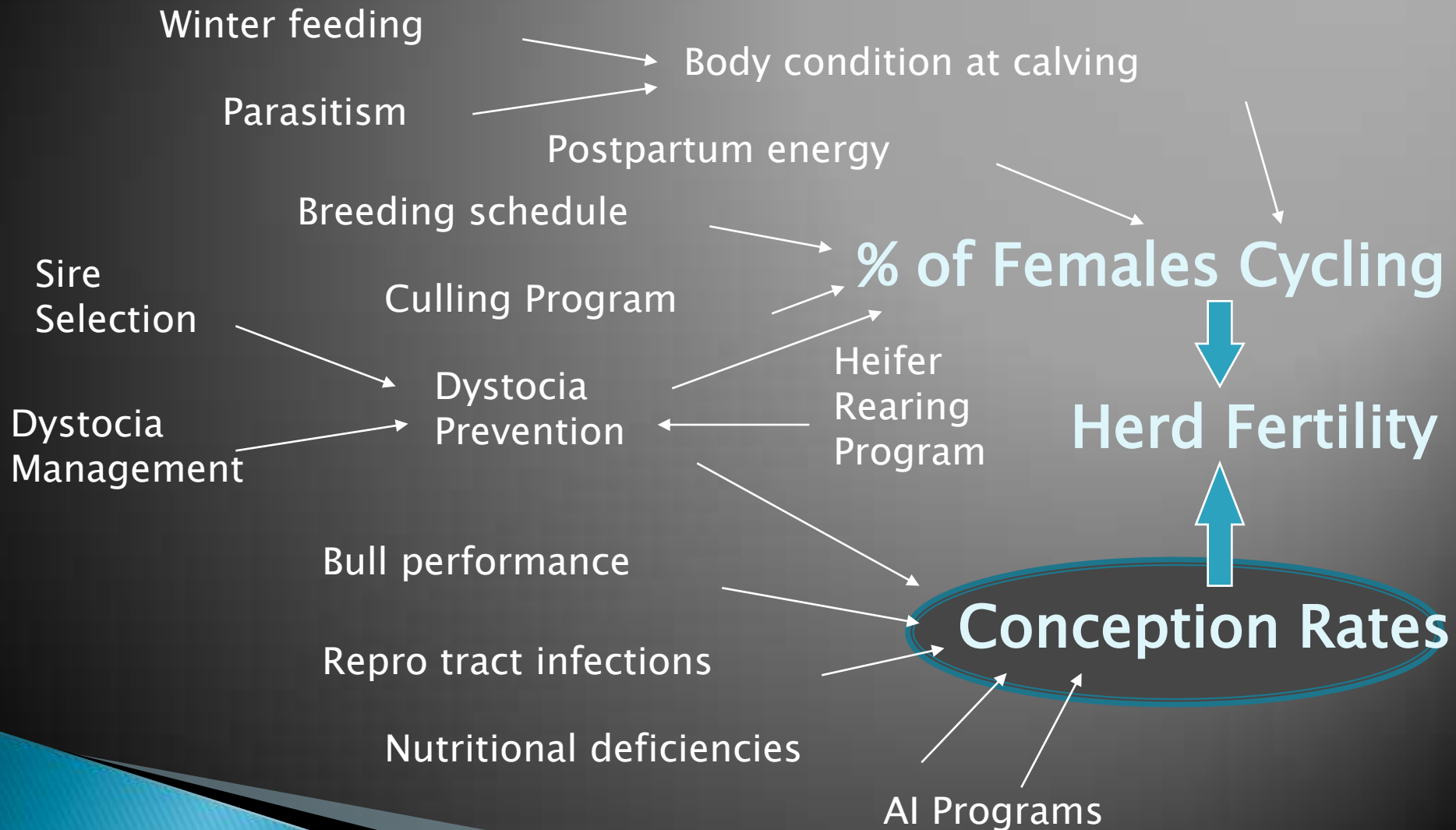
Risk Factors for Impaired Fertility



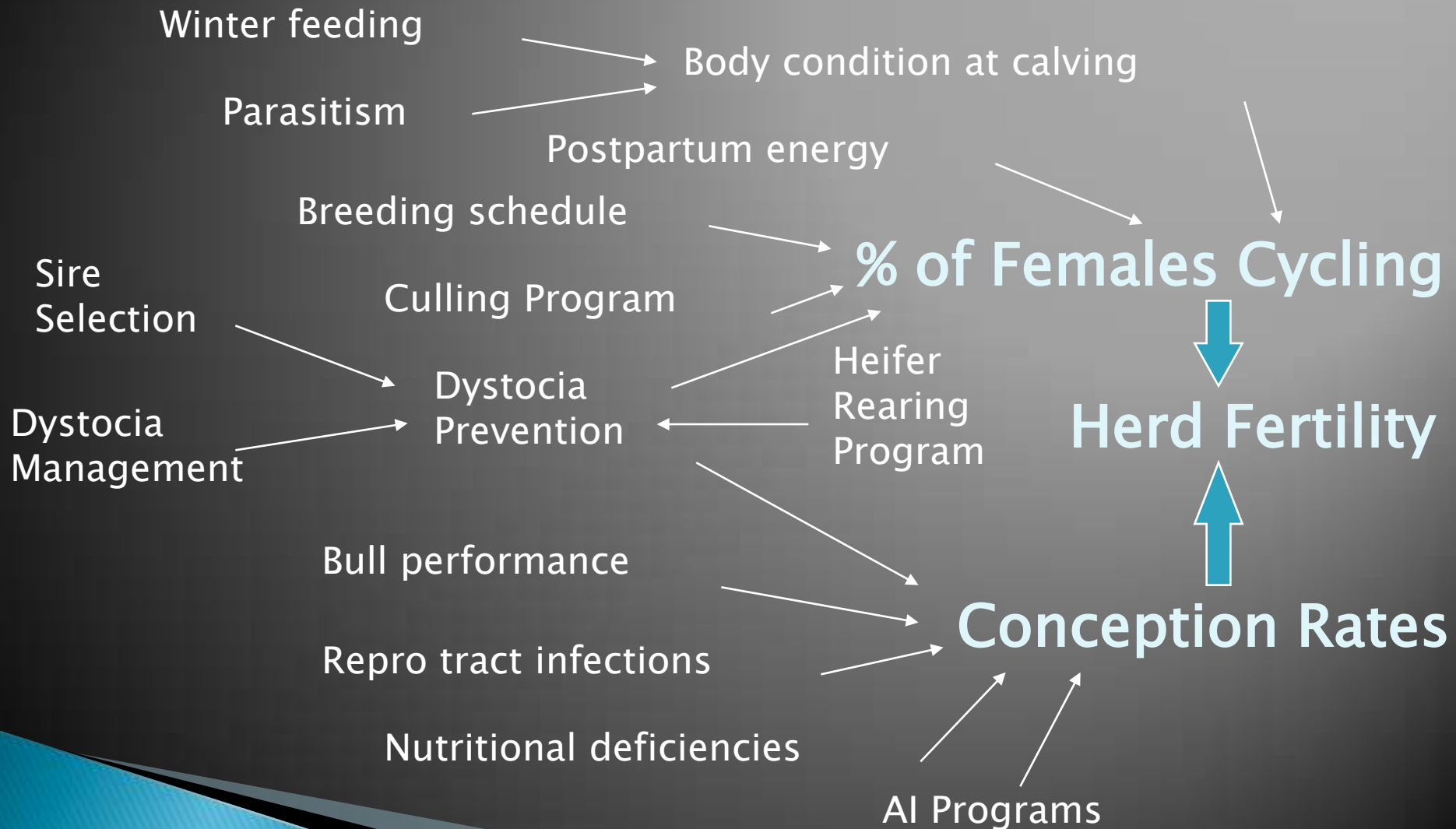
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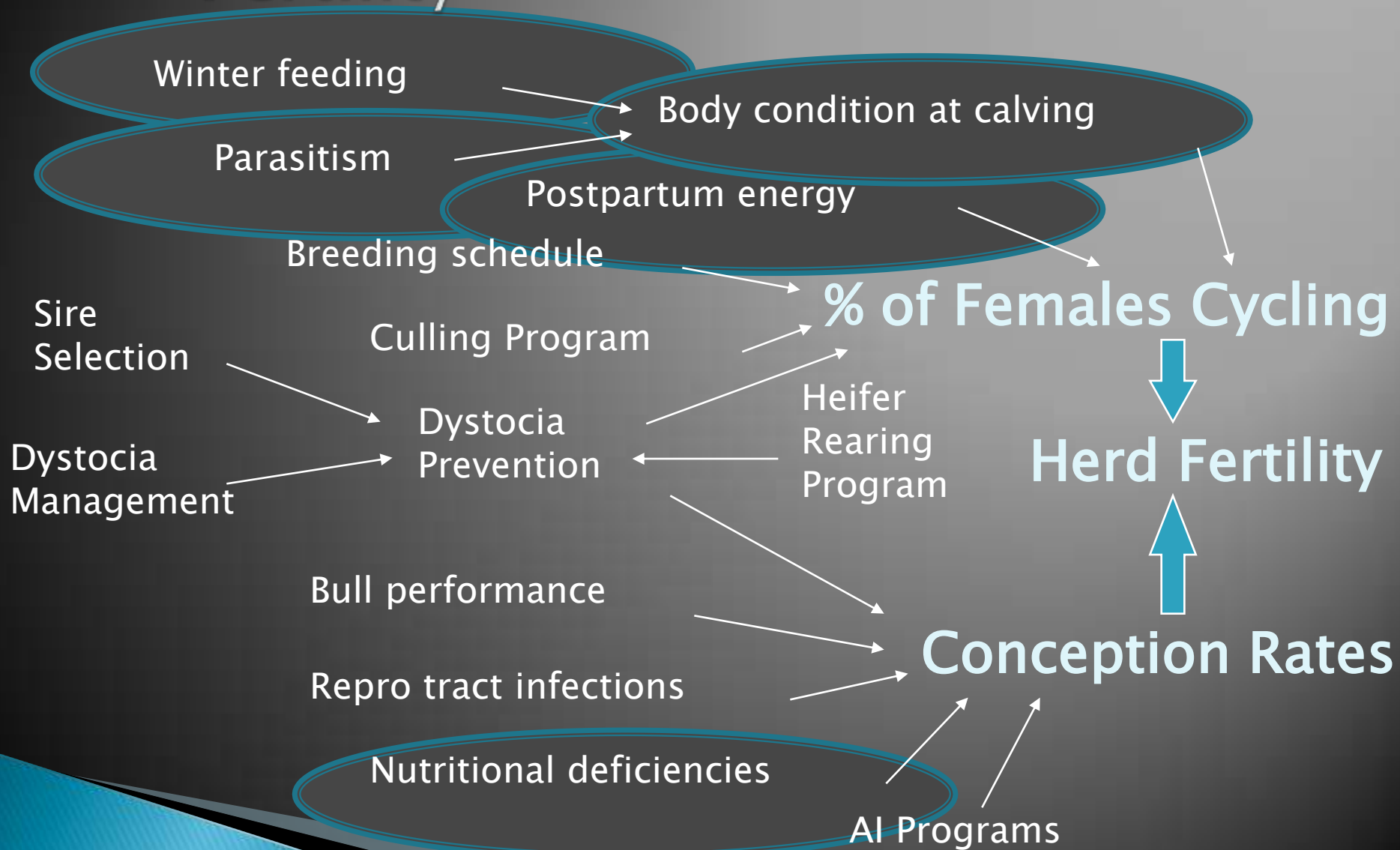
Risk Factors for Impaired Fertility



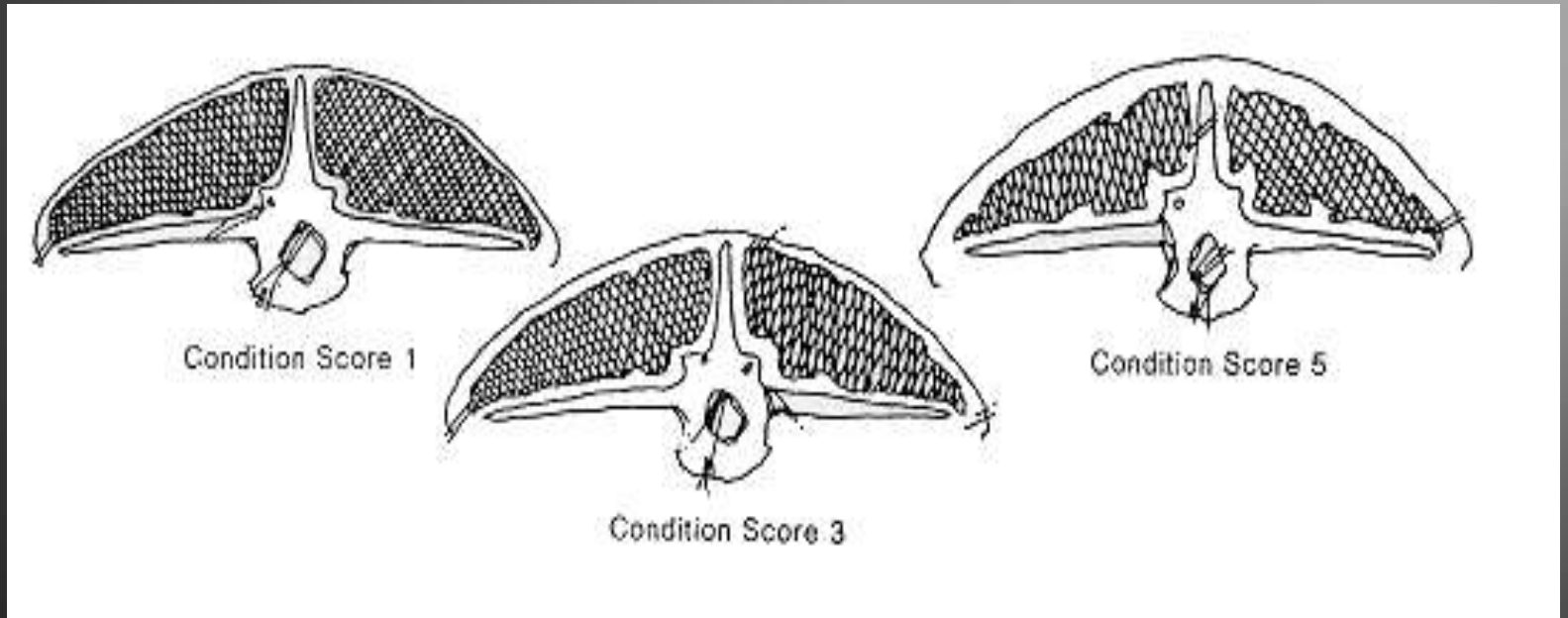
Risk Factors for Impaired Fertility



Risk Factors for Impaired Fertility



Body Condition Scores



Excel Community Pasture Study

- ▶ Cows with a body condition score of 2.5 or greater were twice as likely to be pregnant
- ▶ Cows that had above average weight gains on pasture were twice as likely to be pregnant





Cow attributes, herd management, and reproductive history events associated with the risk of nonpregnancy in cow-calf herds in Western Canada

C.L. Waldner^a, A. García Guerra

Department of Large Animal Clinical Sciences, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada

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ABSTRACT

To identify herd management and cow characteristics associated with the reproductive success of cow-calf herds in Western Canada, 33,391 beef cows were followed from the beginning of the breeding season in 2001 through pregnancy testing in 2002. Breeding management and cow-level risk factors such as age, body condition score (BCS), and previous reproductive history, were measured through a series of herd visits by project personnel and records maintained by the herd owner. Pregnancy status was measured in 205 herds in the fall of 2001 and again in 200 herds in the fall of 2002. Cows least likely to be pregnant in the fall of the year were 10 years old or older, exposed to a bull less than 84 days, had a BCS ≤ 5 of 9 at pregnancy testing, < 5 of 9 before calving, and lost condition between calving and the start of the breeding season, or had a prebreeding BCS < 5 of 9 with a loss of condition between breeding and pregnancy testing. Other factors identified that decreased the likelihood of pregnancy in at least one of the 2 years included being a heifer or being a cow exposed to breeding after her first calf, and using a single bull on breeding pasture. Cows vaccinated for bovine viral diarrhea virus and infectious bovine rhinotracheitis and bred on community pastures were more likely to be pregnant than cows that were not vaccinated and bred on community pastures. Cows bred on community pastures that were not vaccinated were also less likely to be pregnant than cows that were not on community pastures regardless of vaccination status. Calving-associated events such as twin birth, Cesarean section or malpresentation, problems such as uterine prolapse or retained placentas, abortion or calf death within 1 hour after birth, or calving late after the start of the breeding season, were also associated with fewer pregnancies after accounting for all other factors.

BCS at Pregnancy Testing

- ▶ Most strongly associated with pregnancy status
 - ▶ Easiest to measure BCS when cows in chute for pregnancy testing
 - ▶ Cows with BCS $< 5/9$ were less likely to be pregnant than those $\geq 5/9$
 - ▶ Cows < 6 also more likely to abort
- 

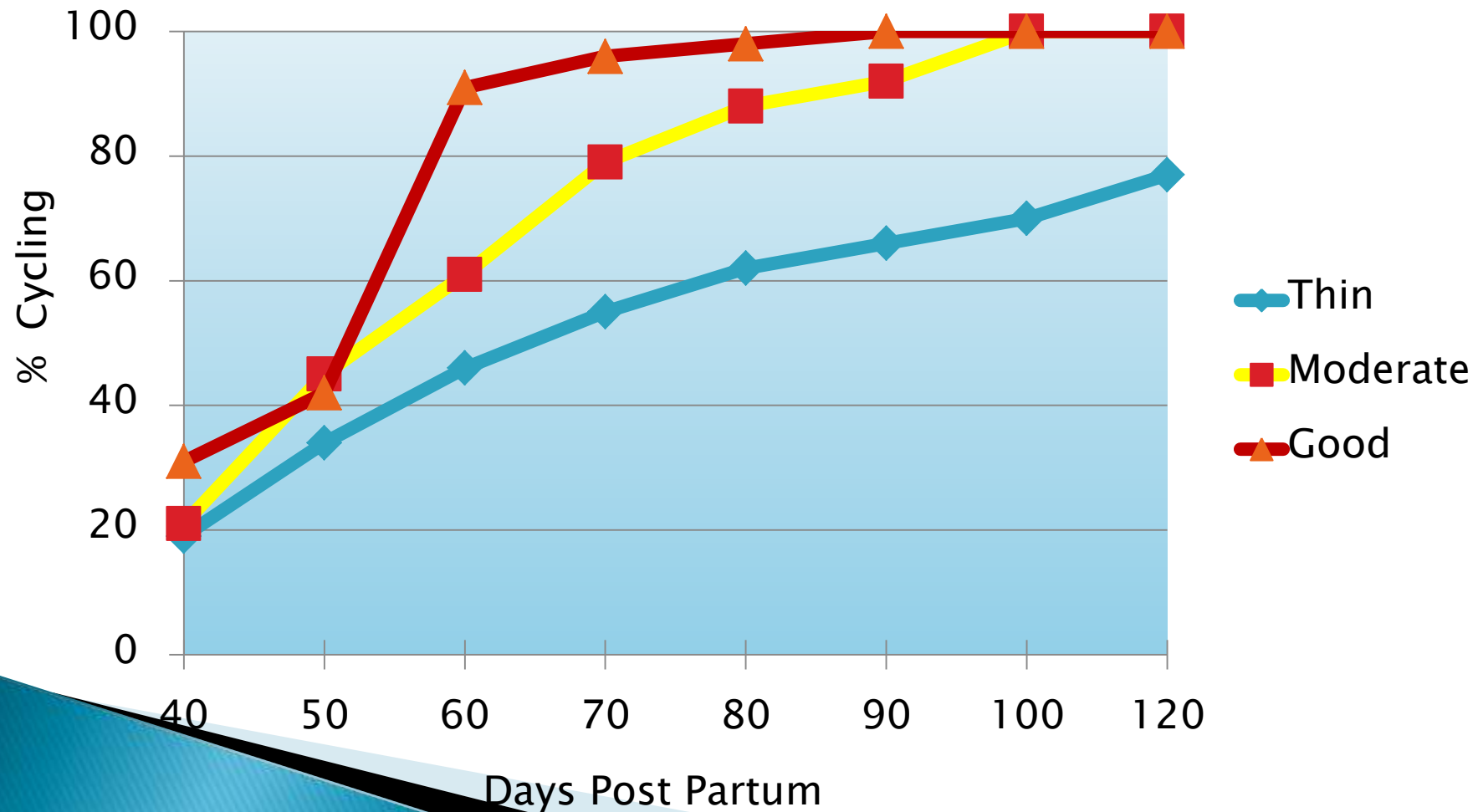
Cows in good body condition at time of breeding

- ▶ Minimum BCS of 2.5 at beginning of breeding season
 - ▶ May require sorting at weaning time to adjust body condition scores before calving
 - ▶ High demands of lactation make it difficult to “catch up” after calving!
 - ▶ Cows in poor body condition will have a delay in returning to estrus or may not cycle at all
- 

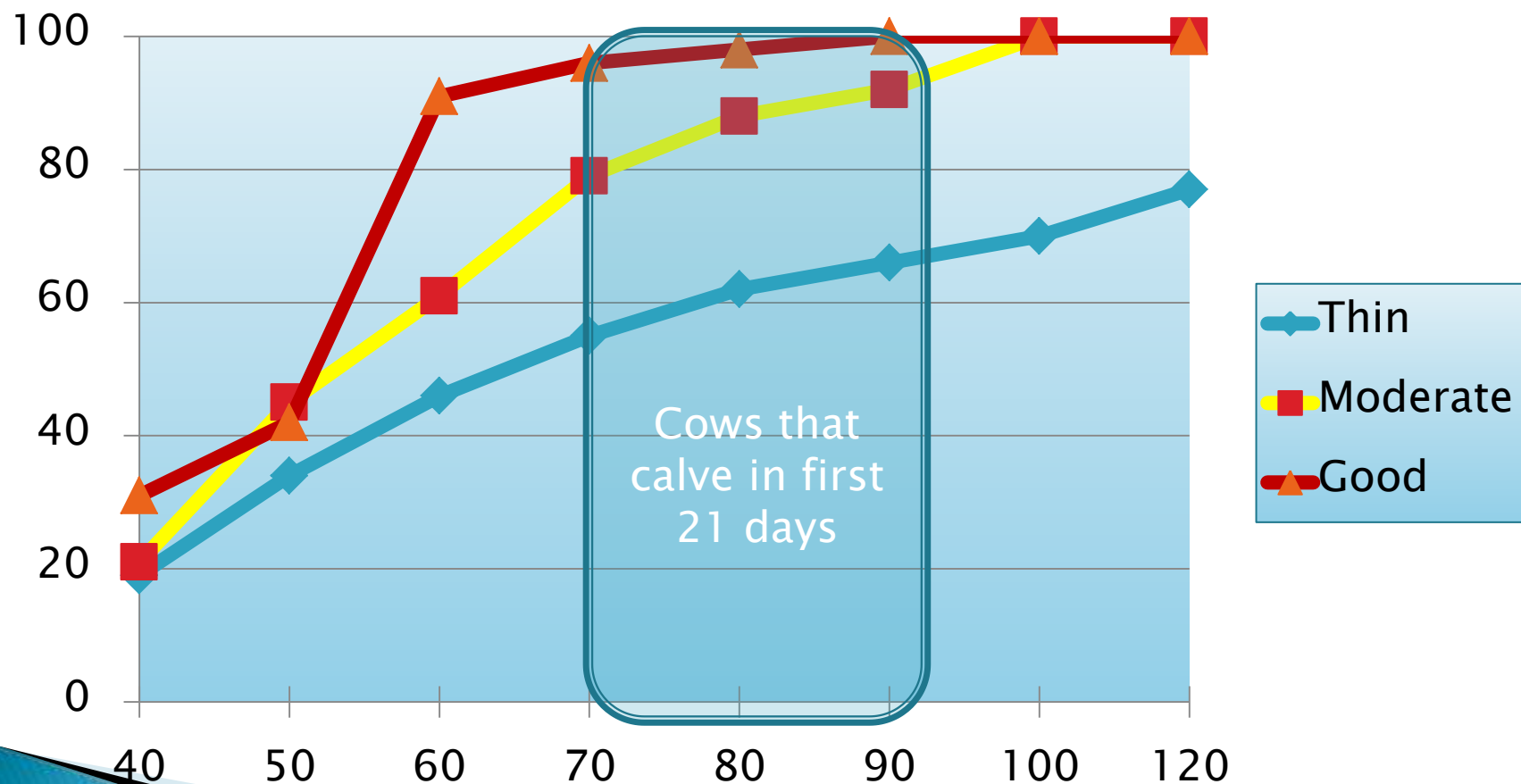
Body Condition at Calving and % in Heat after Calving

		Days after Calving							
BC at Calving	# of Cows	40	50	60	70	80	90	100	120
Thin	272	19	34	46	55	62	66	70	77
Moderate	364	21	45	61	79	88	92	100	100
Good	50	31	42	91	96	98	100	100	100

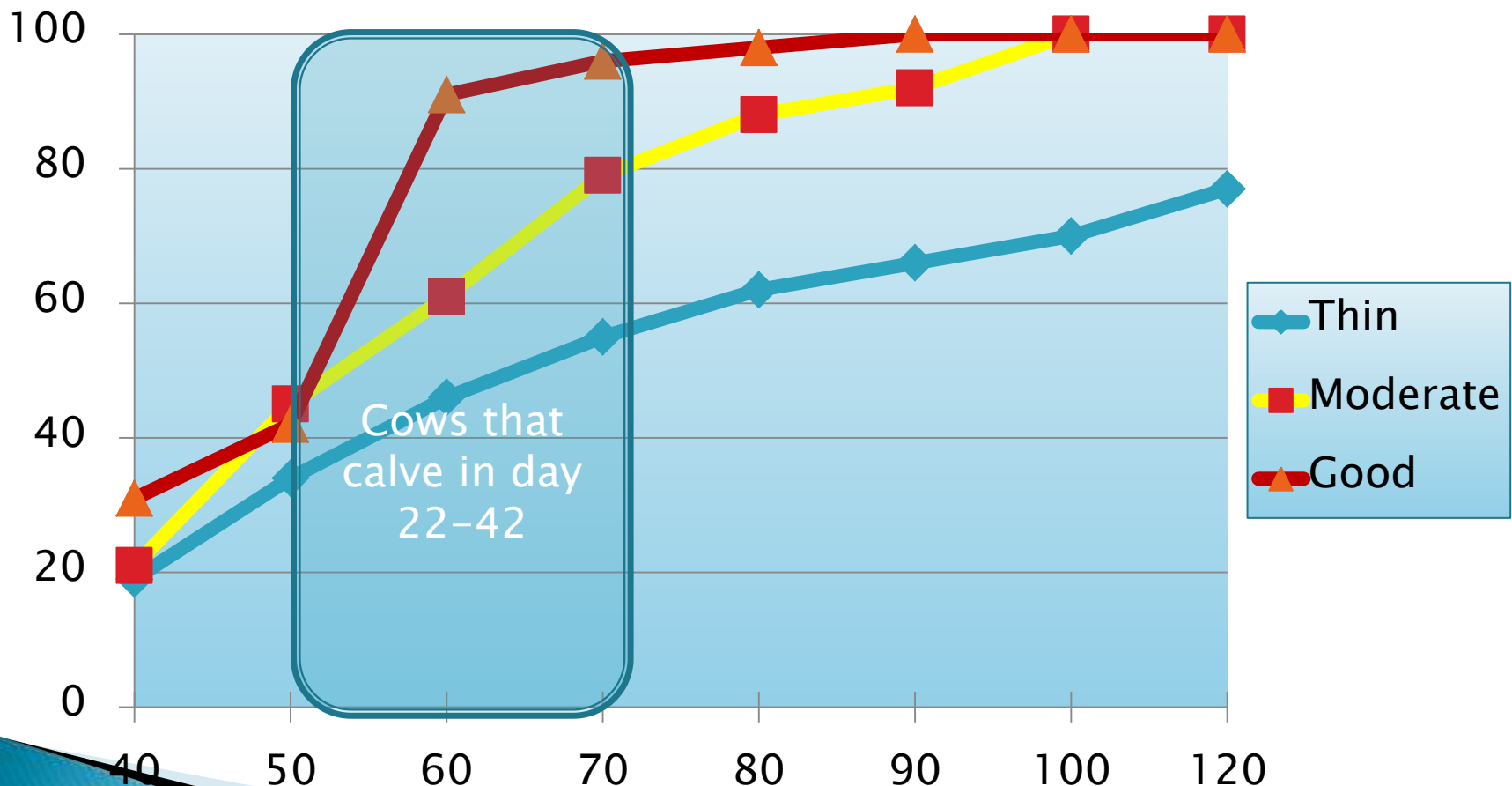
Body Condition and Post Partum Intervals



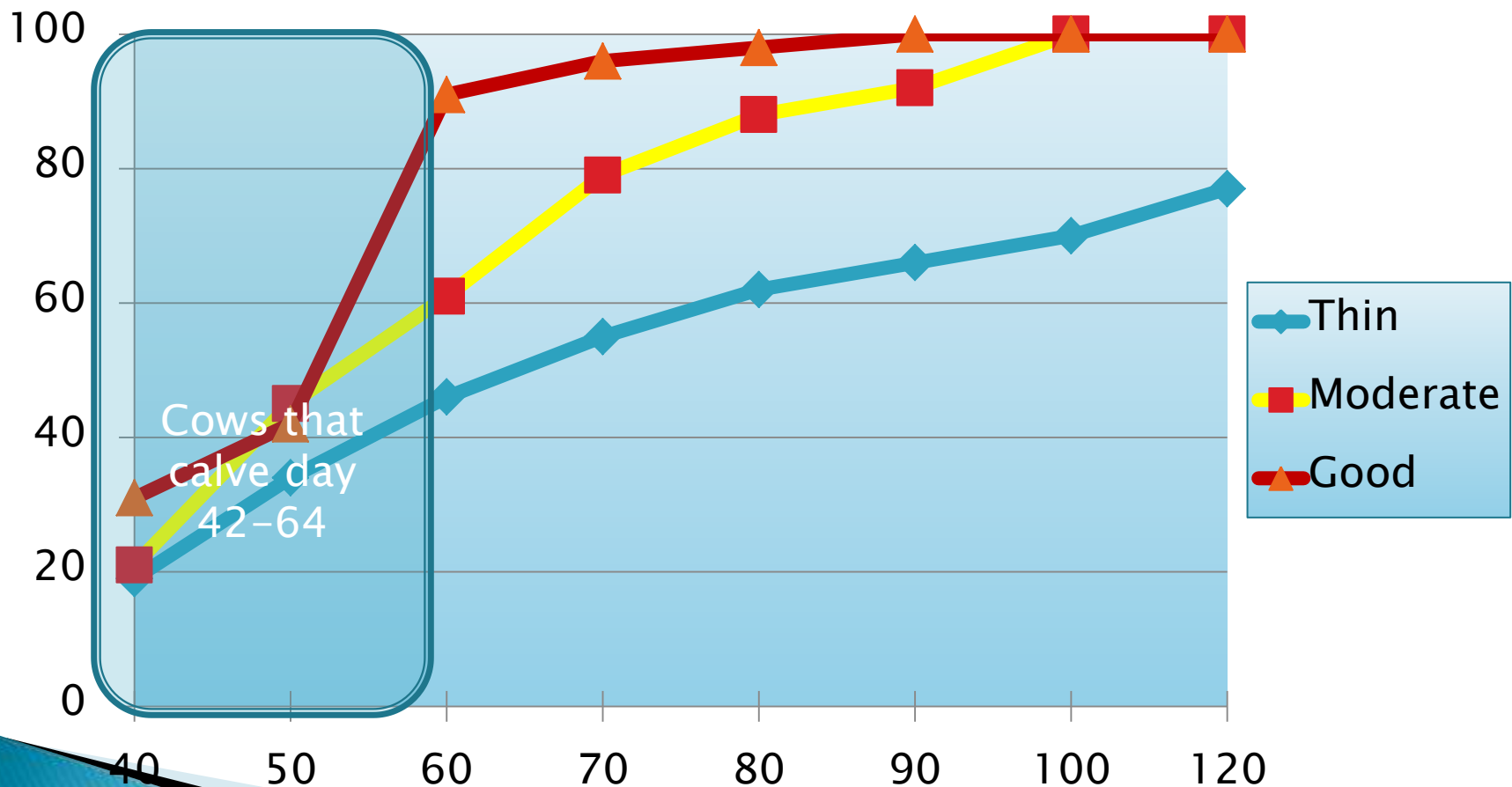
Body Condition and Post Partum Intervals



Body Condition and Post Partum Intervals



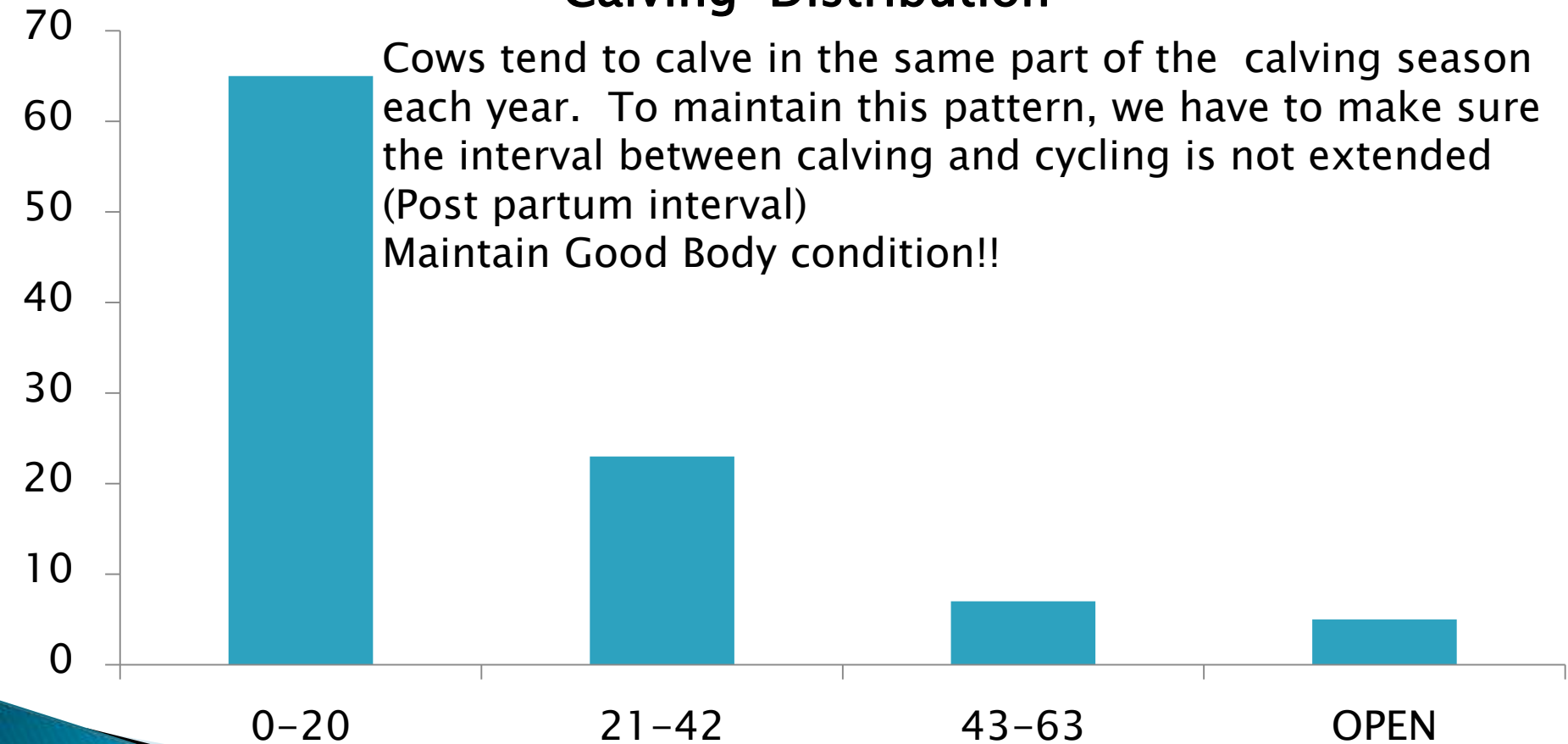
Body Condition and Post Partum Intervals



MOMENTUM IS IMPORTANT!!

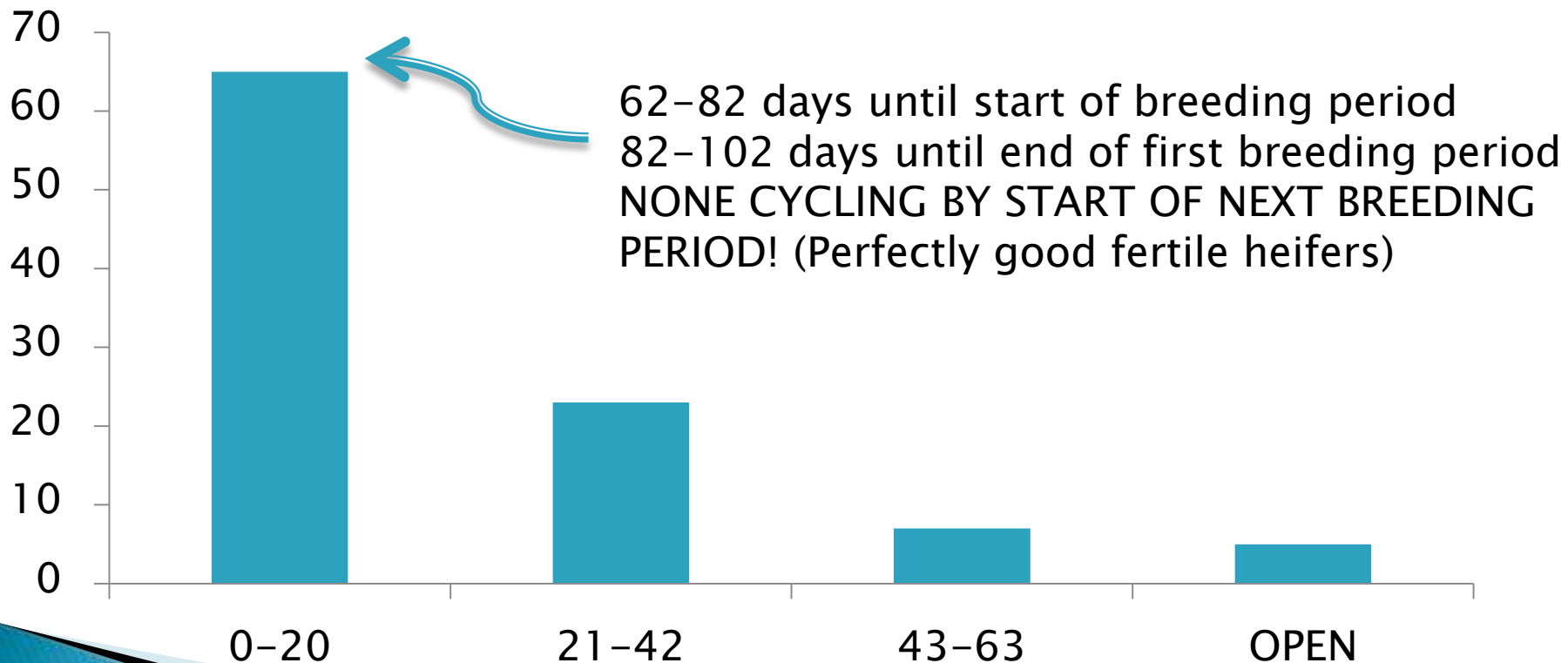
Calving Distribution

Cows tend to calve in the same part of the calving season each year. To maintain this pattern, we have to make sure the interval between calving and cycling is not extended (Post partum interval)
Maintain Good Body condition!!




Replacements must be in first period or earlier!! (100 day PPI)


Calving Distribution




Heifers are important in improving productivity!

- ▶ Beef productivity is improved when a high % of heifers conceive early in their first breeding season
 - ▶ We are establishing their “momentum”
 - ▶ In order to conceive early....Heifers must reach puberty prior to the start of the breeding season
- 


BUT REMEMBER!

- ▶ The time from calving to cycling (post partum interval) lasts 80–100 days for first calf heifers
 - ▶ In order for first calf heifers to be cycling at the start of the next breeding season:
 - ▶ Heifers need to calve 0–20 days ahead of the COWS
 - ▶ The heifer breeding season needs to start 30–42 days before the cows
 - ▶ Therefore heifers need to be cycling by 12–13.7 months of age (born in first 42 days of breeding season)
 - ▶ (Mean age of puberty is 11.5–14 months)
- 


Breeding heifers before cows

- ▶ If you want momentum on your side....
 - ▶ You have to breed your heifers at least 30 days prior to the cow herd
 - ▶ This gives the first calf heifer a fighting chance to get pregnant in the first 21 days of the breeding season!
 - ▶ In order to be cycling as replacements these heifers probably need to be chosen from the early calving cows (1st 42 days)
 - ▶ You need MOMENTUM!
- 

If everything goes well...

- ▶ There is not a lot of room for error in the reproductive math
 - ▶ Poor body condition scores, heifers born late, heifers in poor condition, mineral deficiencies....
 - ▶ Any one of these things can cause our reproductive cycle to lose momentum and it is very hard to recover
 - ▶ Once you get behind, it takes years to catch up again
 - ▶ A major wreck can cause an economic disaster...Lack of vaccines, biosecurity, infertile bull, trichomoniasis, campylobacter etc.
- 

So What! My calving distribution isn't perfect....

- ▶ 1st 21 days – 21% pregnant
 - ▶ 2nd 21 days – 25% pregnant
 - ▶ 3rd 21 days – 16% pregnant
 - ▶ 4th 21 days – 16% pregnant
 - ▶ 5th 21 days – 10% pregnant
 - ▶ Open 13%
 - ▶ 87% Pregnancy rate
 - ▶ That's OK isn't it?
- 


Front Loading the Breeding Season: (65% Bred in 1st cycle)




*A calf gaining 2.5
lbs/day x 21
days x \$1.50/lb
= \$78.75
additional
revenue per calf*

*Plus benefits of a uniform calf
crop!*


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 - ▶ 4th 21 days – 16% pregnant
 - ▶ 5th 21 days – 10% pregnant
 - ▶ Open 13%
 - ▶ 87% Pregnancy rate
 - ▶ Value of Moving to Ideal Calving Distribution?
 - ▶ **\$127/calf (300 cow herd = \$38,237)**
- 


Take Home Messages

- ▶ Reproduction is the most important productivity measurement that affects profitability
 - ▶ Even average reproductive performance can cost us significant money
 - ▶ When reducing production costs we do not want to sacrifice reproductive success!
 - ▶ Reproductive momentum is important!
- 

Take Home Messages

- ▶ Ensure your cows are in good body condition at calving
 - Consider body condition scoring as part of your normal management practice
 - Sort cows into management groups for winter feeding
 - Analyze your feed
 - If you use extended grazing, monitor the body condition score of your cows during this time period
 - Make sure cows have access to salt and trace mineral as part of the feeding program
- 

Take Home Messages

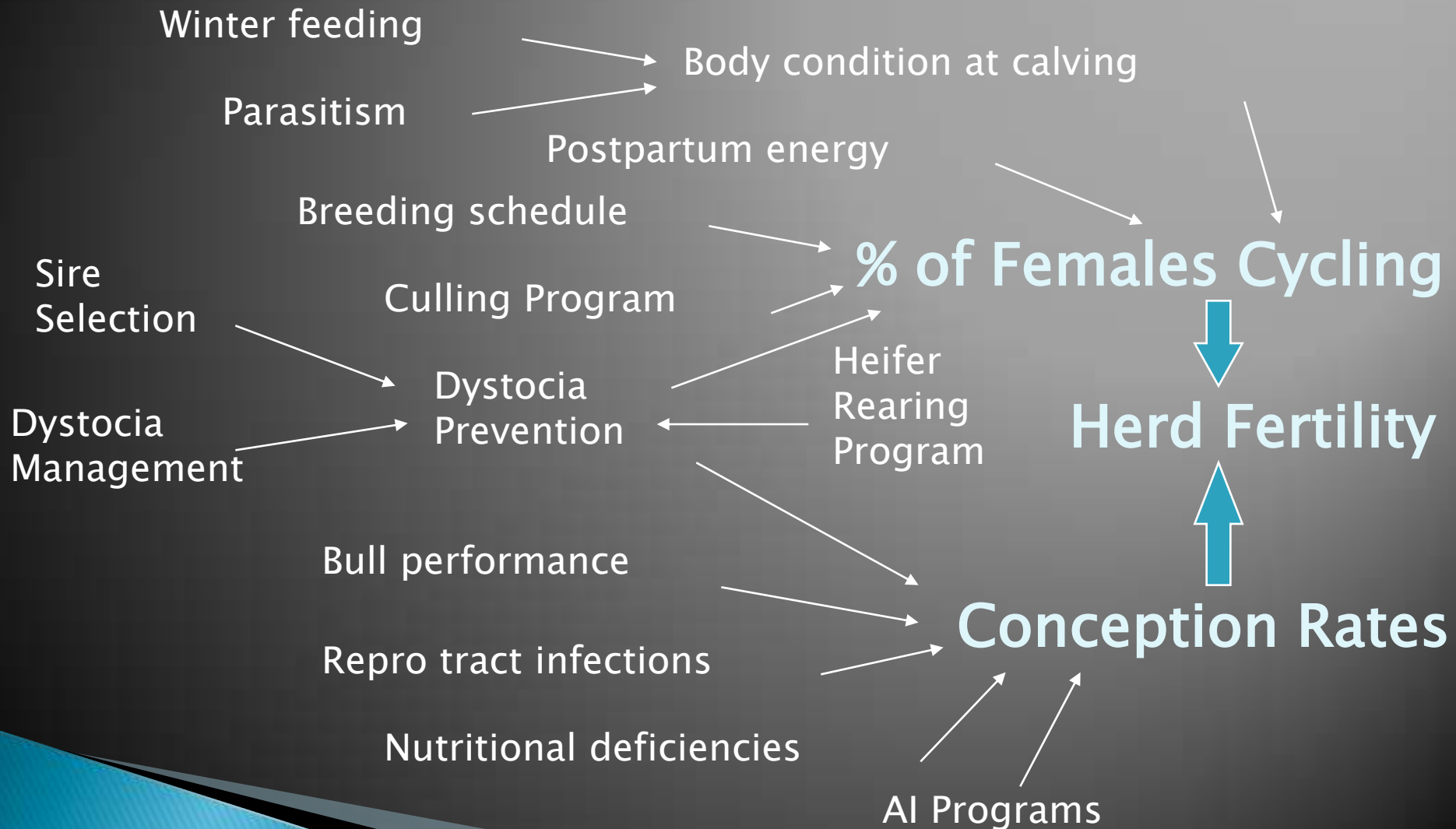
- ▶ Give your heifers reproductive momentum
 - ▶ Select heifers from early calving cows
 - ▶ Breed heifers 30–42 days ahead of cow herd
 - ▶ Utilize your veterinarian to monitor your heifer management program
 - Body condition scoring
 - Replacement heifer nutrition/feed analysis
 - Weighing heifers for target weights
 - Pre-breeding palpations to identify non-cycling heifers
 - Estrus synchronization programs
 - Vaccination program
- 

Avoid Reproductive Wrecks

- ▶ Practice good biosecurity
- ▶ Maintain your vaccination program
- ▶ Perform breeding soundness exam on bulls
 - Scrotal circumference
 - Semen quality
 - Physical exam



Risk Factors for Impaired Fertility





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