

Novel Lactation Management Strategies:



Photoperiod and Early Lactation Milking Frequency

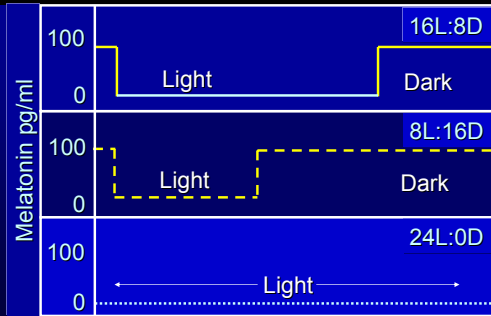


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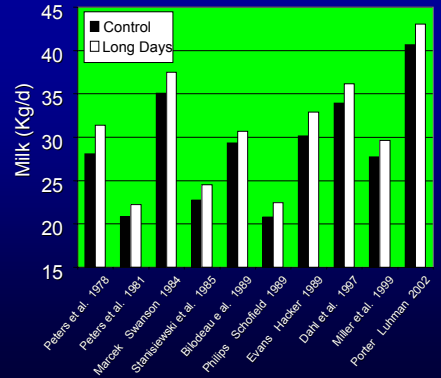
Objectives

- Review the impact of photoperiod manipulation on lactating and dry cows and heifers
- Consider physiologic mechanisms of the responses
- Discuss integration into Extension program.

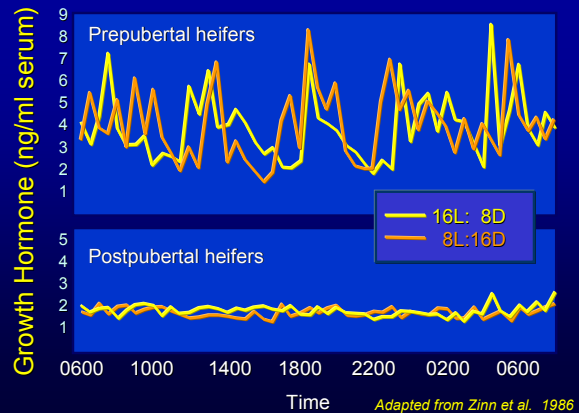
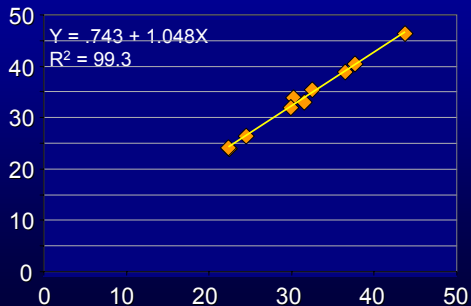
What is Photoperiod?



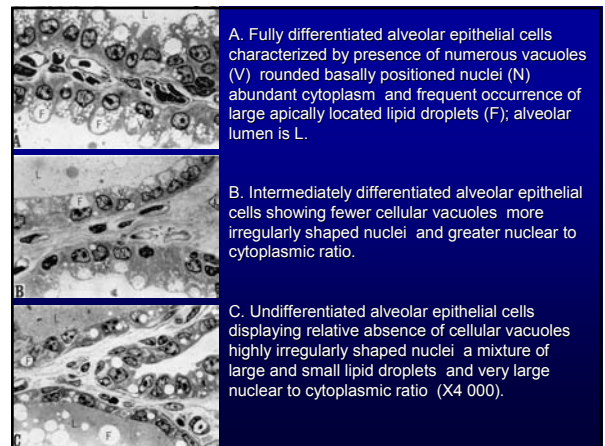
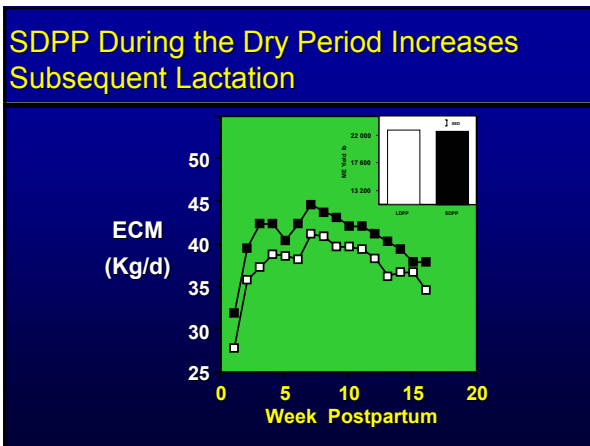
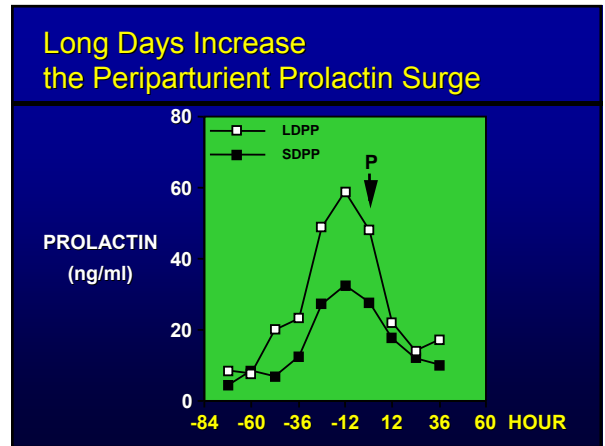
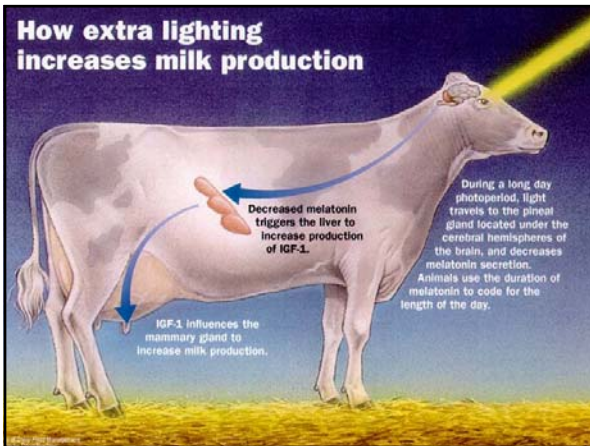
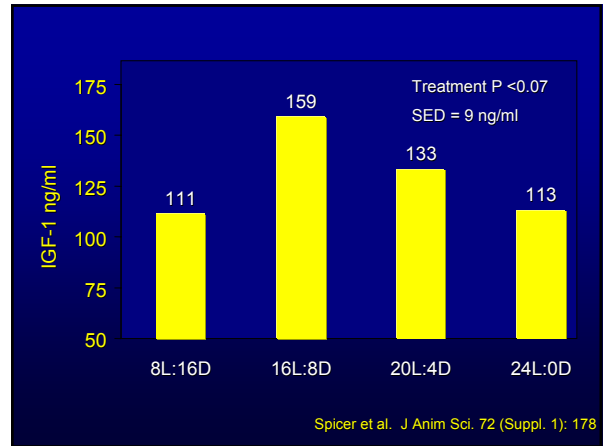
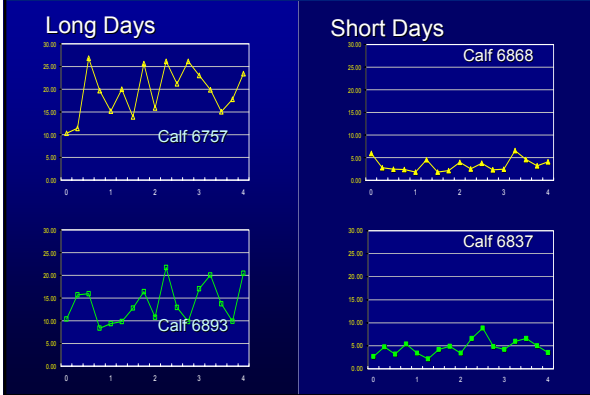
Summary of ten studies reporting the effect of long days on milk yield in lactating cows.

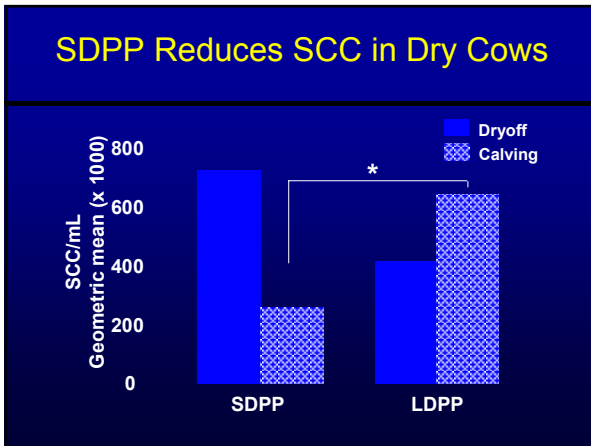
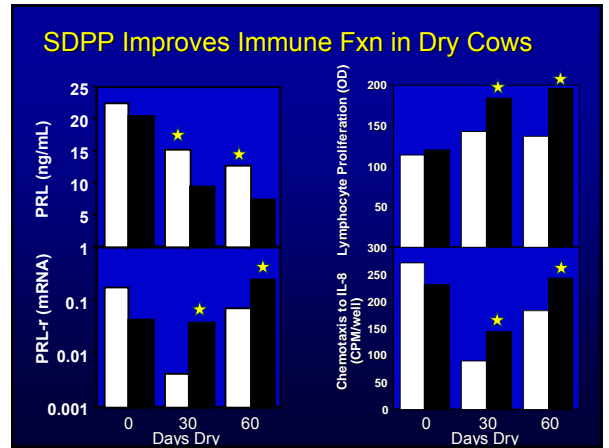
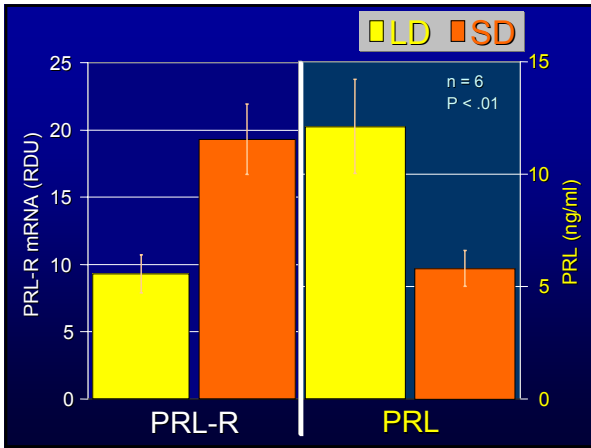


Prediction of LDPP Response



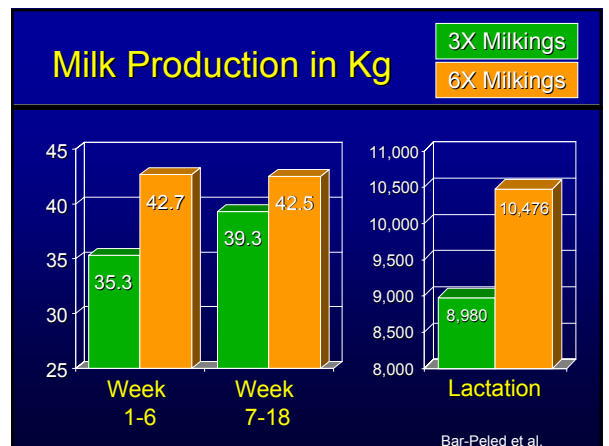
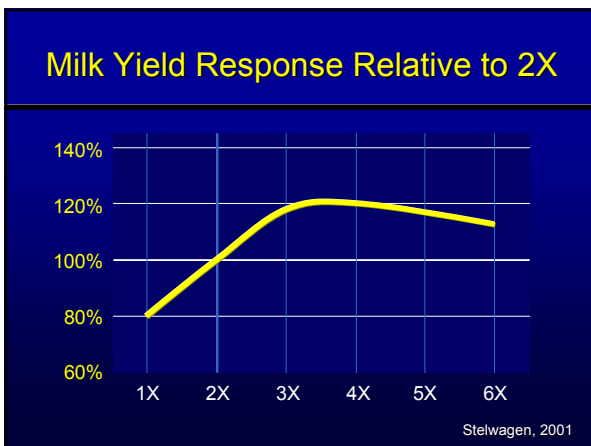
Long Days Increase Prolactin

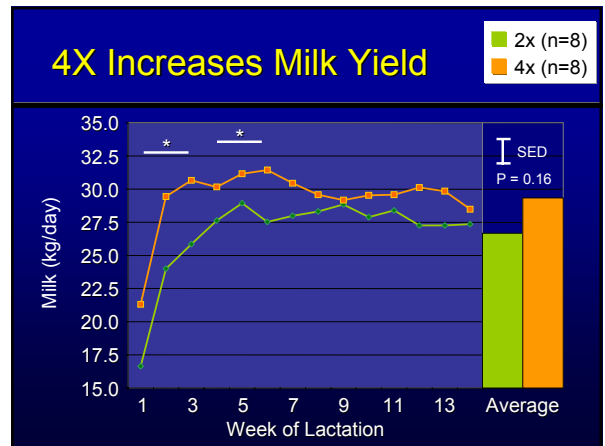
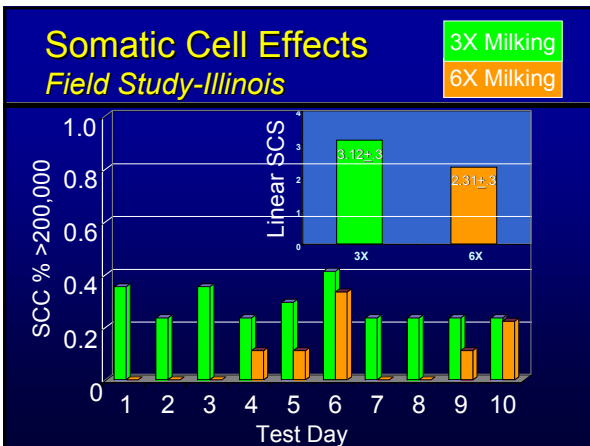
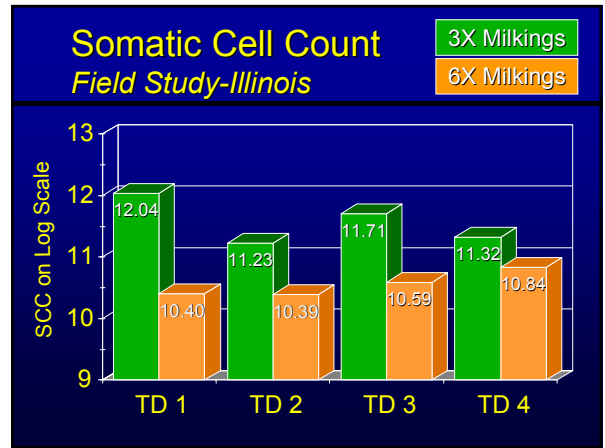
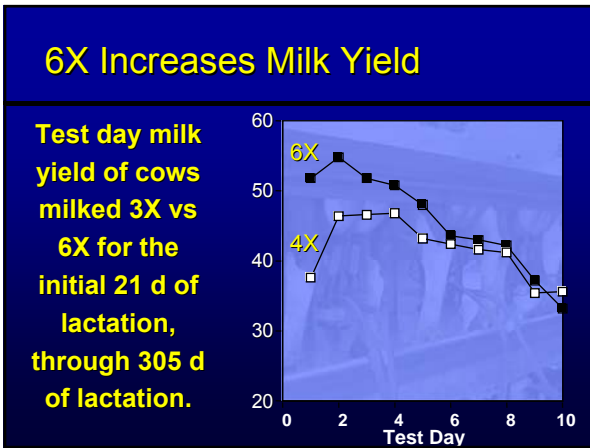
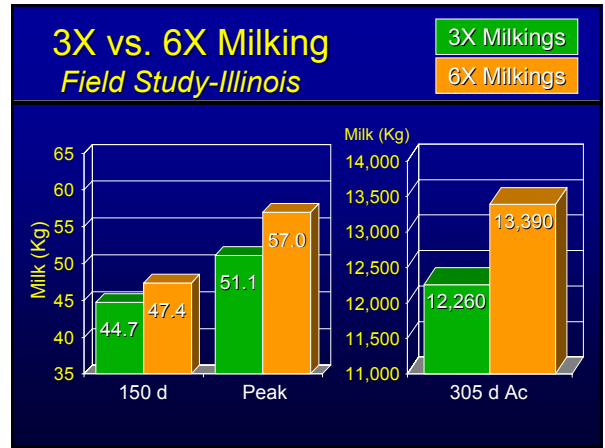
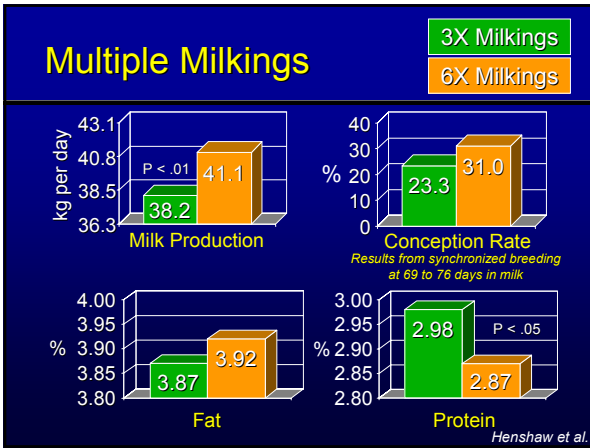




Dry Cows

- Short day exposure of cows and heifers for last 60 d of pregnancy increases milk production, and indices of immune function
- Prolactin “resistance” may develop under LDPP and limit sensitivity during transition
- Consistent with seasonal production adjustments



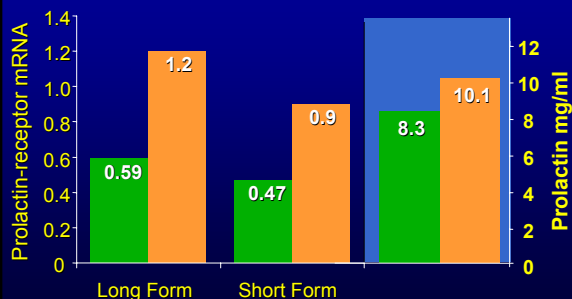


Multiple Milking -

Mechanism of Action?

2X Milkings

4X Milkings



Potential Economic Benefits

4X Milking of All Cows the 21 Days of Lactation in 120 Cow Herd

Milk Response in lbs	3	6	9
Labor	\$0.11	\$0.11	\$0.11
Feed	0.09	0.18	0.27
Supplies	0.05	0.05	0.05
Milk Revenue	0.33	0.66	0.99
Marginal Profit/Cow	0.08	0.32	0.56
Marginal Profit/Farm	\$2,928	\$11,712	\$20,496

Labor: 4Hr/cow/lactation at \$20/Hr

Feed: \$0.06/lb DM X (0.5lb DM per 1lb increase in milk production)

Supplies: cost of supplies for 42 extra milkings

Milk Revenue based on \$11.00/cwt

Conclusions

- Photoperiod management and early lactation frequent milking offer non-invasive methods to improve production and health in dairy cows.
- Prolactin physiology is critical to the responses, and thus may be a factor in other environmental effects, e.g. temperature and stress.

Collaborators

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