

# Robotic Milking Do's and Don'ts

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Dan Schultz, Taylor, Wis.



# Background

- Schultz Dairy Farm
- Taylor, Wis. (Jackson County)
- Purchased 1984
- All crops used on farm
  - 1,250 tillable acres (750 owned, 500 rented)
  - 1,250 acres is the required acreage for manure management

# Background

- 540 milking cows
  - 1,050 total head
- Converted to double-5 herringbone (1994)
  - Later converted to double-6 parlor



# Robotic Barn

- Research on robotics began in 2007
  - limited data available on large robotic farms
- Construction began in 2009



# Electrical

- 225 kVA transformer
- 200 kW standby generator
- Robots, fans and other major loads are 3-phase, 480 volt
- Step-down transformer for 120/277 volt loads



# Insulation / Ventilation



# Feed & Waste Management



# Milk Cooling



# Lely A3



# What Can Robots Do Besides Milk Cows?

- Track production by cow
- Track production and quality by quarter
- Track cow weight



# What Can Robots Do Besides Milk Cows?

- Track feed intake by cow
- Track rumination by cow and herd
- Heat detection



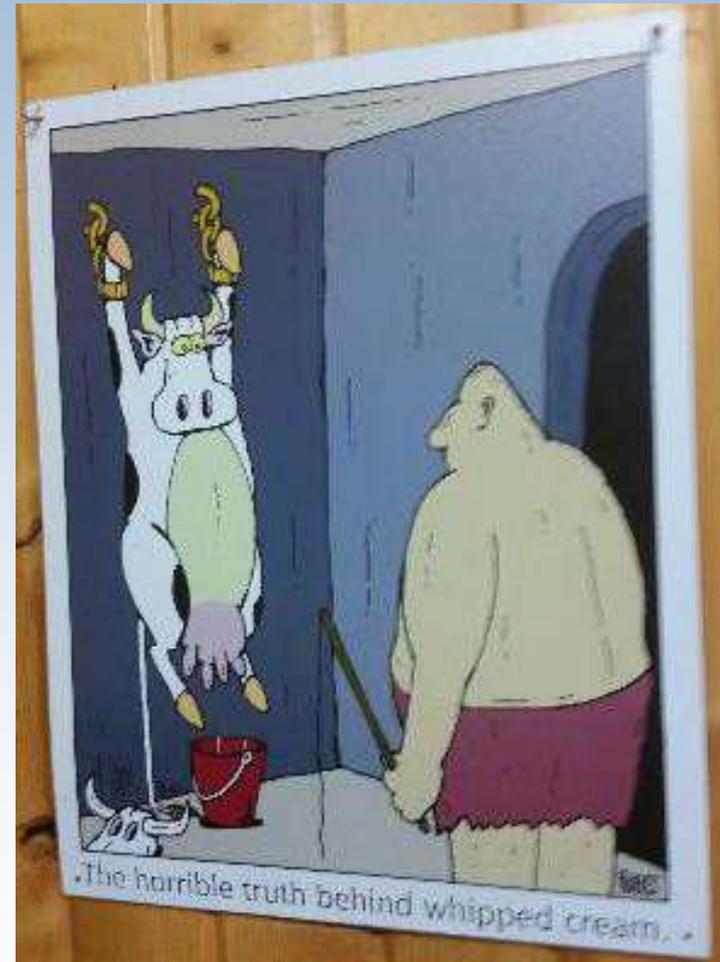
# Robotic Positives

- Promotes cow comfort (calmness)
- Quarter by quarter milking
- Body score control using PMR instead of TMR
- Production controlled milking times



# Robotic Negatives

- Robot down time (>1-hour) is milk lost
- Need technically inclined people to operate



# Robotic Negatives

- Sensitive to sub-freezing temperatures
- Requires daily maintenance
- Herd expansion requires more robots
- Rough capacity is 60 cows/robot or 5,500 lbs/day

# Things I Would Change

- Free flow but control traffic (fetch pen)
- Feed auger is too long



# Things I Would Change

- Multiple robots for each pen
  - Provides back-up during breakdowns
- Robot location (outside vs center location)



Lely Astronaut A-4

Iowa Dairy Foundation  
NE Iowa Community College

Calmar, Iowa

# Dairy Technology

- Technology is impacting all aspects of our lives including dairying
- I envisioned robots as the answer to quality milking
- But, I'm finding that to most dairymen, addressing labor concerns overshadows the other benefits robots have to offer

# Questions!