Robotic Herd Start-up Learnings & Insights

GPS Dairy Leaders Forum
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Robotic Herd Start-up

Why change from parlor to robotics?

- Parlor needing a major overhaul - milking system options
- Labor climate creating more challenges – less labor
- Opportunity to update parlor and barns – milking system, tunnel air exchange
- Way to meet milk quota - ability to add cows
- AMS predicted to hold value over new parallel parlor
- Wanted a challenge

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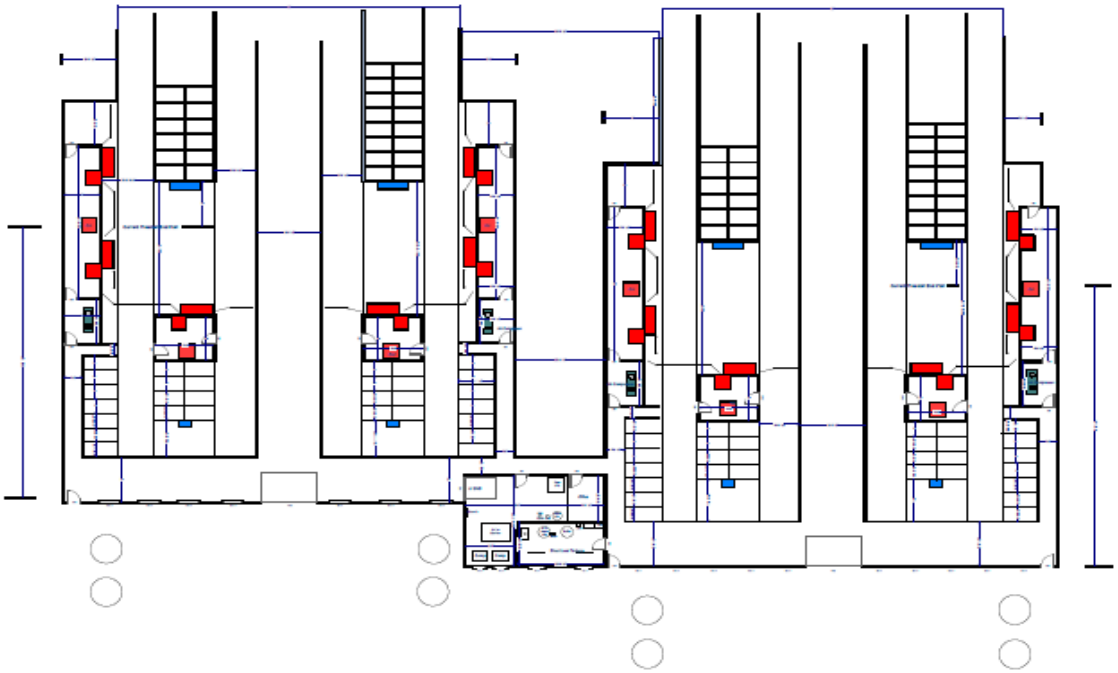

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Robotic Herd Start-up

Expectations

- Lower Labor
- Increase milk and performance
- Lower net herd replacement costs
- Higher salvage value of milk equipment
- Less treatment and vet costs
- Add 60 more cows for milk quota (expand within)

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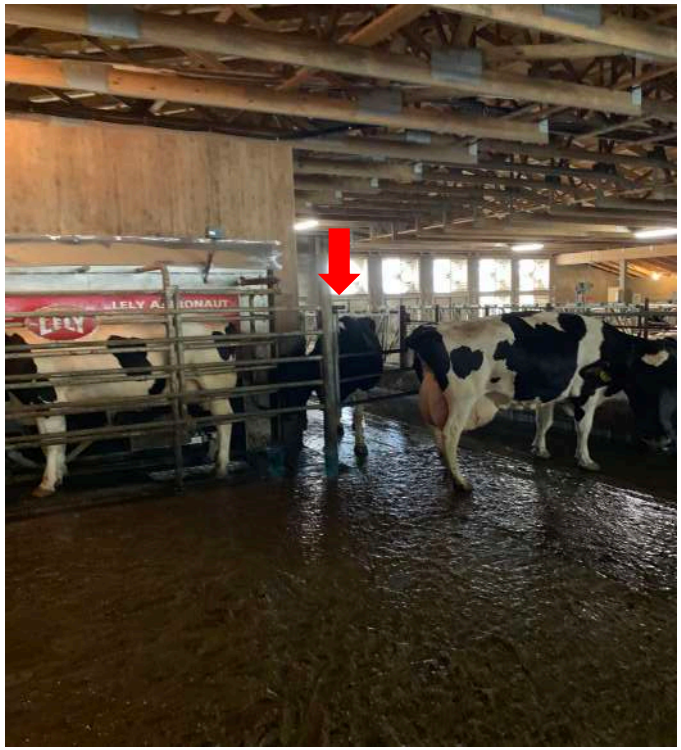

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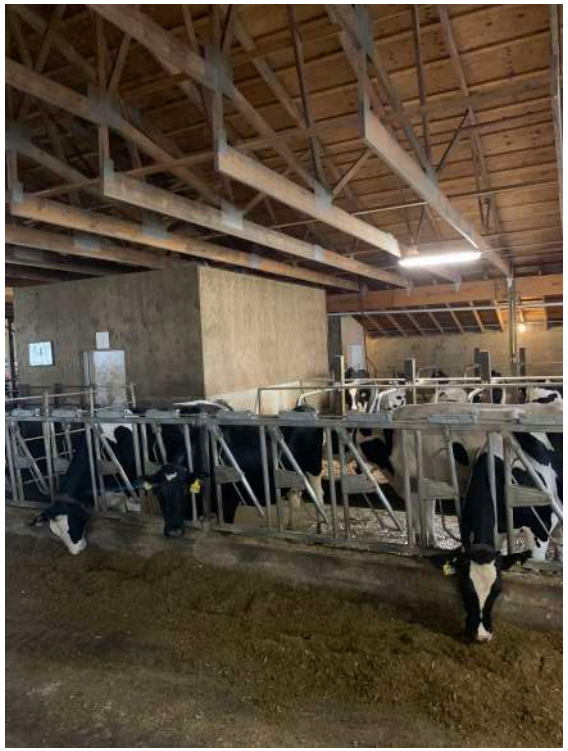

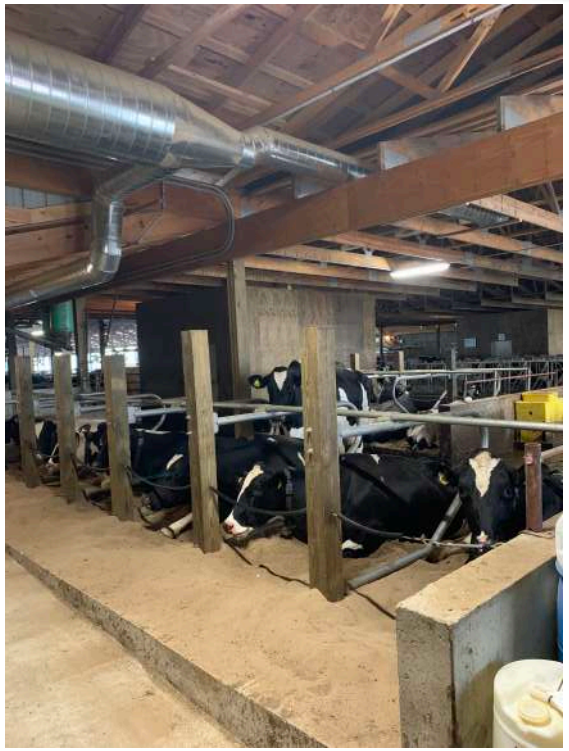

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Robotic Herd Start-up

Start-up Learnings

- 6 boxes per barn – 2 start ups - barn 1 and barn 2
- 1st barn acclimated cows to pellet by top dress – 1 week
- 2nd barn pre-fed cows through the box prior to start up milking
- 1st barn startup was 56 cows per box versus 2nd barn startup was 44 cows per box
- Dried up some cows early
- Labor set up for 3 days, 3 weeks, 3 months
- Safety of labor and support help during start-up (new system)
- Bonus to employees for staying past startup
- Dealer (Fitzgerald) with great plan and support staff

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Robotic Herd Start-up

Start-up Learnings - Fetching

- Concept of fetching cows to bring to fetch pen for milking took some time to work out both on the cow and human side
- Fetching criteria considering milking interval, DIM, and lbs of milk.
- Training help on the criteria and how to read cow behavior
- Minimize cow disruption is critical – keeping other cows on their timeline
  - How many animals to fetch at a time
  - Timing of the fetch
  - Pattern in the pen on fetching and having proper placement of gates
- Review reason of cow fetches and what can be done to improve
- Current fetches are 60 head per 24 hr period or 5.0 per box over 24 hrs

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Robotic Herd Start-up

Labor

- Night manager - 1
  - Maternity, fetch, clean stalls, fresh cow 5x, robot rooms
- Herd person – 1
  - Cow moves, treat, breed, vaccinate, fetch day, etc
- Maintenance – 1 split with feeding
  - Scheduled, preventative, emergency
- Day calf feeder and maternity -1
- Manager –Herd - 1 split
  - Overall farm duties, relieve herd person,

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Costs

- Labor lowered 35% - 5 FTE less
  - Change in labor focus from doers to having interest
- Electric bill – increased 54%
  - 3 phase year baseline - working on daytime program for discounts
  - Added tunnel fans, scrapers, feed pushup, AMS
- Vet costs – lowered 10%
  - Sort gates to improve efficiency
  - Less treated cows – seeing days with no hospital cows
- Feed Costs
  - Increase DMI appears to be the main difference in costs.
  - Working on ways to manage out of pocket costs.

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Feeding program

- System had capability to feed 2 dry feeds and 1 liquid feed currently a molasses blend
- Dry feeds -1 feed needs to be pellet other can be any form of feed that flows different pellet, meal mix, coarse mix, CGF, or other
- Start up was one product and high quality pellet
- 2nd dry feed implemented a pellet 2 months after 2nd barn startup for costs and milk level flexibility.
- 2nd dry feed changed to meal after 4 months after 2nd startup for costs
- 2nd dry feed switched back to pellet in Aug
- Implemented molasses blend barn 1 (6 boxes) in early Sept
- Switching to CGF for 2nd dry feed

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Pattison Performance

Metric	Robot Jan – Sept 2019	Prior – Jan – Sept 2018	Difference
ECM lbs/day	100.8	100.3	**+ 0.5 lbs**
Fat&Pro lbs/d	6.65	6.61	**+0.04 lbs**
DMI , lbs/day	60.1	58.3	**+1.8 lbs**
IOFC @$16 class III $2.5 fat $2.00 Prot	$11.18	$11.26	**-$0.08**
Milk shipped/day	62,251 lbs 64,835 lbs Oct	59,503 lbs	**+2,758 lbs/d** **+5,350 lbs/d**

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Pattison Performance

Metric	Robot Jan – Sept 2019	Palor– Jan – Sept 2018	Difference
Cows milked	656 680 Oct	631	**+25 cows**
Cull rate	30.0%	38.0%	**-8.0%**
Early cull <60 day	5.6%	5.9%	**-0.3%**
Early culls < 60 DIM Lact1	1.0% last 4 months		**improving**
Preg Rate	28% 33% Since July	29% - prior SCR	**-1.0%** **+4.0%**

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Salvage Value of Milking Equipment

- Salvage value is not known but other systems in the market are holding at 60% plus on AMS
- Maintenance of system to keep operating and up to date is a main factor of holding onto value
- Capability of removal, update, and reinstall adds increased opportunities for resale.

Robotic Herd Start-up

Summary Where Expectations Met

- Lower Labor – Yes!
- Increase milk and performance – On a good track!
- Lower net herd replacement costs – trending to Yes!
- Higher salvage value of milk equipment – Still unknown
- Less treatment and vet costs – Yes!
- Add 60 more cows for milk quota (expand within) – Yes!
- Was it a challenge – Yes! ☺

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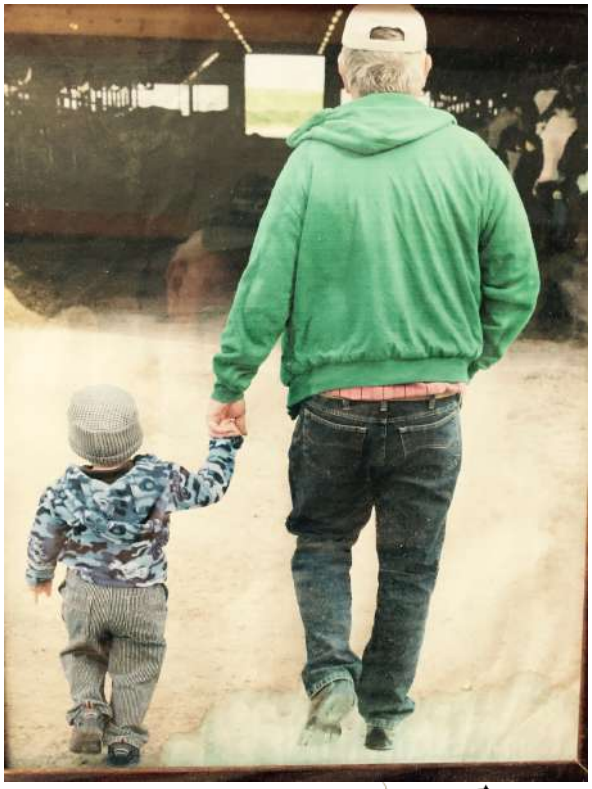
Questions?



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