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New ISU Dairy MOOves In and Ahead

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New ISU Dairy MOOves In and Ahead

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Summary and Implications
After many years (decades) of discussions, plans, and sometimes speculation, the new ISU Dairy Farm project is steamrolling ahead (moooooooving!!). Since Board of Regents approval in August of 2004 of the architect and engineering firms as well as the funding dollars, this dairy team along with all the stakeholders (ISU, NADC, dairy industry) have been intensely working to finalize the components and layout and construct a “state of the art” 450 milking cow (525 total) facility with all replacements included on site. Unique bidding of the dairy in 6 packages or components was completed in 2006 and timetable for completion and milking cows was fall 2007. Following an excellent pre-animal open house in October 2007, the new farm was christened with animals in late November (all female replacements on 11/26 and all lactating and dry cows on 11/27). The animals adjusted well (no loss in milk production, SCC maintained ~ 150,000) and it sure was nice (for animals and people) to be inside the new facilities when the ice storm and cold weather and wind hit that weekend. We’re still working through the growing pains of a new facility and systems but are extremely pleased and excited to be moving along and ahead! This facility will provide unique designs for animal handling / data capture - surface and subsurface mattresses and bedding research - manure solid separation (recycling and usage) - extra crossovers/ waterers to facilitate small pen research - unique electrical / water grids for ventilation/water/lighting - headlocks / 108 individual feeding Calan gates

Facility Features
- 456 stall lactating cow naturally ventilated freestall barn
  - surface and subsurface mattresses and bedding research
  - manure solid separation (recycling and usage)
  - extra crossovers/ waterers to facilitate small pen research
  - unique electrical / water grids for ventilation/water/lighting
  - headlocks / 108 individual feeding Calan gates
- State of the Art Milking / Education Center
  - Fully automated double 12 parallel subway parlor
  - Automatic animal ID / 5 way sorting post parlor
  - Classroom / laboratory / computer networking
- Student / Animal Interaction Facility (small pavilion)
- Special needs/ herd health teaching and veterinary area
  - Chutes / standing and tilt tables
  - Automated foot baths / lameness detection
  - Automated scale for weighing animals
  - Veterinary teaching office / surgery area
- Dry cow / transition facility (naturally ventilated)
  - Freestalls and bedded pack (BP) / calan gates on BP
  - Unique designs for animal handling / data capture
- 16 stall individual calving barn
- 100 head calf facility (unique environmental controls)
- Young heifer barns (2) : 2-16 months old
  - Bedded pack / counterslopes / 8/pen; 3 moves in 14 mo.
  - Naturally ventilated / access to outdoor pens
- Bred heifer barns (2): Open front freestalls / curtains
- Comprehensive feed storage / mixing areas
  - Facility mimics commercial but great research capacity!

Research Activities and Areas
- Nutrition trials / metabolic diseases / transition cows
- Manure solids separation and individual manure capture
- Calving/ pre-weaned calves (physiology/ behavior/nutrition)
- Activity / Energy balance and Reproduction
- Genetic control of nutrition / energy balance / immunity
- Water and chemical usage and treatment
- Milking equipment / technologies studies and evaluations

Conclusions
As you can see, things are moooving and are very exciting on the new ISU Dairy Farm. By next year’s report, they’ll be plenty more details as both cows and personnel will be adjusted. Success breeds success (it’s a phrase we’ve all heard and used). This phrase epitomizes the new ISU Dairy Farm. Many years of success with tremendous education and training of young dairy people was accomplished at the Mortensen Road (campus) Dairy Facility to supply our industry with valuable, very successful personnel (look around at the dairy industry worldwide and ISU is a name associated with success and accomplishments). A great deal of success was also achieved in research (ex. - metabolic disease discoveries and prevention) and outreach at Mortensen (although it was always called the ISU Dairy Teaching Farm). The ISU Dairy Breeding Research Farm at Ankeny was second to none in utilizing paired cohorts (average vs highest selection indices) to create divergent genetic lines that have answered many questions about genetics and management for high productivity in our industry. The data from this farm has had impact worldwide, from calving ease for sires through genetics of immune response and all the factors in between (income and expenses associated with higher producing animals). Now a new era has begun with our new ISU Dairy Farm facility, but it isn’t the end but rather a new beginning to continue to foster and grow the successful impact that ISU has in the life of students and the dairy industry. If you have questions, don’t hesitate to contact anyone on the dairy science team (on campus or in the field). Give us a call at 515-294-6021 or drop an email (ltimms@iastate) as your thoughts and input are valuable to us.
Double 12 parallel parlor

Automated footbaths and Stepmetrix lameness detection

Dry cow barn: sand freestalls

Dry cow barn: bedded pack and maternity area

Milking parlor subway

Dry cow barn animal handling area
Calf barn: 96 head; rock drainage with geotextile fabric

Heifer barn: 2-9 month old

Heifer barn: counterslope 6-9 month old heifers

Heifer barn: 9-15 month old: headlocks on breeding heifers

Bred heifer barn: fence line feeding

Bred heifer barn: Sand freestalls – on the beach!!