

## Update on the New Iowa State University Dairy Science Education and Discovery Facility (Farm)

### A.S. Leaflet R2109

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#### Summary and Implications

After many years (decades) of discussions, plans, and sometimes speculation, the new ISU Dairy Science Education and Discovery Facility (Farm) project is steamrolling ahead (mooooooving!!). Following Board of Regents approval in August 2004 of the architect and engineering firms as well as the funding dollars (which will come from the sale of the Ankeny Farm property), this dairy team along with all the stakeholders (ISU, NADC, dairy industry) have been intensely working to finalize the components and layout for a “state of the art” 450 milking cow (525 total) facility with all replacements included on site. Unique bidding of the dairy in 7 packages or components will be completed shortly and timetable for completion and milking cows in spring 2007. This facility will provide unique and excellent opportunities for teaching, research, and extension, and is forward designed to successfully lead the industry both now and into the future.

#### Timetable

- Board of Regent (BR) approval / design started 8/2004
- Preliminary schematics completed/BR approved 3/2005
- Final schematics / drawings completed 9/2005
- Bidding on 7 separate components (Feb.- May / 2006)
- Scratch dirt and start construction April 2006
- Completion and milking cows Spring 2007

#### Facility Features

- 456 stall lactating cow naturally ventilated freestall barn
  - mattresses and sand ( both can work / we’ll prove that)
  - sand and 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
  - automated barn manure scraping / individual pen (vacuum)
- 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 networked
- Student / Animal Interaction Facility (small pavilion)
- Special needs/ herd health teaching and veterinary 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) : 3-16 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
- Metabolism barn: 16 stalls / multi species.
- Facility mimics commercial but great research capacity!

#### Research Activities and Areas

- Nutrition trials / metabolic diseases / transition cows
- Sand / solid 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 mooving and are very exciting on the new ISU Dairy Farm. By next year’s report, they’ll be plenty more details and a large physical presence (with a lot more dirt, mortar, stalls, and curtains filled in).

Success breeds success (it’s a phrase we’ve all heard and used). This phrase epitomizes the new ISU Dairy Science Education and Discovery Facility. 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 is 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). **Next year a new era will begin with our new 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.

# Iowa State University Animal Industry Report 2006

