

## Russ Giesy Retired from UF Dairy Extension

Multi-county dairy extension agent Russ Giesy retired in August from UF/IFAS Extension after 21 years of service. Russ served the dairy industry in any way he could with



a focus on farm business financial analyses (DBAP) and cost-benefit analyses of nutrient management systems.

He was recognized for his service to the Florida dairy industry by industry leaders at the Florida Dairy

Business Conference in Ocala on September 8.

Russ has accepted a position as classifier with the Brown Swiss Association. He and his wife Joan plan to stay in Leesburg, Florida.

Dr. Joan Dusky, associate dean for Extension, said that the University of Florida plans to fill the now vacant position. UF will work with the Florida dairy industry to define the job description and the location of the new dairy agent. We wish Russ good luck in his new endeavors.



*Check presentation ceremony (9/29/08) at the UF Dairy Unit for the USDA Rural Development Value Added Producer Grant awarded to the Florida Farm Bureau for a feasibility study of anaerobic digesters. L-R: USDA Rural Development State Director Ronald Whitfield, Rural Development Business Programs Director Joe Mueller, Geoffrey E. Dahl of UF, Adele Griffin representing FL Senator Mel Martinez, and Frankie Hall of Florida Farm Bureau.*

## Business Plan for Dairy Digesters

A \$78,658 grant funded by the USDA Rural Development Agency will provide a feasibility study for methane digesters on dairies in Florida, from farm to the consumer. The end-product of the grant is a business plan that can be used by producers to apply for funding to site digesters and a solid marketing plan for energy and other co-products of digesters. The project is led by Frankie Hall at Florida Farm Bureau and collaborators include the UF Department of Animal Sciences, Southeast Milk Inc, Sunbelt Milk Producers, Florida Environmental Defense, Farm Credit (North and South Florida), Florida Electric Cooperatives, the Association of Florida Conservation Districts, the Hardee and Hillsborough County Farm Bureaus, and the Okeechobee Area Ag-Council. Look for meetings in early 2009 to report the outcomes of the study. For more information contact Frankie Hall ([Frankie.Hall@ffbf.org](mailto:Frankie.Hall@ffbf.org)) or Geoff Dahl ([gdahl@ufl.edu](mailto:g Dahl@ufl.edu)).

## What I Did On My Summer Vacation

David R. Bray

I went to cow Disneyland Barns in South Dakota; lots of animals in one place. The new thing in dairy housing in the Midwest is Low Profile Cross Ventilated housing (LPCV).

### Characteristics of LPCV Barns

The low profile results from the roof slope being lowered from a 4:12 pitch like in our open free stall barns to a 0.5:12 pitch. The barn height is determined by the heights of the feed trucks.

These buildings are more like big box warehouse structures. The shell of the building can be erected by any contractor. This may reduce the cost of the building because the cost of these LPCV barns per cow maybe less than our present tunnel barns, but obviously not less than our traditional open free stall barns in Florida.

These LPCV barns have a smaller land space requirement than a naturally ventilated free stall barn because a double eight row LPCV barn does not have the 100' open space requirement needed by two 4 row

barns needed to house the same number of cows in naturally ventilated barns as shown in Figure 1.

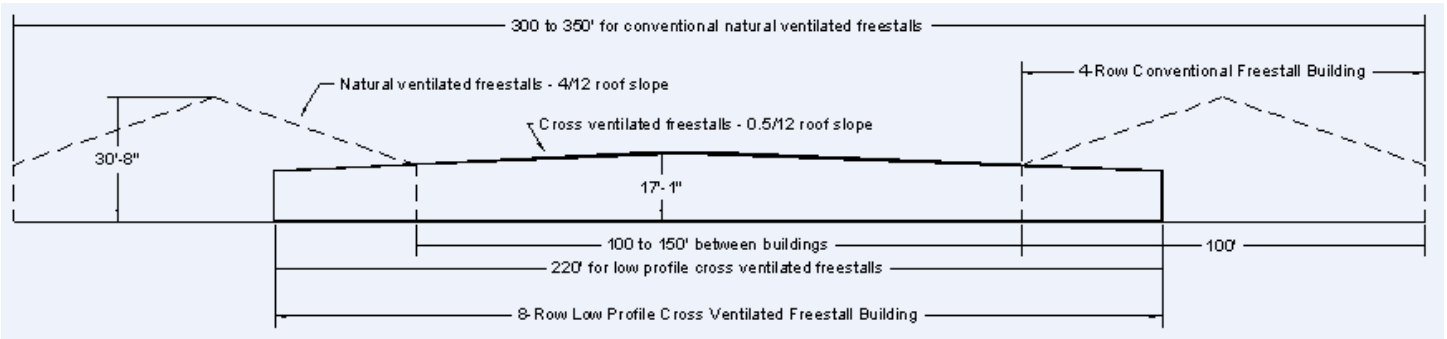


Figure 1

Figure 2 illustrates the end view of the open LPCV building with the evaporative cooling pad system located along one side of the building and fans are placed on the opposite side. More space is available for

fan placement and the cooling system parallel to the ridge rather than perpendicular because the equipment doors are located in the end walls.

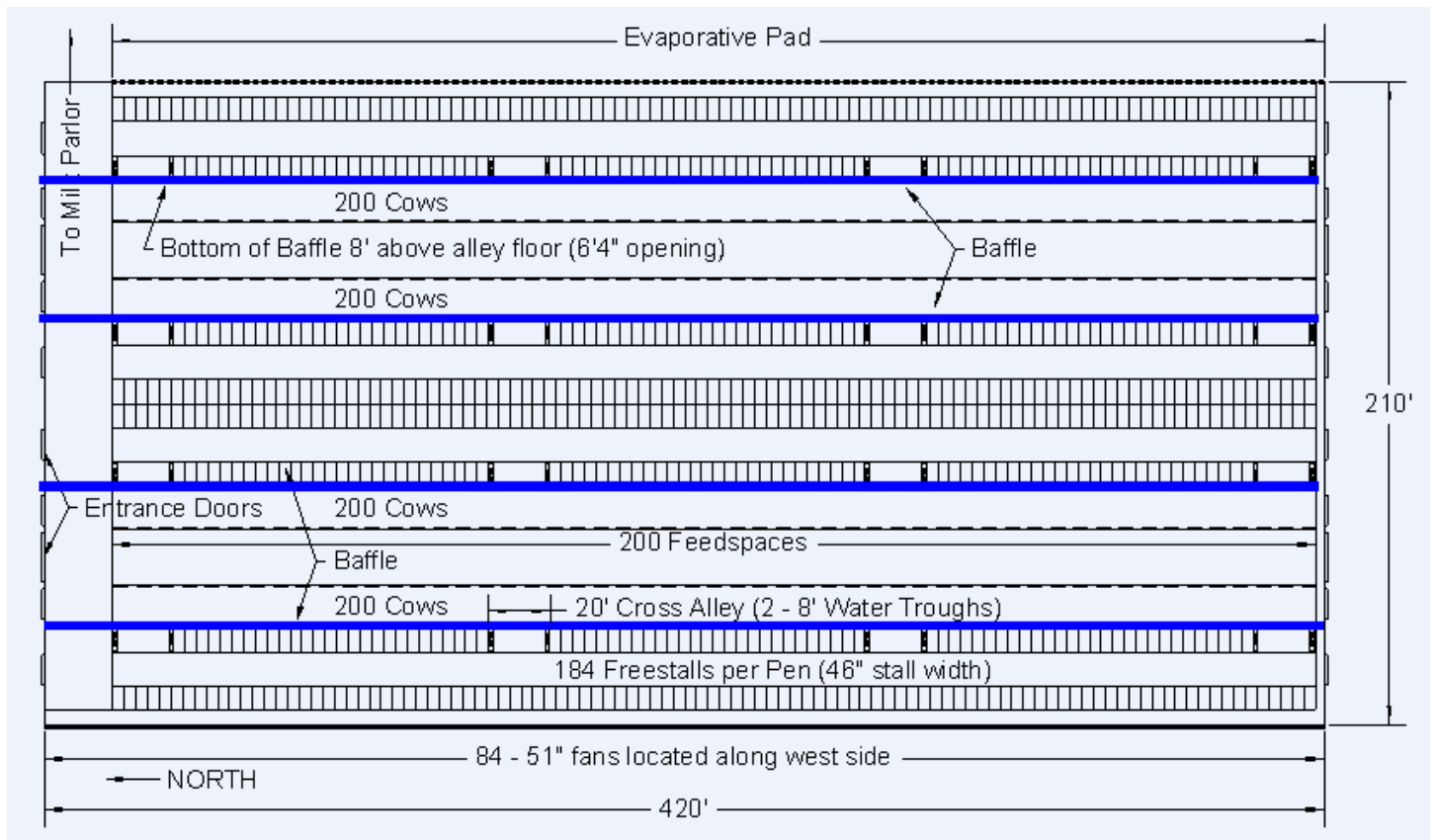


Figure 2

A layout of eight row LPCV buildings with tail to tail free stalls is shown in Figure 3. Notice the baffles located 8' above the alleys. They deflect the air down on the cows for more efficient cooling of the cows. Also the air flow hits the cow in the front or back so both sides of the cow are cooled in the free stalls and at the feed lane, unlike in a natural ventilated free stall barn or a tunnel ventilated barns where the air flow is to one side of the cows. Air speed is usually less than eight mph in the summer and low as 2 mph in the winter.

Cooling in LPCV barns is usually done by cooling pads. These fiber honeycomb pads are usually 8" thick and water trickles down the pads from the top to the bottom and un-evaporated water is re-circulated the large fans on the other side of the barn draw air from the outside through the pads and pickup water in the air, cooling the air which raises the humidity and is exhausted out through the fans air exchange is usually about once every 2 minutes.

Cooling can also be done via high pressure foggers (1500 psi) mounted from the ceiling which also evaporative cools the air and raises the humidity. Air is exhausted on the other side of the barn, but in this case

the system provides a open sidewall with a curtain controlled inlet that operates from September to May. It also allows some natural light into the barn which may impact the orientation of the LPCV.

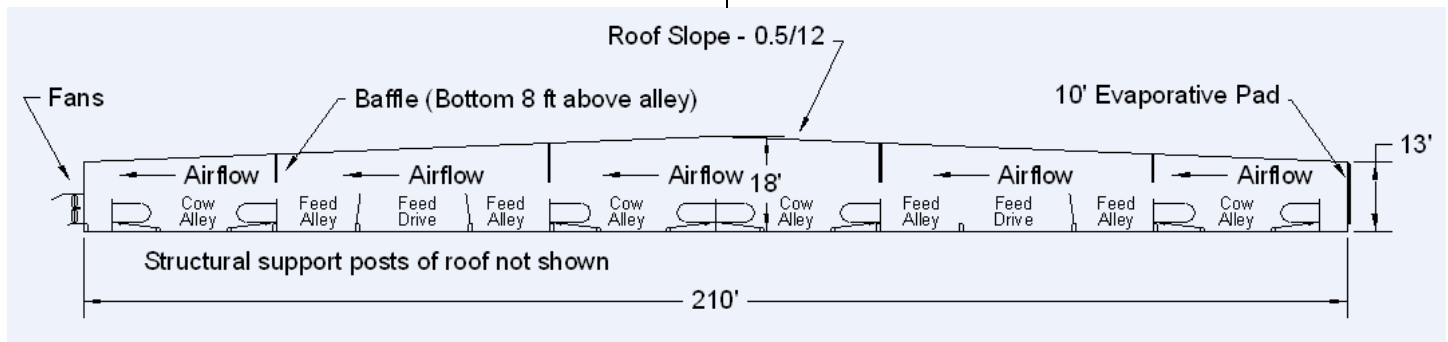


Figure 3

### If it Works in South Dakota, Will it Work in South Florida?

This seems like a great solution for the Midwest where winter is a much bigger problem than summer. In cold weather the pads are covered with a curtain and air inlets above them can be opened to produce fresh air and many of the fans are turned off and everything is great. Manure does not freeze on the floor, people are happy and the cows are happy.

The reason this cools in the summer is that it is not always hot and humid. This works great on a 90° day with low humidity. Once the humidity rises, it is like here; you must add water to the cow's back and have fans to dry the cows off and take the heat with it. Most of the hot weather there is hot but not humid for great lengths of time.

In the Southeast you would have to add feed line sprinklers to cool the cows both night and day. Air flow is usually about eight mph in LPCV which is probably not high enough to dry the water off the cows back. This not to say that larger fans could not be used to increase air flow to evaporate sprinkler water off the cows and cool the cows.

As with everything, it's what you like. How much money you wish to spend determines what you build. These LPCV barns may be less expensive to build than our tunnel barns; both need high priced roof insulation. The LPCV barns do not need side curtains because side walls are either fans or pads, and we would not need the 5' roof overhand to protect the fans shrouds from falling ice and snow off the roof.

If you wish to recycle sand, it can be done. One dairy we visited in southern Minnesota scraped manure into a water plume in the middle of the barn which removed it and sand was separated in a long lane like we do. Some go to a screw sand separator by the plume system or just screws moving the manure to the separator where water is added to remove the sand.

### Other Good Things About LPCV Barns in the Midwest

1. The cooling system adds no water to the floors or the waste management system; you would have to do it here.
2. You can use time-controlled lighting in these barns. The cooling pads reduce sunlight and the fans block sunlight. The ends are solid, not curtains. If properly installed this can increase milk production. There are many people out there that have a timed light scheme and many are wrong. If this interests you in whatever type of barn you have, contact us here at the Department of Animal Sciences and we will give you the proper specifications.
3. While I hate enclosed places, these barns with proper lighting and being wide give the feel of not being in a mushroom growing barn.
4. Because the climate is somewhat controlled, dairymen who have them say they have had better feed intake, higher milk production and reproductive success over their previous facilities.

### Other Observations

1. This is a gate nightmare. It seems like a 100 gates everywhere; cattle guards seem like a nice idea to me.
2. Because walking time is shorter in these facilities, the time cows are out of their pens may be less than traditional barns, which means all bedding and alley scraping must be done quickly.
3. I guess alley scrapers have not been perfected yet, but it seems like a better idea than skids steer loaders.
4. They will soon have skid steer Olympics in the Midwest. These guys are amazing, their spins and backups are great and when they go too far those air baffles keep score of the mishaps.
5. Lots of garage doors are needed to feed and bed cows. This leads to different barn designs to eliminate doors and still feed and bed cows. Every time a garage door is open the cooling system quits

because air is entering through open doors, not the cooling pads.

6. The first thing taught on a LPCV dairy is what to do when the power goes off, then lighting hits the generator. An emergency evacuation plan for cows and people is needed. In less than an hour everything inside will be dead if the fans go off. Some have kept lots of doors just for that reason.
7. The ingeniousness of dairymen never ceases to amaze me.

## Facing Cow Management Decisions with the New Cost of Production on Southeast Dairy Farms

Albert De Vries

The 2008 Florida Dairy Business Conference was held September 8 in Ocala and attracted over 70 participants from among dairy producers, allied industry, and educators. One theme of the conference was the increased cost of production in the Southeast and how that might affect your cow management decisions. Estimates from USDA show that the cost to produce one cwt of milk in FL and GA has increased by about \$4 in the last year and a half (Figure 1). The annual swings are a result of lower milk production in the summer.

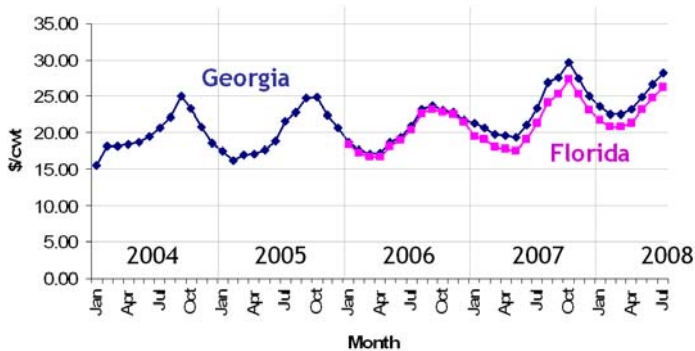


Figure 1. Total cost of milk production/cwt milk.

I put together a simple spreadsheet to evaluate how increased feed cost would affect feed cost per cwt of milk produced by days after calving (Figure 2). Figure 2 uses an equation from the book *Nutrient Requirements of Dairy Cattle*, a standard reference, to predict dry matter intake as a function of milk production, body weight, and days after calving. It is clear that early in lactation feed cost per lb of milk produced is lower than later in lactation. A simple explanation is that dry matter intake for maintenance is relatively independent of days after calving. So there is always a fixed feed cost just to keep the cow alive that does not yet support milk production.

Figure 2 shows that higher cost of dry matter (\$14/cwt dry matter) increase feed cost/cwt of milk later in lactation more than lower cost of dry matter do.

This means that it becomes relatively more expensive to milk cows later in lactation. Consequently, it becomes a little bit more important to have a fresh herd. For example, it becomes a bit more important to get cows pregnant early in lactation when feed costs are higher. The effect is quite small, however.

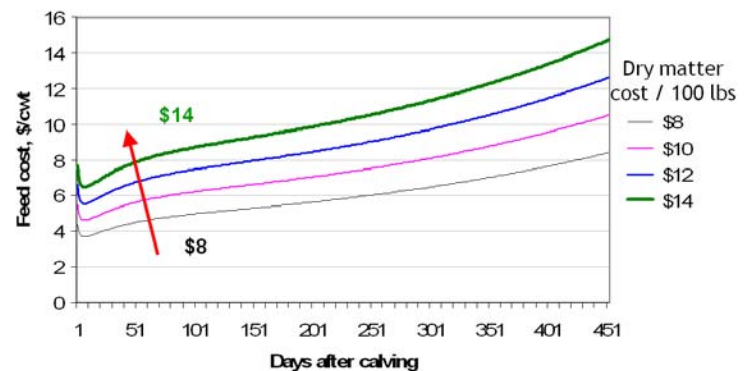


Figure 2. Feed cost/cwt milk by days after calving.

Increased feed costs have a greater effect on break-even milk yield to pay for feed cost. Figure 3 shows break-even milk yields for a cow that consumes 42 lbs of dry matter per day. Dry matter cost varies from \$8 to \$14 per cwt and milk price varies from \$19 to \$25.

Complete slides from this presentation and other slides and handouts from the 2008 Dairy Business Conference are posted at the Florida Dairy Extension website at <http://dairy.ifas.ufl.edu>.

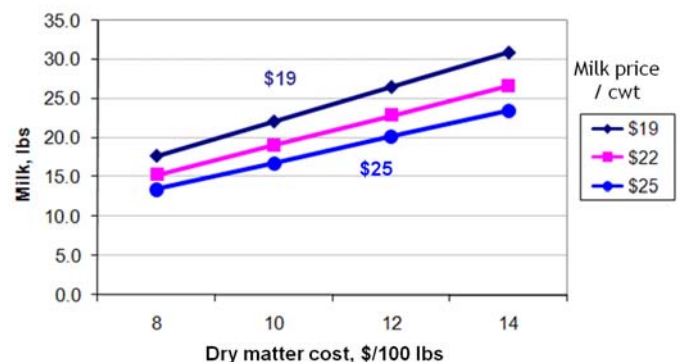


Figure 3. Break-even milk yield.

## Upcoming Dairy Meetings

- November 12-13, 2008: **Southeast Dairy Herd Management Conference** in Macon, Georgia.
- February 10-11, 2009: **20<sup>th</sup> Florida Ruminant Nutrition Symposium** in Gainesville, Florida.
- April 28, 2009: **46<sup>th</sup> Florida Dairy Production Conference** in Gainesville, Florida.

For more information, visit <http://dairy.ifas.ufl.edu> or contact Albert De Vries, [devries@ufl.edu](mailto:devries@ufl.edu).