



**ARIZONA AND NEW MEXICO
DAIRY NEWSLETTER**

**COOPERATIVE EXTENSION
The University of Arizona
New Mexico State University**

JULY 2004

THIS MONTH'S ARTICLE:
The Cows are Always Right!:
Evaluating Rations

M. B. Hall

University of Florida



AZ/NM Dairy Newsletter is Available via Email

If you would like to have the Arizona and New Mexico Dairy Newsletter sent to your email address, you now have that option. The newsletter will be available online several days before copies are sent through the US Postal Service. In order to change your subscription to the electronic version, contact Laura Rittenbach at 520-626-9382 or via email at ljr22@ag.arizona.edu.



New Mexico State University Extension Dairy Website: <http://www/nmsu.edu/~dairy>

The following videos are available for checkout from New Mexico State University. To obtain a video call Kathy Bustos, (505) 646-3326 or kbustos@nmsu.edu and the video will be sent in the mail, pending availability. There is only one copy of each video available, so we request that videos be returned within two weeks. Note that four of the videos contain an English and Spanish version.

1. The Milking School. Utah State University. Spanish and English. 30 minutes
2. Fitting and Showing Your Dairy Animal....A Winning Experience. Department of Dairy Science, University of Wisconsin. 20 minutes
3. Proper Milking Procedure. University of Florida. Spanish and English. 12 minutes
4. Milking Machine Maintenance. University of Florida. Spanish and English. 16 minutes
5. The Basics of Vacuum and Milking Systems. DHIA Services, 1991. 53 minutes
6. Understanding Dairy Cattle Behavior to Improve Handling and Production. Livestock Conservation Institute, 1992
7. Managing Milking/Ordenar Lecheria. Spanish and English. 1999. 33 minutes
8. Get Milk! Joining A Dairy Crew. University of New Hampshire, 1999. 45 minutes

Need to Calculate Production Costs?

University of Wisconsin dairy farm management specialist, Gary Frank, has developed a Excel spreadsheet to calculate variable cost of production and total cost of production. To access the spreadsheet, go to <http://www.wisc.edu/dairy-profit>, click on Decision Making Tools, then go to costcwt.xls.

ENGLISH

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, James A. Christenson, Director, Cooperative Extension, College of Agriculture & Life Sciences, The University of Arizona.

The University of Arizona is an equal opportunity, affirmative action institution. The University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, veteran status, or sexual orientation in its programs and activities.

SPANISH

Emitido en promoción del trabajo de la Extensión Cooperativa, leyes del 8 de mayo y 30 de junio de 1914, en colaboración con el Departamento de Agricultura de los Estados Unidos, James A. Christenson, Director, Extensión Cooperativa, Facultad de Agricultura y Ciencias de la Vida, Universidad de Arizona.

La Universidad de Arizona es una institución de oportunidades iguales y acción afirmativa. La Universidad no discrimina, en sus programas y actividades, por razones de raza, color, religión, sexo, nacionalidad de origen, edad, discapacidad, condición de veterano ni preferencia sexual.



University of Arizona
Department of Animal Sciences
P O Box 210038, Shantz Bldg, Room 205
Tucson, AZ 85721
Phone: 520-621-1923
Email: vanbaale@ag.arizona.edu



New Mexico State University
Extension Animal Resources
Box 30003 Dept. 3AE
Las Cruces, NM 88003

3rd Annual Arizona Dairy Production Conference

Thursday, November 4, 2004

Sheraton Phoenix Airport Hotel
1600 South 52nd Street
Tempe, Arizona
(480) 967-6600



Presentations and Speakers:

Facilities - Dry Lot vs. Saudis vs. Freestall

John F. Smith, Ph.D.

Professor/Extension Specialist - Physiology
Kansas State University

Cooling Decisions - ADS Shade Tracker vs. Korral Kool

Matthew J. VanBaale, Ph.D.

Assistant Professor/ Dairy Extension Specialist
The University of Arizona

National Identification Costs and Regulations

Robert Fourdraine, Ph.D.

Chief Operating Officer
Wisconsin Livestock Identification Consortium

Milk Price Futures from a Dairy Producer's Perspective

Dennis Kissler, CTA

Managing Trading Director/Chicago Mercantile Exchange Floor Trader
KIS Futures Trading, Inc.

Calf Growth and Management

Matthew J. Meyer, M.S.

Research Assistant
Cornell University

Milking Parlor Efficiencies

Normand St-Pierre, Ph.D.

Professor, Extension Dairy Specialist
The Ohio State University

For more information, contact Laura Rittenbach at
ljr22@ag.arizona.edu or (520) 626-9382

Conference registration forms available at
www.ag.arizona.edu/extension/dairy/conferences/conference1



Special Bid Sale



The University of Arizona is selling 80 milking cows from the Dairy Herd. The breakdown of the herd is as follows:

- * Age range: 2 years to 7 years
- * 23% of herd is registered pure bred with the Holstein Association USA, Inc.
- * Number of lactations per cow

1st Lactation Heifers	32%
2nd Lactation Cows	30%
3rd Lactation + Cows	38%

The cows have an estimated average value of \$2,000 each. The entire lot is appraised at \$160,000.

Minimum accepted bid: \$136,000

Interested persons must contact obtain
a bid package from Cecilia Ortega.

Telephone: 520-621-1754.

Email: cbortega@email.arizona.edu

Bids will close on Monday, September 13 at 5:00 p.m. Bids received after the closing date and time will not be accepted.

The Cows Are Always Right!: Evaluating Rations

Mary Beth Hall, Department of Animal Sciences, University of Florida, PO Box 110910,
Gainesville, FL 32611-0910. Phone: (352) 392-1958 FAX: (352) 392-5585
Email: hall@animal.ufl.edu

If you're going to evaluate how a ration is working in a herd, prepare to get manure on you. Much of the focus on ration evaluation has been on herd production and health records and feed analyses. These are very valuable tools, but you cannot properly evaluate rations without getting out among the cows that are eating them. An important part of evaluating a ration is directly assessing the feeds, management, and the interaction of the cows with what they are fed. This involves looking at cow behavior, bunk management, manure evaluation, water availability, rumination, cow appearance, body condition, cow comfort, feed availability, feed quality, and on. As you walk the herd, keep your senses (all of them, maybe excepting taste) open so you notice what is going on, and pick up on things that are normal and out of the ordinary. Use the information you gather in the barn to build a case: do the variety of pieces of information point the same direction, suggesting what should be changed or kept the same in the ration, feeds, and management? You should probably go out to the barns at different times of the day to see how things vary. Staying in the milk house or office won't give you all the information you need. So, let's get out there.

The Barn and Laneways

After checking to find out which groups have bulls in them, we go out to the barn. Take the route the cows have to go from the parlor to the barn or paddock. Take the time to be quiet and watch and listen:

- ✓ Do the cows appear to have comfortable, non-skid footing?
- ✓ Are there many rocks or holes in the laneways? How deep is the mud?
- ✓ How far do the cows have to walk from the parlor to their barn/corral?
- ✓ Is ventilation in the barn good?
- ✓ Are the cows using the stalls comfortably?
- ✓ Is the barn comfortable / are fans and cooling systems working?
- ✓ How many hours a day are the cows in the barn?

If cows can't breathe, rest, or walk comfortably, they are likely to milk less. A comfortable cow can put her energy towards making milk, rather than surviving her environment. Slick surfaces that make cows do a four-footed shuffle, rough surfaces that have them tip-toeing on sore feet, or deep mud that could suck the boots off of an unwary extension specialist make it more likely that the cows will make fewer trips to the bunk. Rocks in the laneways make for bruised feet and lameness. If you can't reasonably traverse the path from the parlor to pen, the cows are being asked to expend more energy than they should. Watch the cows as they move: they will tell you what's comfortable (perfect opportunity to use the lameness scoring system). The distance from the milking parlor to where the cows rest and eat determines how much additional energy they have to devote to walking over and above the base level included in maintenance requirements. That must be subtracted from the energy available for milk production. Cows don't appear to be as sensitive to ammonia as people are, but the humidity and odor in a barn can give an indication of whether the air exchanges are adequate.

Giving a cow a comfortable place to lie down, get off her feet, ruminate, and rest is crucial to keeping her healthy and productive. If cows are not using the stalls, if they are lying half in – half out of stalls, or if they just stand in the stalls, reassess whether the stall design, dimensions and bedding are what they should be.

Heat-stressed cows are more prone to ruminal acidosis, sorting their feed, and slug feeding. Just think: at the very least, if cows are panting or breathing heavily, they are not chewing their cuds, and this does not help rumen health. Keeping cooling systems in good working order is the best way to deal with heat stress. We do recommend that heat stress rations contain more potassium, sodium, and magnesium, and as much if not more forage, but any ration changes to deal with heat stress are just band-aids – you need to cool the cows. About forage and heat stress: feeding more concentrate during heat stress is a bad idea. There is no research information to support it. Since heat stress makes cows more susceptible to rumen acidosis, feeding them adequate fiber, more and more palatable forage, and possibly less starch can keep them healthier, they won't lose more milk than they would normally, but they'll be better prepared to perform when cooler weather comes.

If cows spend much time away from the barn, they have that much more time where they can't eat, drink or rest. Generally, the suggestion is that cows be grouped so that they spend no more than 2 hours per milking away from their barn. Anecdotally, the more time cows spend standing on concrete with no chance to lie down, the greater the chance of hoof problems.

- ✓ Waterers near the exit to the parlor?
- ✓ Are the waterers working, filling adequately, clean?

Milk is 87% water. No water, no milk. Period. Cows are lazy. The more convenient we can make it for them to have good, fresh water and feed when they want it, the better they will produce. Water intake can be affected by level of production, feed, sodium, and protein intake, and environmental temperature, not to mention the base amount of water that cows need for maintenance. Cows require about 0.36 gallons of water per pound of milk (NRC, 2001). That water can come from feed or drinking water. Water intakes under heat stress can increase by more than half, as temperature increases.

- ✓ Is there feed in the bunk? Is it well mixed? Particle size?
- ✓ Does the feed in the bunk look like the formulation on paper?
- ✓ Has the feed heated? Is it musty? Apparently palatable?
- ✓ Are there clumps of spoiled silage in the bunk?
- ✓ Is there adequate bunk space?
- ✓ Do cows have fresh feed available when they come back from the parlor?
- ✓ Is feed pushed up several times a day?

With the exception of those few managers who have figured out how to properly feed to an empty bunk, no feed means less milk. Granted you need to have animals to feed the weighback to, but having 3-5% of the feed left over that looks and smells like the feed you originally fed will help to assure that the cows get the feed they need to make milk, grow, breed, and gain body condition. TMRs should be well mixed, or what's the point? If the particle size is too fine, the animals may not get enough effective (chewable) fiber to keep their rumens functioning well, too coarse, and they will sort the feed. You can get an idea if the cows are sorting by watching them eat: If they nudge feed back and forth with their muzzles and then dive towards the floor, they are usually pushing forage out of the way and eating grain. Moistening the feed with water or a liquid feed (molasses? wet brewers' grains?) so it holds together, and then making sure most of the forage is cut so it is 1 – 2 inches long at most will help to prevent sorting. The feed in the bunk should resemble the formulation on paper. Check mixer weights and feed dry matters against the formulation.

If the feed has problems with heating or mustiness, you need to go look at the individual feeds to find the source of the problem. More on that later. If the feed is unpalatable, the cows will eat less of it. If it contains molds, you may be in for problems from mycotoxins. The clumps of spoiled silage that make it to the bunk, often from not cleaning the spoiled material from the top of the silo, can cause cows here and there in the herd to come down with diarrhea, because not all cows consume the spoilage.

If feed bunk space is limited, your cows may slug feed, eating large meals in short periods when they think that the getting is good. That could lead to ruminal acidosis, or lower feed efficiency. Making sure that fresh feed is available in the bunk each time the cows come back from milking, and pushing up at least once between feedings can help increase and even out the intakes. Just consider, when a cow comes back to the barn, if there is feed, she'll likely stand there and eat, if not, she'll probably go lie down. Once she lies down, it takes active effort for her to get up and eat once the fresh feed is delivered – she may not do it. If possible, adjust cow numbers per pen to increase bunk space per cow.

Many of those questions don't have to do with the ration, per se, but can affect their maintenance requirements, how well the cows eat, and their health.

The Cows

- ✓ Out of every 10 cows, how many are ruminating?
- ✓ Do the cows appear to be sorting their feed? What are they sorting for?
- ✓ Are cows eating dirt? Eagerly eating buffer or salt?
- ✓ Do the animals look dull, or bright and healthy?
- ✓ Are the cows nervous or calm?
- ✓ Is the average body condition score acceptable for the group? Is there much variation in condition score within a group?
- ✓ Are there many lame cows?

Rule of thumb is that, except for cows that are eating, sleeping or drinking, or if they are heat stressed, 4 to 5 of every 10 animals should be chewing their cuds. Cows may ruminate up to 10 hours a day, so don't tell yourself that it's long enough since feeding that they don't have to. If they are not ruminating, look farther for the cause. Cows sorting? Low effective fiber in the ration?

Cows have very few hobbies – checking fences, checking gates, leaning on people who step into their stalls, and sorting their feed. See the first section of this paper for more description on what to do to decrease sorting. If the cows are sorting their feed, the manure will be variable (possibly from stiff to diarrhea) in a group that is supposed to be eating the same ration and you will have no idea of what ration individual animals are actually eating. If cows are sorting, you've just hired every single animal as its own nutritional consultant. Cows are lousy nutritionists. Ruminal acidosis and digestive upset may be the consequence. So you need to find a way to come up with an appropriate ration that the cows can't sort to resolve this problem.

Cattle often eat dirt, or start consuming more salt or buffer when they have some form of digestive upset, or during heat stress.

Calmness, appearance and body condition: These are a matter of considering general animal health and how well the current ration and feeding system are meeting their requirements. Very variable body condition scores in a group raise questions about the management of moving cattle in the herd, or whether all animals are getting enough of the desired, unsorted ration. Could the diet be related to the cows' dull or bright appearance (excesses, deficiencies, or acidosis)? Cows being nervous may relate to ration, but more often it relates to how the employees work with the animals. Calm cows are easier to work with, and I would bet that they make more milk than nervous animals with the same potential. Screaming, yelling, running the animals, and general carrying on and cowboying (worst sense of the term) are counterproductive. Don't tolerate it.

Lameness suggests problems with ruminal acidosis, walking surfaces, or how much time animals spend standing on concrete, especially wet concrete. Find out which is the root of the problem, and see what needs to be done to fix it. Sore-footed cows will not be as likely to walk to feed, mount, etc. That can leave you with animals who prefer to slug feed and lay down, or just eat less. This is a great place to apply the lameness scoring system to get an idea of just where a herd stands, so to speak.

Manure Evaluation

Manure evaluation is a simple way to find out what a cow is doing with her ration. Changes in manure consistency and particle size can offer information about how well the rumen is working. If the rumen is working properly, there's enough forage/fiber in the ration, and feed/feeding management is good, the manure will be slightly stacked with two to three dimples on top, the fiber particles in the manure will be quite small, and there won't be lots of identifiable, undigested feed to be seen. If the rumen is not working well, such as during ruminal acidosis, the feed may pass undigested to the large intestine where it will ferment leading to foamy manure, diarrhea, mucin casts, and possibly a fair amount of identifiable, undigested feed in the patty. If there is no disease going through the herd at the time, the manure can tell a great deal about the ration.

In the barn or lot:

- ✓ Is the manure foamy with many trapped air bubbles?
- ✓ Is the manure very loose (diarrhea)?
- ✓ Is there much variation in manure consistency within a feeding group?

Foamy or very loose manure usually suggest that the rumen is not working well, such as during ruminal acidosis and more feed is being fermented in the large intestine. The gas produced by the hindgut bacteria is trapped in the manure and makes it foamy; the acid they produce (same acids as bacteria produce in the rumen) may be part of the cause of the diarrhea. Diarrhea can also be caused by cattle eating spoiled or moldy feed. If the manure consistency varies within a group, the cows are probably sorting their feed, and/or only certain animals consumed spoiled material.

- ✓ Are there pieces of “mucous” in the manure?
- ✓ Is whole or ground grain apparent in the manure?

The “mucous” sometimes seen in the manure are actually mucin or fibrin casts. They look a bit like sausage casings, ranging in length from short shreds less than an inch long, to tubes of material several feet long. They are not actually part of the intestine. If the lining of the intestine is damaged, the cow secretes mucin or fibrin over that damage. The mucin or fibrin takes the form of the section of gut it was in, and is eventually shed out into the manure. One reported cause of these casts is increased acidity in the large intestine – excessive fermentation in the large intestine would cause this. Mucin casts are taken as a sign of acidosis in the feedlot industry. These casts can show up in manure of any consistency. When you do a “toe test” and drag the tip of your boot across a cow patty, if something in the pile moves after your foot has moved past, it is likely a mucin cast.

Whole grain (corn, barley, wheat) that has not been properly processed before feeding often shows up in the manure. Unless the outer hull is cut, crushed, or otherwise damaged by processing or rumination, neither bacteria nor enzymes may digest it well. And it will show up in the manure. Back in the early 1900's, they used to have recommendations about how many hogs to stock with cattle if the cattle were fed unground corn.....

If appreciable ground grain is seen in the manure, it may be escaping the rumen too fast. A high producing cow may have a bit more ground grain in her manure because of a higher intake and higher rate of passage, and “a bit” may not be a problem. However, that grain does represent feed that was not digested never had the chance to support milk production. If the source of the undigested ground grain appears to be corn, and corn meal is fed, sieving the corn may give an idea of whether it should be ground finer so that it is better digested. Ground corn that does not pass through a number 4 or number 8 standard sieve represent partial kernels or coarsely ground corn. These are the particles that seem most likely to be visible in the manure. Finding much of them in a sample of ground corn suggests that the corn should be ground more finely.

- ✓ Is the manure very dry/stiff?

You expect manure like this in dry cows, not in cattle that are producing well. It may be due to not feeding enough protein, or rumen degradable protein.

How To: Evaluating Particles In Manure

The particles in feed tell how well things were digested in the rumen and the rest of the gut, but can be difficult to see, unless you rinse them clear of the rest of the manure.

- ✓ For each group of cows, take 4 or 5 samples of feces from individual cow pies: try to select for variation in appearance representative of the group. Make sure the samples are not contaminated with feed or bedding. Eight ounce sample cups with lids are very good sample holders.
- ✓ Fill the cup completely and cap. Filled cups can be placed in a breeding sleeve to be carried.
- ✓ Get a screen or kitchen strainer (do not return it to the kitchen) with 1/16 inch (1.6 mm) openings. This is a qualitative, on farm evaluation, so getting very specific about mesh size is not crucial. A strainer that is 7 inches (17.8 cm) in diameter and 4 inches (10.2 cm) deep works well.
- ✓ Transfer a manure sample into the strainer, using a steady stream of water to rinse the cup into the strainer. Rinse the sample gently but thoroughly until the water runs clear. Squeeze the water out of the sample and transfer it back to the sample cup so that all of the samples taken can be compared side by side.

Does fiber in the sample appear to be coarse (more than 0.5 inches long, whole pieces of corn stalk)? Does any cottonseed present still have the lint still on it? Does the feed retain its color (grass that’s still green, citrus that’s still orange, etc.)? Is there much (relative term) whole grain in the sample? Much ground grain? These things suggest that the rumen isn’t working well – feed left before it was well digested. Manure evaluation is qualitative, so you will need to assess whether there appears to be too much or an acceptable amount of coarser fiber or undigested grain in the manure. There is no common, on-farm way to evaluate the proportion of manure your samples represent, so do not try to over-interpret the information they offer.

My Observation:

Effectiveness of fiber to keep the rumen working well is not only related to particle size, but to a variety of factors that affect rate of digestion. For example, grass neutral detergent fiber (NDF) tends to ferment more slowly than does fiber in legume forages. Additionally, the particles from grass tend to be more needle-shaped, and those from legumes to be more square. In my experience, grass has tended to be a more effective NDF source than legume forages possibly because the fiber is retained in the rumen for a longer period of time. One to 3 inch long pieces of very tender or pliable grasses can sometimes be found in

the feces - they seem to be able to bend and escape the rumen. The NDF has to be in the rumen to be effective. A greater amount of NDF from a more rapidly fermented NDF source would have to be fed to provide the same amount of effective NDF as from a more slowly fermenting source. Take as an example that a small amount of chopped straw included in a ration can quickly resolve problems due to effective NDF inadequacy of the ration. Alfalfa can be an excellent feed, but it can be a poor choice as a major source of effective fiber. The need to provide adequate effective NDF to allow for proper rumen function and ration digestion is a balancing act with providing adequate nutrients. Best done with high quality forages and feeds in adequate quantities.

Feed Evaluation

- ✓ Are any of the feeds apparently moldy or spoiled?
- ✓ Do the feeds appear to contain any undesirable foreign material?
- ✓ Are older shipments of feed being rotated forward when a new shipment is brought in?
- ✓ Are feeds being fed in a timely manner so they do not spoil?
- ✓ Is the silo managed to keep a clean, undisturbed face?
- ✓ Can adequate amounts of silage be fed relative to the width of the silo to keep the face fresh and non-moldy?

These cover points of management needed to avoid feeding toxins, spoiled feed, or unpalatable feed to the cows. Your cows' intake, health, and production can depend upon it.

- ✓ Are the correct feeds being mixed in the right amounts and order?
- ✓ Are the mixer wagon scales accurate?

These simply verify that the ration on paper is translated into the ration the cows receive. Accurate weights are needed or else you've got no way to know what is being fed, what direction to consider changing the ration, or that the changed ration is actually what is being fed.

- ✓ How different is the particle size of silage in the silo from silage in the mixer?

Over-mixing, or adding the silage too early in the mixing sequence can grind the fiber and reduce particle size. Not a good thing if it means that the ground ration does not meet the cows' effective fiber requirements. On the other hand, hay may have to be added earlier in the mixing sequence to chop it finely enough so that the cows do not sort it.

- ✓ Are the feeds of adequate quality quantity to meet cow requirements over the course of a lactation/year, or will something run out?

Plan ahead for feed and forage supplies so that the cows can get a properly balance ration year round.

Pulling it Together

So, what to do with the information from evaluating a herd? Combine all the information on cow health (digestive upset, acidosis, laminitis, etc.), cow performance (milk and milkfat yields), rumination (at least 40% of cows not eating or sleeping should be chewing their cuds), cow observations (sorting the ration or not, comfortable or not), manure evaluation, ration & feed evaluation, etc. The story it tells gives a body of evidence that something within the ration or in cow and feeding management does or does not need to be modified.

Reference

National Research Council. 2001. Nutrient requirements of dairy cattle, 7th rev. ed. National Academy Press, Washington, DC.

HIGH COW REPORT

JUNE 2004

MILK

Arizona Owner	Barn#	Age	Milk	New Mexico Owner	Barn #	Age	Milk
* Saddle Mountain Dairy	2397	4-00	43,370	* Providence Dairy	4250	4-09	39,330
* Saddle Mountain Dairy	2271	2-00	37,710	* Hide Away Dairy	4034	5-06	38,360
* Triple G Dairy Inc	2340	4-02	37,450	* Providence Dairy	8715	4-00	38,170
* Saddle Mountain Dairy	2248	3-02	37,340	* Providence Dairy	8051	-----	37,860
* Mike Pylman	4688	6-02	37,120	* Hide Away Dairy	4861	4-03	37,450
* Stotz Dairy	16089	3-08	36,810	* Providence Dairy	8065	-----	37,350
* Stotz Dairy	19813	4-04	35,450	* Hide Away Dairy	954	10-9	36,620
* Triple G Dairy Inc	1911	5-09	35,390	* Providence Dairy	7067	6-11	36,590
Goldman Dairy	3036	6-04	35,130	* Hide Away Dairy	5056	4-03	35,930
* Withrow Dairy	2619	4-05	34,920	Pareo Dairy	8004	4-04	35,893

FAT

* Stotz Dairy	19813	4-04	1586	* Goff Dairy	16540	4-03	1377
* Stotz Dairy	16089	3-08	1495	* Hide Away Dairy	4034	5-06	1376
* Triple G Dairy Inc	2340	4-02	1400	Pareo Dairy	8616	7-05	1369
* Saddle Mountain Dairy	9440	5-09	1365	* Hide Away Dairy	3801	5-06	1360
* Mike Pylman	172	3-03	1355	Pareo Dairy	1178	5-09	1335
* Triple G Dairy Inc	1911	5-09	1334	Breedyk Dairy	7685	6-06	1320
* Mike Pylman	5552	5-04	1334	* Hafliger Dairy	7437	5-06	1300
Shamrock Farm	8533	2-00	1323	* Providence Dairy	7795	5-05	1297
* Stotz Dairy	13383	5-08	1323	Pareo Dairy	2087	5-02	1294
* Triple G Dairy Inc	1311	4-00	1297	Pareo Dairy	8648	7-05	1292

PROTEIN

* Triple G Dairy Inc	2340	4-02	1136	* Providence Dairy	4250	4-09	1202
Shamrock Farm	J580	7-09	1092	* Hide Away Dairy	5091	4-03	1176
Shamrock Farm	K767	7-05	1076	* Hide Away Dairy	4034	5-06	1134
* Triple G Dairy Inc	1911	5-09	1070	* Providence Dairy	7729	5-07	1127
* Saddle Mountain Dairy	2397	4-00	1066	* Providence Dairy	7795	5-05	1120
* Stotz Dairy	19813	4-04	1052	* Providence Dairy	8051	-----	1107
* Triple G Dairy Inc	1311	4-00	1050	* Goff Dairy	16540	4-03	1106
* Mike Pylman	4688	6-02	1031	* Hide Away Dairy	4336	5-06	1098
* Triple G Dairy Inc	3154	3-11	1023	* Hide Away Dairy	3801	5-06	1086
* Stotz Dairy	16089	3-08	1023	* Hide Away Dairy	4861	4-03	1083

*all or part of lactation is 3X or 4X milking

ARIZONA - TOP 50% FOR F.C.M.^b JUNE 2004

<u>OWNERS NAME</u>	<u>Number of Cows</u>	<u>MILK</u>	<u>FAT</u>	<u>3.5 FCM</u>	<u>CI</u>
* Stotz Dairy West	2,082	27,206	982	27,682	15.2
* Red River Dairy	4,490	26,403	951	26,832	13.5
* Triple G Dairy, Inc.	4,092	25,334	943	26,240	13.9
U of A Holsteins	165	25,275	888	25,323	14.4
* Treger Holsteins, Inc.	603	25,233	875	25,094	14.2
* Mike Pylman	4,123	24,954	881	25,071	14.3
* Danzeisen Dairy, Inc.	1,397	24,263	888	24,886	14.1
Yettem Dairy	2,771	20,956	966	24,720	13.1
* Stotz Dairy East	1,181	24,006	847	24,110	15.0
* Arizona Dairy Company	5,787	23,907	840	23,954	13.9
* Del Rio Holsteins	831	22,572	800	22,728	13.1
* Withrow Dairy	5,071	23,715	769	22,720	13.0
* Saddle Mountain Dairy	2,676	23,761	762	22,626	13.9
Paul Rovey Dairy	386	22,155	797	22,499	13.5
* Zimmerman Dairy	1,102	22,363	790	22,476	14.8
* Butler Dairy	612	22,941	772	22,434	14.3
* Dairyland Milk Co.	2,732	22,963	764	22,314	13.6
* DC Dairy, LLC	1,056	21,977	788	22,276	13.4
* Hillcrest Dairy	2,308	22,724	758	22,113	14.1
Shamrock Farm	7,962	22,117	752	21,753	13.7
Goldman Dairy	1,930	21,508	740	21,295	13.8
* RG Dairy, LLC	1,232	21,381	743	21,289	13.7
Lunts Dairy	540	20,682	747	21,052	13.7
* Parker Dairy	4,228	20,397	733	20,702	14.7
* Dutch View Dairy	1,586	20,629	718	20,559	13.3

NEW MEXICO - TOP 50% ACTUAL MILK JUNE 2004

<u>OWNERS NAME</u>	<u>Number of Cows</u>	<u>MILK</u>	<u>FAT</u>	<u>3.5 FCM</u>	<u>CI</u>
* Pareo Dairy #1	1,431	26,058	933	26,769	14.8
* Providence Dairy	2846	26,762	836	25,128	13.5
* Tallmon Dairy	470	26,018	851	25,050	14.9
* Hide Away Dairy	2,076	26,126	837	24,870	--
Ken Miller	407	24,834	864	24,749	14.7
* Macatharn	1020	24,980	849	24,569	14.1
* Do-Rene	2243	24,569	840	24,245	13.9
* New Direction Dairy 2	1,847	23,417	862	24,104	14.4
* Pareo Dairy #2	3,053	23,361	844	23,788	14.0
* New Direction Dairy 1	37	22,925	851	23,713	15.2
* Wormont Holsteins	1,390	22,721	830	23,284	15.2
Prices Roswell Farm	2739	22,789	806	22,924	13.4
* Halflinger Dairy	1,967	22,323	814	22,852	13.8
* Goff Dairy 1	4158	22,331	811	22,807	14.5
* Milagro	3301	22,699	797	22,739	13.2
Vaz Dairy	1,817	23,263	781	22,724	14.0

* all or part of lactation is 3X or 4X milking

^b average milk and fat figure may be different from monthly herd summary; figures used are last day/month

ARIZONA AND NEW MEXICO HERD IMPROVEMENT SUMMARY FOR OFFICIAL HERDS TESTED JUNE 2004

		ARIZONA	NEW MEXICO
1	Number of herds	50	31
2	Total cows in herd	76,348	60,201
3	Average herd size	1,527	1,942
4	Percent days in milk	89	87
5	Average days in milk	228	201
6	Average milk - all cows per day	60.8	62.6
7	Average percent fat - all cows	3.60	3.43
8	Total cows in milk	68,424	51,885
9	Average daily milk for milking cows	66.6	72.4
10	Average days in milk - 1st breeding	86	72
11	Average days open	162	146
12	Average calving interval	14.1	13.9
13	Percent somatic cell - linear 0-4	88	84
14	Percent somatic cell - linear 5-6	8	10
15	Percent somatic cell - linear 7 & above	5	4
16	Average previous days dry	62	62
17	Percent cows leaving herd	32	31
		STATE AVERAGES	
	MILK	21,645	23,059
	Percent butterfat	3.59	3.54
	Percent Protein	2.92	3.00
	Pounds fat	780	813
	Pounds protein	651	701



THE UNIVERSITY OF
ARIZONA®

COOPERATIVE EXTENSION

Department of Animal Sciences
PO Box 210038
Tucson, AZ 85721-0038

Phone: 520-626-9382
Fax: 520-621-9435
Email: ljr22@ag.arizona.edu

UPCOMING EVENTS:

Arizona Dairy Production Conference

Tempe, Arizona

November 4, 2004