

# Grouping Strategies For Dairy Cattle

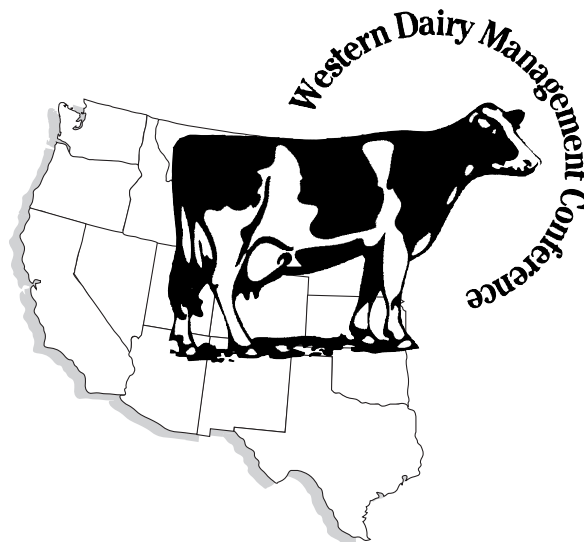
Panelists:

Arnaldo Burgos, M.S., President,  
Dairy Nutrition Services, Chandler, AZ

Bill Stouder, D.V.M. and dairyman,  
Stouder Holsteins, Wendell, ID

Coordinator:

Ronald L. Boman  
Extension Dairy Nutritionist,  
Utah State University, Logan, Utah  
801-797-2163



# Grouping Strategies For Dairy Cattle

**O**pen-lot corrals, freestall housing and TMR feeding dictate that dairy producers adopt appropriate grouping strategies for feeding, milking, and managing dairy cattle. Proper grouping allows a producer to more closely approximate the feed consumption and cow activity requirements of individual cows. Herd size and physical facilities often limit the number of possible groups.

## A. Dry Cow Groups:

Dry cows must be separated from the milking herd and ideally they will be further separated into "far-off" and "close-up" groups.

1. The "Far-off" or recently dry group of cows need a chance for the rumen to rest and recuperate from high energy rations. Long stemmed hay (with no concentrate or only limited amounts to supply the needed vitamins and minerals, and to maintain body condition) is the feed of choice to allow the rumen epithelium to regenerate itself.

2. Two to three weeks before calving the dry cows and springing heifers should be moved to a "Close Up" group. Here the ration changes with a reduction in long stemmed forages to include ingredients that will be present in the next group (Transition, High rations), as well as the use of anionic salts.

## B. Milking Cow Groups:

1. The "Transition or Fresh Cow Group" (where cow numbers and facilities permit) should be made up of cows that are within the first two weeks of their lactation. Dry matter intake of this group is low relative to their requirements. Therefore, ration protein and energy, and effective fiber should exceed that of the high cow ration. This can be accomplished by including higher levels of protein (especially rumen undegradable protein), added fat, and some long stemmed hay. Higher levels of micro-nutrients and certain feed additives are added to compensate for the lower feed intake during this

period of transition.

2. The "Early Lactation or High Cow Groups" are made up of cows that have been 'transitioned' or somewhat adjusted to the higher energy/minimum fiber ration that these cows will receive. This ration is usually formulated for maximum milk production (90-120+ lbs). Cows stay in this grouping based on level of milk production, body condition, and reproductive status. Some high producing cows, that are not over conditioned or that are receiving rBST, may stay in this grouping for most of their lactation.

3. The "Heifer Group" is where all first lactation cows are kept together for the entire lactation. The grouping is popular where cow numbers and facilities permit. First lactation cows are smaller and usually less aggressive eaters. By grouping them by themselves they do not have to compete with bigger cows and are more free to eat, lie down, and chew their cud and make milk. They are growing and need extra nutrients for growth and are more persistent milkers (flat lactation curve). They usually stay in this group for the complete first lactation. Some producers will include smaller second lactation cows in this group depending on cow numbers and other conditions specific to a particular operation.

Some producers don't use this grouping because they find that 'first calf heifers' quiet down faster and are more easily managed when housed with older cows.

4. The "Middle Lactation or Production Group," where cow numbers and facilities permit, is usually designed for pregnant cows in adequate body condition that have peaked in milk production and are still producing moderately well. Feed costs can usually be reduced by having this group, if enough cows fit into this group to justify the extra ration mixing and feeding.

5. The "Late Lactation, Production, or Conditioning Group" is designed for pregnant cows of sufficient body condition that are close to being dried off. Feed cost savings can be realized with this group by lowering ration protein and energy density and using more forage in the



ration. Recent research from Arizona indicates that over-conditioned late lactation cows in adequate body condition receiving rBST produce as much or more milk on a low grain (10 lbs) ration as on a moderate grain (20 lbs) ration.

The higher production levels maintained in most herds (through rBST usage, high genetic potential, and superior management) have nearly eliminated the need for the last two groups.

### **C. Other Grouping Considerations:**

1. Grouping is a tool to help in the overall quality of management of the dairy farm. Regardless of the number of groups sufficient feed manager and watering space must be provided. The very best grouping arrangement will not substitute for quality of nutrition and feed bunk management.

2. Avoid moving cows indiscriminately from one group to another. Move more than one at a time and when cows are otherwise occupied.

3. Cows per group are usually multiples of the number of parlor units.

4. Herd production simulation models indicate that the most effective grouping strategies are based on required nutrients (energy and protein) per unit of dry matter intake.

### **D. Stouder Holsteins Grouping Philosophy**

There seems to be many opinions on the best method of grouping lactating cows. It has been suggested that grouping can be made by (1) milk production, (2) by age or parity of the animals, (3) by time of calving, (4) by udder quality and/or somatic cell counts, or (5) by body condition score. Although these are the most recommended methods, in reality, I'm sure there are numerous other methods that have proven useful.

I would like to describe the thinking that has gone into choosing the methods that are employed at Stouder Holsteins regarding grouping cows. Stouder Holsteins is a 600 cow 2X milking herd. The milking parlor is a double-12 herringbone utilizing one milker per milking. There is a holding pen which will accommodate no more than 130 cows. There are 5 lactating corrals with a feeding area in each of 305 feet in length. There are shades in each corral with a total area of shade of 6,250 square feet. In one corral, there are 150 self locking stanchions; in the other 4 corrals, there are 120 self locking stanchions. In addition, there is a small corral which is used for just fresh cows and treated cows. From the information above, it becomes necessary to have +120 cows per corral for proper usage of the barn, the holding area,

the feeding area, and the comfort areas. This then is my first point – Grouping strategies need to consider the dairy facility when they are made.

After establishing our need for nearly equal groups of approximately 120 cows, we then considered grouping strategies that would complement our style of dairying. Our philosophy of dairying is to maximize production to the fullest as long as our input costs continue to justify more production. At present, our RHA is 24,200 pounds of energy-corrected-milk; we feed a TMR which includes alfalfa haylage, alfalfa hay, and grain; we breed the entire herd by A.I. using both proven high PD sires and a percentage of young sires with high predicted PDs; we replace with our own heifers; and we strive to keep our income over feed costs at more than 55% of our gross income. This then is my second point – Grouping strategies need to complement a dairy's needs. In our case, we need to (1) make adequate space for maximum dry matter intake by all animals to maximize production (2) make lockup room for the entire herd to maximize management of our reproductive program (both estrus detection and physical breeding of the cows); and (3) maximize the genetics of our entire herd but especially the first lactation heifers.

After establishing the facility's and herd's needs, thought must be done to consider how grouping strategies will actually get done the most efficiently on the dairy. In our case, our milking parlor utilizes one milker per milking. The partners of our dairy are three sons, myself and my wife. All work actively on the dairy but not in the parlor. One son feeds the cows, one together with myself handles the reproductive and health areas, and the other son handles the calf feeding and the office management. In addition, we hire two outside men to assist wherever needed. Therefore in our case, it doesn't make sense to ask the milker to hold any cows in the parlor so that these cows can be moved to another string. Because there is much more help outside, moving cows needs to be done while strings of cows are locked up outside. This then is my third point – Grouping strategies need to complement the personnel of the dairy.

These three considerations should assist a dairyman in developing a personal grouping strategy. As with all other dairy management programs, there is no right or wrong method. Each dairy manager should develop programs that make sense for the dairy after considering physical facilities, management goals, and dairy personnel. Grouping strategies as all other management programs can't be made at the coffee shop, from the printed page of a dairy publication, or from a panel discussion

that occurs at the Western Large Herd Dairy Management Conference. Any of these forums can give food for thought processes, but ultimately the dairy manager will have to think out a rational program for his/her herd if it is to be successful.

And finally, after developing a grouping strategy, the process needs to be done regularly. A dairy is in constant flux (the status of cows are continually changing). Cows freshen; cows move past their voluntary waiting period and need to be bred; cows get pregnant; cows need to be dried; cows need to get warmed up prior to calving; and cows freshen again. During this cycle, some cows will develop health problems and have to be moved to a hospital string and then be moved back to a milking string and some cows will need to be culled. Therefore the grouping of cows is always necessary. It is my feeling that grouping needs to be done as regularly as the reproductive program, the drying off of cows, and the culling of cows. To recap, my last point is – Grouping of cows must be done on a regular basis.

### E. Stouder Holsteins Grouping Strategy

We group lactating cows in the following way:

1. A first lactation high production string.
2. A high production string of second lactation and later cows that are less than 100 days in milk.
3. A middle production string of second lactation and later cows.
4. A low production string of second lactation and later cows.
5. A low production string of primarily first lactation cows, but may include some second lactation cows.

All of these strings will contain approximately 120 cows. Strings 4 and 5 will contain cows that are to be dried or culled. This then is our method for grouping on a regular basis. On alternate Mondays, the reproductive herd health program and the administration of rBST occurs. Herd test day also occurs on one Monday each month. On every Monday, close-up cows and heifers (approximately 14 days pre-partum) are moved from the far-off dry pen to the close-up pen. On every Tuesday, cows from strings 4 and 5 are dried and moved to the far-off dry pens. Also on Tuesdays, culling is done as necessary. It then has become a regular process to regroup the milk cows strings every Wednesday. This process is accomplished by determining the number of cows in each string. A computerized list is then produced that will list in descending order of ECM Relative Value of (1)

all heifers in string 1 that are over 150 days in milk, (2) all cows in string 2 that are over 90 days in milk, and (3) all cows in string 3 that are over 180 days in milk. This list includes cow identification, days in milk, days since bred, pregnancy status, all test days of milk, fat %, protein %, somatic cell count, relative value, lactation number and last body condition score.

We always try to keep the two low strings full. In this way, we minimize our feed costs by feeding as much low cow TMR as possible. Also in this way we try to make as much room as possible in the higher producing strings for the best feeding room and the most comfort for the highest producing cows. At times, there are so many cows coming fresh that there are more than 600 cows milking. If any strings will have to be fuller than 120, we only over-fill the two lower strings. These two strings contain mostly pregnant cows or cows that are to be culled so that estrus detection is less likely to be compromised by more cows than lockups. Also these cows usually have the most body condition so that overcrowding at the feeding area is less likely to affect their production. Likewise, by keeping the low strings full, we maintain as much room in the high production strings as possible for fresh cows and heifers that are entering these pens after their milk is determined to be safe to go to the bulk tank.

The reproductive program is helped by our method of grouping also. All first service inseminations are made in strings 1 and 2. The repeat inseminations should occur in either of these strings or in string 3. Therefore the cows are grouped so that the most estrus eligible cows will be together. It has been shown that the more cows in estrus together, the more likely they are to exhibit the signs of heat.

This grouping strategy works for us. It accomplishes the goals that we want to attain. It seems to be correct for us. Whether it will work for any other dairy is immaterial since it is our strategy. As stated before, every dairy must develop its own strategies to accomplish the goals that management has developed for it. If the goals of that dairy are reached, then the strategies are sound - at least until the goals change and additional steps to management strategies are needed to reach the higher goals that have been developed.



---

# Notes

# Notes

*The Organizing Committee of the 3rd Western Dairy Management Conference wishes to thank the following companies and organizations, without whose generous financial support this event would not have been possible:*

A.L. Gilbert & Company  
 ABS Global, Inc.  
 Ag-Nomics Research, Inc.  
 Agpro, Inc.  
 Agrimerica, Inc.  
 Alfa Laval Agri, Inc.  
 Alltech Biotechnology Center  
 Alta Genetics - Landmark Division  
 Aurora Dairy Corporation  
 Babson Bros. Co.  
 Bank of America  
 Bou-Matic, Dairy Equip. Co.  
 Calf-Tel By Hampel Corp.  
 Church & Dwight Co., Inc.  
 Circle B Agricultural Products  
 CMW Nutrition  
 Conewango Products Corp.  
 Custom Dairy Performance, Inc.  
 Dairy Health Equipment Service  
 Dairy Information Technologies/TDHIA  
*Dairy Profit Weekly*  
*Dairy Today Magazine*  
 Degussa Corporation  
 DHI-Provo Computing Service  
 Diamond Crosss, Inc.  
 Diamond V Mills, Inc.  
 Ecolab  
 Elanco Animal Health  
 Farm Progress Publications  
 Five-G Consulting  
 Foster Commodities  
 Genex Cooperative, Inc.  
 Genske, Mulder & Co. CPAs  
 H.J. Baker & Bro., Inc.  
 Hi-Lite Rubber/Milk-Rite USA  
*Hoard's Dairyman*



Holstein Association USA, Inc.  
 I.D.Ology  
 Ivy Laboratoies, Inc.  
 J.R. Simplot Company  
 Kansas State University  
 Land O'Lakes, Inc.  
 MacGowan-Smith, Ltd.  
 Merrick's, Inc.  
 Mid-America Dairymen, Inc.  
 Min-Ad, Inc.  
 Mohrlang Mfg., Inc.  
 Monsanto/Protiva  
 Mueller Corporation  
 Nutrius  
 Oregon State University  
 Performance Products, Inc.  
 Pharmacia & Upjohn Animal Health  
 Prod. Credit Ass'n. of So. New Mexico  
 Ranch-Way Feed Mills  
 Rhone-Poulenc, Inc.  
 Roche Animal Health & Nutrition  
 Sire Power International, Inc.  
 Southeastern New Mexico  
 Public Service Co.  
 S.W. Nebraska Dairy Recruitment  
 SSI Corporation  
 The Schlueter Co.  
 Uniform-Agri, Inc.  
 United Dairymen of Arizona  
 University of Arizona  
 Veterinary Concepts  
 West Agro, Inc.  
*The Western Dairyman Magazine*  
 Westfalia Systemat, Inc.  
 Zaugg Dairy Nutrition  
 Zinpro Corporation

# **Do You Need More Copies Of These Proceedings?**

Additional copies of the  
proceedings of the 3rd Western  
Dairy Management Conference are  
available for \$20 each by contacting:

**Dr. John Smith**  
**Dept. of Animal Sciences & Industry**  
**126 Call Hall**  
**Kansas State University**  
**Manhattan, Kansas 66506-1600**  
**(phone: 913-532-2370)**

