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EC86-261 Goals for Profitable Dairying

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GOALS for *PROFITABLE* DAIRYING

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Goals for Profitable Dairying

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This publication focuses on your objectives as the operator of a dairy farm business, such as establishing strategies that will result in long term profits and a comfortable way of life.

Family goals and expectations of what the dairy business can achieve will influence how it is operated. Discussing your objectives for the business and how the business can contribute to your family and personal goals is helpful. Production methods can then be related to these specific goals.

The most basic planning question to address is, "Where am I going?" This establishes overall objectives and long term goals. Two related questions are: "How do I plan to get there?" and "When do I plan to arrive?" Once you have answered the first question you can begin to incorporate production techniques into the planning process to address other questions. For example, higher production per cow can contribute to a higher income goal. This might be achieved by increasing average production a specified percentage each year for five years.

Some goals require considerably longer to achieve than others. Increasing net worth and/or reducing debt, or increasing milk production per cow by improving the genetic base of the herd are generally long term goals. Reducing somatic cell count can be achieved in less time and curbing calf losses can be done quickly once the problem areas are identified.

Answers for the basic questions will contribute to business achievement and family well being. Achievement will be greater if everyone involved in the business has a clear understanding and agreement with priorities.

In a dairy operation, there are many detailed activities involved in the production process. Many of these details, such as milking procedures and heat detection, need to be addressed each day. One of the most important aspects of planning a successful business is understanding how these detailed components contribute to profitability and other business goals.

The details of carrying out the production process offer an opportunity for each member of the family to contribute to the part they most enjoy.

Profit Factors

Long range plans include establishing goals for the size of farm, financial structure, overall method of production, standard of living, risk posture and asset re-

placement strategy. Short run plans include crop acreages, number of livestock, marketing plans, and risk management strategies.

Once some guidelines have been established for long- and short-range goals, look at specific factors that will contribute to success. In a dairy operation the basic objective is to convert feed products into milk and profits with minimum capital input.

Production factors that influence this objective include:

1. Nutrition levels. The grains, concentrates, forages and other supplements used in the dairy ration.
 2. Health maintenance. Includes routine veterinary herd health as well as heat and pregnancy checks.
 3. Raising dairy replacements. Making sure replacements get off to a good start is essential for future profitability.
 4. Reproductive performance and genetic potential.
 5. Environment. Includes physical facilities, and overall animal conditions and how these contribute to production and profits.
 6. Milking and milk handling procedures. Includes maintenance and sanitation of milking facilities and equipment as well as milking procedures.
- The economic factors which influence profits include:
1. Production per cow (milk, fat, protein or solids not fat).
 2. Herd size.
 3. Cost of replacement capital which includes livestock and equipment.
 4. Cost of purchased inputs (labor, feed, utilities, etc.).
 5. Interest rate on borrowed money.
 6. The average price received for your product.

Establish goals for each of these factors. Goals must be consistent with the overall goals the family has established for the business and their personal life. Job descriptions should be in writing with specific responsibilities listed for each person. These job descriptions should be reviewed and updated yearly to document achievements and pinpoint problem areas for additional emphasis during the next year.

Production-related goals will establish a means of evaluating effectiveness and efficiency of the production process. If income is not adequate to meet production costs, debt obligations, and family living costs, the problem may be attributed to not meeting one or more of the production goals.

Guidelines listed in the following sections will help producers establish achievable goals for each of these production and economic factors.

I. Financial Goals

The obvious financial goal is to have a net profit after operating and fixed costs have been deducted from gross receipts. Management returns should increase yearly. Another general financial goal is generation of a return on investment comparable to the return that would be generated by other farm or non farm investment of capital.

1. Capital turnover is the ratio of total revenues divided by the value of assets being used in the business or the value of capital managed. This includes the value of rented property because it is a form of capital that is being used to generate income. To be profitable this should be at least 25% and possibly as high as 50% depending on the land base involved in the dairy operation. A ratio of 25% indicates it takes four years to turnover the total volume of capital being used.

2. Percent debt is the total liabilities divided by the total value of assets owned. A reasonable goal is 40% or less.

3. The current ratio is the value of current assets (items that can be converted into cash within the next year but not including breeding stock) divided by current liabilities or debts due within 12 months. The reasonable goal is a ratio of 2.0 or more. This allows a cushion if there is a decline in the value of assets, like grain, and leaves a positive margin to purchase additional operating inputs such as feed and fertilizer.

Cash Expense Goals

1. Cash expenses as a percentage of cash receipts. A goal of 75% or less will allow a margin for fixed costs reinvestment and family living.

2. Feed costs, (the value of grain and purchased concentrates) as a percentage of milk sales. The goal should be 20% or less.

3. Labor utilization. A goal of 600,000 lb. of milk yearly for a full-time worker equivalent. A worker is usually defined as 3,000 hours of work yearly.

II. Goals That Can Help Reduce Feed Costs

1. Harvest hay crops at an immature state. This reduces the need for protein supplementation and the amount of grain ration needed.

2. Use recommended ensiling methods. Properly sealed stacks and bunkers can save \$3 to \$6 per ton when compared with no cover or a poorly applied plastic.

3. Forage test and balance rations carefully.

4. Save on home-grown forages. Determine the true costs of producing forages and select those that contribute to lowering feed cost.

5. Save on energy feeds. Watch prices when buying

grains such as milo, oats, and corn and substitute as prices favor different feeds. Keep alert to "good buys" in by-product feeds such as distillers grains, corn gluten feed, soyhulls, and hominy feed.

6. Reduce cost of protein supplements. Include urea or ammoniated silage when it fits the feeding program. Select forages with high protein, especially when protein supplements are expensive. Avoid over-supplementing with protein by reducing the amount in rations of late-lactation cows.

7. Avoid over-supplementation with minerals and vitamins. Purchase minerals and vitamins from reputable sources which offer products at the lowest per unit cost and remove from the ration when no longer needed.

8. Avoid wasting grain ration. Watch the level of grain feeding, especially when high quality forages are fed. As production begins to drop and lactation length increases, reduce grain. Develop a feeding method which facilitates controlling grain feeding levels to meet each cow's needs but avoids excess.

9. Don't overlook heifer feeding. In most herds more attention to the cost of the heifer raising program can yield large savings and contribute to lowering feed cost. Proper heifer feeding also yields better dairy replacements at an earlier age.

III. Improving Dairy Herd Health

Veterinary practices on the dairy farm must be properly timed to maintain a healthy herd. Most important factors are prevention, early problem diagnosis and treatment. Losses from disease are substantial since over 15% of dairy calves die before they are three weeks old and losses from mastitis alone are estimated at \$175 per cow per year. A herd health program must be designed to have a healthy calf born and mature into a productive cow.

The veterinarian should plan monthly visits to properly conduct a health program. The dairy producer and veterinarian should discuss management practices that aid in disease control.

Record System

Records are an essential part of a herd health and management program. Maintain individual cow records from birth to death. Identify cows to check for reproductive problems before the veterinarian's monthly visit. Record freshening, heat, breeding dates, and health history, including mastitis, for each cow. Give clear instructions to all personnel concerning milk withholding time to avoid contamination.

Records are the most important management tool for a successful herd management program. If you don't have time to record the events yourself let your Dairy Herd Improvement Association (DHIA) record them for you.

The DHIA program offers several reports specifically to aid in reproductive management as well as the needed

production records to maintain a profitable cash flow. Producers on DHIA consistently have herd averages in excess of 2,500 lb. above non-tested herds.

Current veterinary procedures and goals for the dairy operation are:

1. Calves

a. Administer *E. coli* and virus scour vaccines to the pregnant cow before calving to improve quality of colostrum, or administer oral calf vaccine at birth.

b. Dehorn baby calves at 2-8 weeks of age (paste, scoop or electric) to prevent stress.

c. Vaccinate heifers for brucellosis at 2-6 months of age. Vaccinate for rednose (IBR) and 7-way blackleg at 4-6 months of age.

d. Control internal and external parasites.

2. Heifers

a. Insert magnets at time of breeding.

b. Continue parasite control.

c. Vaccinate to prevent vibriosis, leptospirosis, IBR, and blackleg.

d. Provide a stress-free environment.

3. Cows

a. Feed dry cows correctly to minimize metabolic problems.

b. Trim feet regularly.

c. Follow brucellosis and tuberculosis testing recommendations.

d. Minimize hardware disease by eliminating wire, nails and other sharp objects.

e. Examine the health of cows before bringing them into the herd (CMT, brucellosis and TB tests).

f. Provide clean, dry, well-ventilated resting areas.

IV. Goals For Raising Dairy Replacements

What kind of cows will you milk 3, 4, or 5 years from now? Their size, milking ability, temperament, reproductive performance, disease resistance and type are influenced by current breeding decisions, care of pregnant cows and management of heifers from birth to freshening. Replacements should be raised rather than bought. It is usually less expensive to raise your own replacement heifers, especially when home-grown forages and grain are available. It allows you to benefit from your genetic program and to minimize the chance of introducing diseases to the farm. Specific goals for replacements include:

1. Provide clean dry individual calving pens of at least 144 square feet.

2. Be present at calving to insure 97% of all calves born alive.

3. Ensure ingestion of two quarts of colostrum within one hour of birth.

4. Wean at least 95% of calves born at four weeks of age.

5. Observe calves at least twice daily.

6. Minimize costs by using only colostrum and waste milk for the entire milk feeding period.

7. Permanently identify all calves with some nationally certified system.

8. Adjust feed at 4-7-12-18 and 22 months of age. Monitor forage changes and adjust supplemental feed to balance the rations for optimum size and weight as shown below.

Age in months	Brown Swiss and Holstein	Ayrshire and Guernsey	Jersey
	----- lbs. -----		
Birth	90-100	65-75	55-60
1	120	100	80
2	170	145	120
4	270	235	200
6	370	325	280
12	700	600	520
15	875	750	650
18	1000	875	775
22	1200	1075	950

10. Breed according to size rather than age (Holsteins: 800-850 lb.). Heifers should be large enough to breed by 15 months of age.

11. Breed to artificially sired production proven, dairy bulls and grow heifers properly to minimize calving difficulty.

12. Freshen 95% of heifers before 25 months of age.

13. Pre-train and pre-feed heifers entering the milking herd.

14. Raise heifers so that they can be marketed.

V. Reproductive and Genetic Goals

Reproductive losses in Nebraska have been estimated in excess of \$7,400 per herd (or \$103 per cow) on DHIA test. Nebraska producers are losing an estimated ten million dollars annually. The major areas of reproductive losses are in longer than average calving intervals, excessive dry days and services per conception, and later than optimum age at first freshening.

The goals and estimated dollar losses for each reproductive category are:

1. Calving interval: Under 365 days in length — \$1 per day loss for calving intervals between 365 and 395 days. Losses over 395-day- calving intervals are estimated at \$3 per day.

2. Dry period: Average days dry between 45 and 60 days. A loss of \$3 per day for days dry over 60 days, as well as \$3 per day for those under 45 days.

3. Services per conception: Under 1.5 services per conception. A \$1 loss per 0.1 increase over 1.5 in addition to additional semen purchases.

4. Average age at first freshening: Freshen first calf heifers at 24 months or earlier, at weights between 1,200-1,300 lb. (Holsteins). A \$30 loss per month per animal for each month over 24.



Health Goals and Examinations to Improve Reproductive Capability

Have your veterinarian examine:

1. Cows with retained placenta. Treat 24-72 hours after calving and re-examine before breeding.
2. All cows at 30 days after calving and before breeding.
3. All cows with an abnormal vaginal discharge.
4. Cows not showing heat at 45-60 days after calving.
5. Cows with abnormal heat cycles.
6. Cows bred 2-3 times to aid in determining the cause of breeding failures.
7. All bred cows for pregnancy 45-60 days after service.

Breeding Program

1. Breed both cows and heifers to a group of from 5 to 7 A.I. proven sires that are ranked among the top 10% of sires based on Product Value (PD\$). The sires used should have repeatabilities of 65% or higher to be certain they are randomly A.I. proven and to protect against substantial changes in proofs as additional daughters freshen. If a herd is on an official DHIA record keeping system, then a random group of young, unproven sires should be used on 15-20% of the herd.

2. Select sires on the basis of functional traits that are economically important. These traits include: udder, feet and legs, and calving difficulty. The more traits one selects on, the greater the loss on PD\$ or income to the dairy enterprise.

3. Base selection only on those traits that have a heritability of at least 20% and that directly influence profit; for example milk, fat, protein, or solids not fat.

VI. Milking System and Mastitis Goals

The milking system is often seen as the primary cause of mastitis. Lactating cows are subjected to the milking system at least twice per day. A poorly designed, installed, or maintained milking system has the potential to cause stress or injury to the cow's teats and udder, and increase the likelihood of infections. Failure to control mastitis can result in substantial losses in milk production. Poor quality milk (high somatic cell count or high bacteria counts) represent a poor quality product to the consuming public and a loss of manufactured dairy product yield.

Goals

1. Somatic cell count. Maintain an average herd (bulk tank) somatic cell count of 300,000 or less.
2. Bacteria. Maintain raw plate bacteria counts below 5,000 or Pre-Incubation (PI) counts under 25,000.
3. Milking system. Maintain your milking system in a sound functional condition according to manufacturers recommendations. Assure that vacuum level remains constant.

4. Extraneous voltage. Maintain your on-farm wiring system so extraneous voltage levels within the immediate cow environment are always less than 0.5 Vac.

5. Udder infection levels. Maintain records and use the California Mastitis Test (CMT) on a regular basis to identify cows with infected udders. No more than 15% of the cows, or 8% of the quarters, should be infected with mastitis pathogens. Clinical mastitis cases should average no more than 1% of the milking herd.

6. Milking system maintenance. Have a qualified milking equipment dealer conduct a thorough evaluation of your milking system at least every six months or 500 hours of operation.

7. Squawking. Control inadvertent air admissions to the milking system so squawking occurs at a rate not exceeding one squawk for eight to ten cows milked.

8. Inflations. Change inflations on a regular basis using the manufacturer's recommendations as an upper limit. A general guideline is 1,200 cow milkings per inflation.

9. Milk clean, dry cows. The udders of all animals should be clipped. Teats and udders should be cleaned and sanitized before milking. Dry teats and udders completely using single-service paper towels. No water should be visible on the udder during milking.

Maintenance of a low mastitis level herd requires a properly designed, installed, and maintained and operated milking system. A well maintained cow environment is essential for good udder health.

VII. Dairy Housing Goals

The purpose of any dairy housing system is to provide an environment conducive to good animal health and production.

Goals

1. Provide individual dry, clean, well-ventilated, draft-free housing or calf hutches.
2. Design and layout the building to accommodate future expansion. Many dairy producers undergo major expansion every five to seven years.
3. Provide free-stalls of adequate size and number for the animals being housed.
4. Maintain free-stalls at all times so the free-stall provides the most comfortable resting condition anywhere within the cow environment. Maintain free-stalls on a daily basis.
5. Design, construct and manage the ventilation system so that animals are comfortable at all times.
6. Maintain the free-stall and housing facility so no more than 1% of animals housed acquire a habit of lying in the free-stall alley.
7. Design and construct the free-stall facility for efficient movement of animals, feed, and personnel and provide for convenient manure handling. Avoid dead-end alleys.
8. Provide clean, dry facilities for heifers and dry cows that do not contain sharp objects.

Conclusion

The goals to achieve optimum production and profit in a dairy enterprise are presented as guidelines for evaluation and analysis of potential. Each enterprise will have slightly differing goals. Discuss all goals with family members and partners to objectively look at the major areas where income is lost. Identify all applicable goals, then prioritize them to give direction to planning efforts. Make a concerted effort to correct major deficiencies in the operation so that profit can be maximized. Every member of the operation should choose one area and concentrate on finding ways to correct problems. Most of the goals as listed will require no additional capital, however, some may require a change in attitude. After listing areas that need the most attention, locate resource materials and specialized help to assist you in meeting your goals. The following NebGuides have been written to give more detailed assistance in these areas. NebGuides are available free of charge from your County Extension Office.

NebGuide Listing

Genetics and Reproduction

- G80-515 Minimizing Dairy Herd Reproductive Failure Through Programmed Veterinary Services
- G85-754 How to Use Dairy Sires Evaluated on the 1982 Genetic Base
- G85-755 How to Set Goals for Your Breeding Program
- G85-756 How to Calculate PD\$ Values for Your Own Milk Market
- G85-764 How to Use Repeatability in Your Sire Selection Program
- G86-776 How are Milk Components Related?
- G86-787 How to Adjust Holstein Lactation Records for Days Carried Calf
- G86-819 At What Weight Should Holstein Heifers Freshen
- G86-820 How to Maximize Income by Managing Days Dry
- G86-822 How to Estimate a Dairy Herd's Reproductive Losses

Mastitis Control

- G80-506 Mastitis Control
- G81-556 Using the California Mastitis Test (CMT) to Detect Subclinical Mastitis
- G86-778 Do You Practice Good Milking Procedures?

Mastitis Control Guides

Nutrition

- G77-373 Feeding the Dry, Pregnant Cow
- G83-650 Grower Rations for Dairy Replacements
- G86-783 Complete Rations—Should You Feed Them
- G86-784 Complete Rations—Formulating and Feeding
- G86-785 Complete Rations—Hand Calculator Method
- G86-788 Should You Use Computer Feeders for Your Dairy Herd?
- G86-798 Guidelines for Using Computerized Feeders
- G86-816 Feeding the Dairy Calf I. Colostrum
- G86-817 Feeding the Dairy Calf II. Liquid Diets

Calf Raising

- G77-368 Milk Replacers for Dairy Calves
- G79-455 Calf Hutches
- G83-645 Starter Rations for Dairy Calves