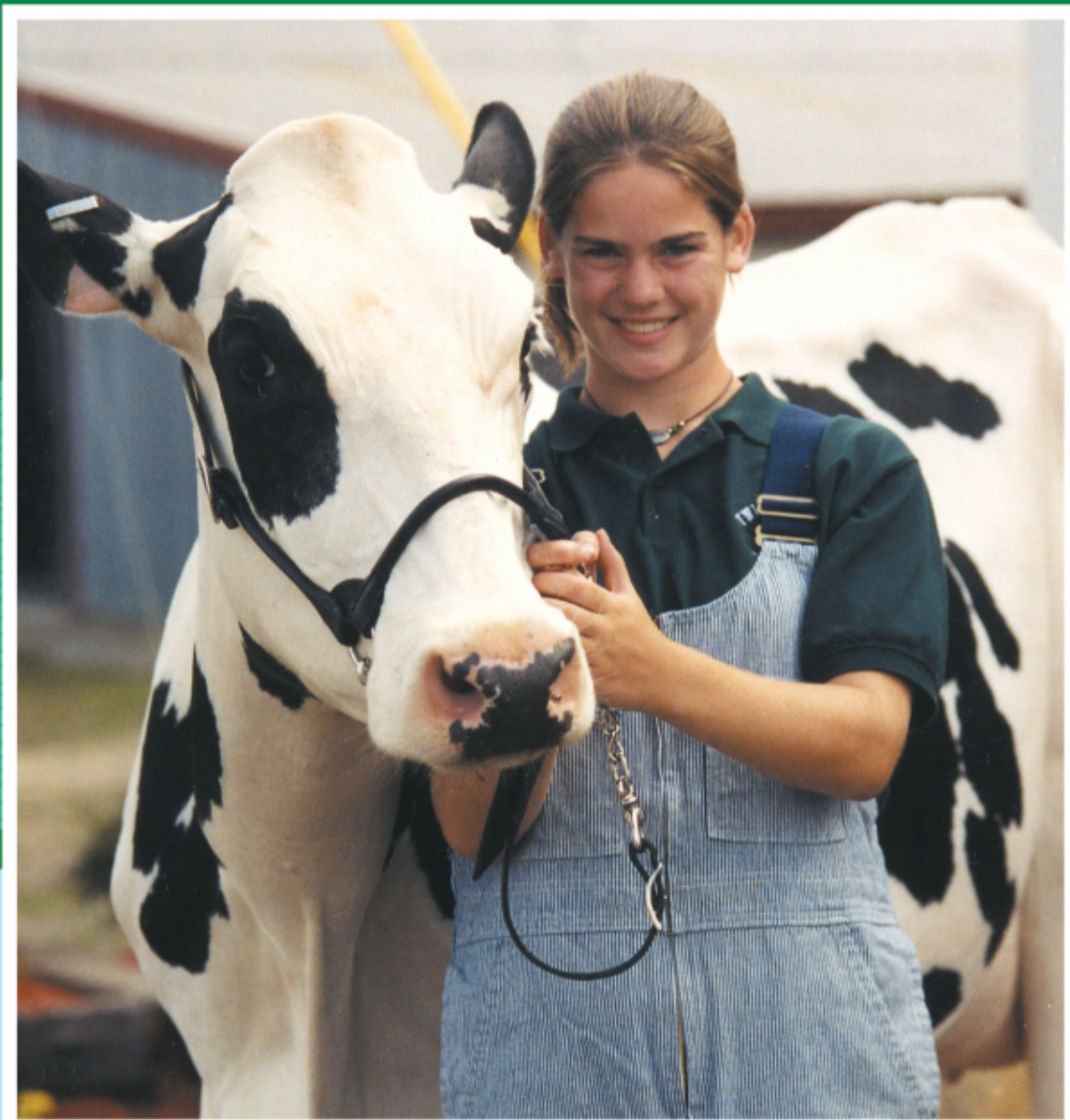




National 4-H Curriculum
BU-08163

Dairy³ Rising to the Top



Dairy Project Youth Activity Guide

Name _____

County _____



Note to Parents and Project Helper

If you were a project helper for youth involved in completing Dairy 1 or 2, you know what a great experience this role is. As a helper, you are in a perfect position to help youth develop in positive ways as they learn about dairy and themselves. You can nurture and cultivate their interest in this project by guiding their planning, helping them carry out their projects and recognizing them for a job well done.

Youth Learner Outcomes

- Become knowledgeable and responsible animal caregivers
- Develop experience-based science skill sets that pertain to health and disease
- Appreciate the variety of opportunities available in animal and dairy careers
- Recognize and practice the skills and abilities necessary for success in dairy and animal careers
- Practice the life skills of communication, acquiring and evaluating data, decision making, planning and organizing, character development and more.

Your Role

- Become knowledgeable and responsible animal caregivers
- Develop experience-based science skill sets that pertain to health and disease
- Appreciate the variety of opportunities available in animal and dairy careers
- Recognize and practice the skills and abilities necessary for success in dairy and animal careers
- Practice the life skills of communication, acquiring and evaluating data, decision making, planning and organizing, character development and more.



The Dairy "Skills for Life" Series

Rising to the Top is the third in a series of three activity guides for youth that also includes Dairy 1, *Cowabunga!*, Dairy 2, *Mooving Ahead* and the Dairy Group

Activity Helper's Guide. These guides are developmentally appropriate for grades 3–5, 6–8 and 9–12 respectively, but may be used by youth in any grade based on their project skills and experience.

All activities include a description of the skills to be practiced, discussion questions, suggestions for additional activities and other helpful information. The Success Indicator listed for each activity is an excellent way to evaluate the youth's success. Each of the guides includes an Achievement Program to encourage youth to learn more about the Dairy Project while developing important life skills. "*Ruminations*" is a quick and fun way for youth to assess their knowledge and skill level BEFORE and AFTER they complete the Achievement Program. In the *Helper's Guide* you will find another evaluation piece titled "Evaluating the Impact." Use this before beginning each level and after the youth has completed each level.

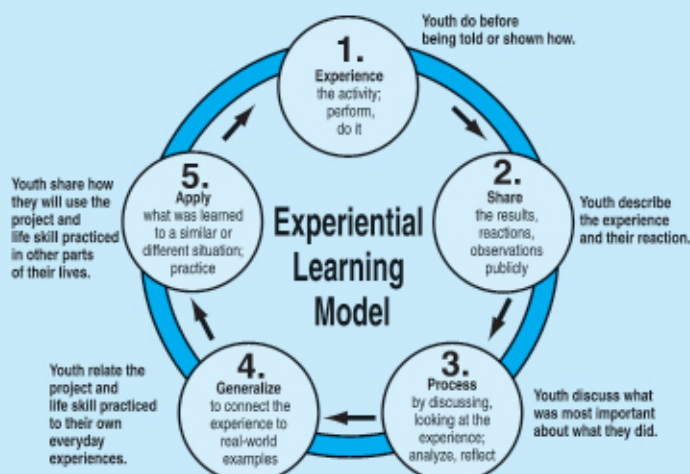
Each activity gives youth an opportunity to LEARN BY DOING before being told or shown how. Your challenge is to stay in the background while the youth explores and learns from the experience. You can help best by listening as youth consider the questions and offer their answers.

Dairy Helper's Guide

The *Dairy Helper's Guide* contains more learn-by-doing activities that can be adapted for families, classrooms, after-school activities, child care settings, 4-H groups, other youth groups or camps. You'll also find information about characteristics of youth, life skill development, teaching experientially, meeting ideas and answers to many of the activities in the youth guides.

Experiential Learning Model

This five-step model is used in each activity in this series.



Pfeiffer, J.W., & Jones, J.E., "Reference Guide to Handbooks and Annuals" © 1983 John Wiley & Sons, Inc. Reprinted with permission of John Wiley & Sons, Inc.

As you can see, the youth first attempt the activity on their own. After they do as much of the activity as they can, you then meet together and discuss: What did they do? What was important? How does what they did relate to their lives? How might they use these life and project skills in the future? Your ability to ask thought-provoking questions and listen to the youth's ideas will add to the educational impact of the experience.

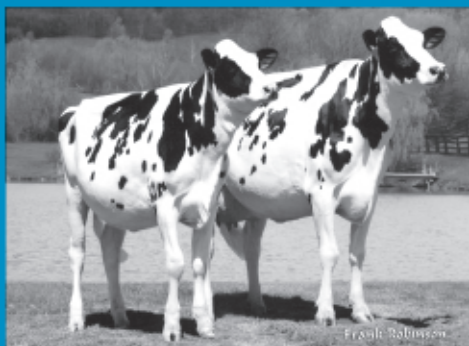
**Good luck in your role as Project Helper
and thanks for contributing to the
positive development of youth!**

Acknowledgments

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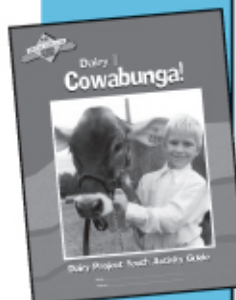
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Frank Robinson

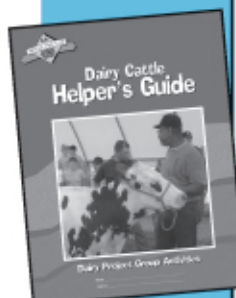
For more on dairy cattle, look for these other guides in the 4-H Dairy Cattle Series.



Dairy 1
Cowabunga!
BU-08161



Dairy 2
Mooving Ahead
BU-08162



Dairy Helper's Guide
BU-08164

Cloth Model Calf
BU-07332

Dairy 1 - Cowabunga!

Chapter 1

Selection and Judging

Black & White & Red All Over
Selecting a Project Animal
From Head to Tail
You Be the Judge

Chapter 2

Udder Things

How Much Does a Calf Eat?
From Moo to U

Chapter 3

Fitting and Showing

Getting Ready to Show
Fitting for Show
Showing Your Project Animal

Chapter 4

Management and Records

Dollars for Dairy
Circle of Life
From Bottle to Bunk
Cow Tally
Truth, Justice and the American Whey

Dairy 2 - Mooving Ahead

Chapter 1

Judging, Identification and Ethics

I Placed This Class...
Identifying Your Calf
Ethical Choices

Chapter 2

Animal Health

How Now, Brown Cow?
Down the Drain
It's On the Label

Chapter 3

Management Practices and Feeding

Handle with Care
Selecting Dairy Housing
Let's Talk Hay
Following Feed Through the Digestive System

Chapter 4

Milking, Marketing and Careers

Preparing a Cow for Milking
Safe Milk is Cool!
Milk...for the Health of It
So You Want to Be a Dairy Farmer?

Dairy Helper's Guide

Chapter 1

Dairy Word Games

Planning the Dairy Project Year
Let's Judge!
Dairy Quiz Bowl Time
Dairy Talk Games
Fun with Dairy Pyramid

Chapter 2

Dairy Skill Building

Loud and Clear
Knot Only a Rope Halter
Show What You Know!
Start to Finish

Chapter 3

Feeding and Dairy Management

Reading Pedigrees and Classifications
The Doctor Will See You Now
Moo-rades
Dairy Cattle Diseases (Chart)

Chapter 4

Dairy Products and Images

Discovering Dairy Products
Touring a Dairy Farm

Rising to the Top

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National 4-H Curriculum

Welcome to *Rising to the Top*

By now you are probably an expert on dairy, or certainly know more than you did when you started this project. Whether you raise one or several project animals, you are in an excellent position to share your experiences with others. *Rising to the Top* provides several opportunities for you to develop your leadership skills as you strive to complete Level 3 of the Dairy Achievement Program.

What You'll Do

You'll find activities to help you develop a business, explore careers and teach others. Here are some of things you'll do:

- Identify parts of the DHI record
- Debate animal welfare issues
- Inspect a dairy for quality indicators
- Complete a Career Circle
- Perform a CMT and interpret results
- Give a presentation on embryo transfer
- Detect heat in dairy cattle
- Demonstrate how to detect pregnancy in cattle
- Demonstrate how to deliver a calf



Place a photo of yourself with your project helper in this space.

Rising to the Top Dairy 3 Project Guidelines

- Set your goals and record project highlights
- Do a minimum of seven activities of the *Rising to the Top* Dairy Achievement Program each year and complete Level 3 within three years.
- Practice and develop the life skills of leading others, making decisions, planning and communicating, while you learn to take risks, think creatively, use community resources, explore careers and take responsibility.
- Keep the Project Goals and Highlights page current.
- Share your dairy knowledge and skills with others.
- Have fun!

Rising to the Top Achievement Program

If you have completed levels 1 and 2, you know each activity contains dairy-related activities that encourage you to practice a certain life skill while doing the activity. In many cases, because this is an activity guide and not a resource manual, you will need to research other sources of information to complete a particular activity. You'll find an abundance of information on the Internet with literally thousands of sites containing information on dairy cattle and dairy products.

Remember this is your own personal guide. Feel free to use it to record your thoughts and ideas. Most questions will not have a single "right" answer. The questions will help you explore the subject and your own ideas in more depth. Additional activities are included in *Dairy Helper's Guide*. Many of these are fun experiences for you to use with other youth as you develop your leadership skills.

Your Project Helper

Choose your own helper. This person might be a project leader or advisor, teacher, family member, neighbor, friend, or anyone who has the interest to work with you to complete Level 3. Meet with your helper to set goals, plan and complete activities in this guide. Discussing each activity with your helper and having this special person date and initial your achievement program will make this project more interesting and fun.

Sharing your goals, ideas and experiences with this person will give you an opportunity to learn about local resources that may help solve problems you are having with your cow or on your farm.

My Project Helper: _____

Phone #: _____

E-mail address: _____

Name

My Animal's Name _____ Breed _____

What I want to do and learn in Dairy 3. _____

1.
2.
3.
4.

Here's an easy way to tell if you learned something new and developed important project skills. Before you do the activities in this guide, indicate what you know then when you do the activities indicate what you know **AFTER** you complete them. You may be surprised how much you learned! Share the results with your helper.

Begin each skill with the words – **I know how to** _____
Then circle **1** (not at all); **2** (somewhat) or **3** (a lot).

I know how to...	Before	After
Score the body condition of four dairy animals	1 2 3	1 2 3
Identify parts of the DHIA Herd Summary Sheet	1 2 3	1 2 3
Debate animal welfare issues	1 2 3	1 2 3
Evaluate the general public's images of farms	1 2 3	1 2 3
Inspect a dairy for milk quality indicators	1 2 3	1 2 3
Calculate a ration for a dairy animal	1 2 3	1 2 3
Trace the estrous cycle of cattle	1 2 3	1 2 3
Organize and present a talk or demonstration on embryo transfer	1 2 3	1 2 3
Explain how to detect pregnancy in dairy cattle	1 2 3	1 2 3
Conduct a dairy promotional event	1 2 3	1 2 3
Identify a career that matches your interests and skills	1 2 3	1 2 3
Prepare a personal résumé	1 2 3	1 2 3

Date and list the exciting things you do and learn.

[illegible]

Place a photo of yourself with your project animal in this space.

Rising to the Top Achievement Program

Achievement Program Guidelines

- Do at least seven of the *Rising to the Top* and Milking It for More Achievement Program activities each year.
- Complete at least 21 of the *Rising to the Top* and Milking It for More activities within three years to complete this achievement program.
- Have your project helper date and initial the activities as you complete them and discuss them with your helper.

Rising to the Top Activities

Date Completed	Helper's Initials
----------------	-------------------

Chapter 1 Selection and Management

Scoring a Cow's Body Condition		
Report Card Time		
Debating Animal Welfare Issues		
What's Your Opinion?		
Inspection Time		

Chapter 2 Health and Feeding

CSI: Mastitis		
Balancing a Dairy Ration		

Chapter 3 Reproduction and Breeding

The Heat Is On!		
Changes to E.T. Clone Home!		
A Womb With a View		
The LaMOOze Method		

Chapter 4 Milk, Marketing and Careers

Promoting Dairy Products		
Exploring Career Options		
Applying for a Job		



Explore more at
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Milking It
for **More**

Select and do any of the “Milking It for More” activities in *Rising to the Top* or make up your own. Record the page and number of each one you complete and have your helper initial it.

[illegible]

Write your own activity here.

Date_____ Helper's Initials_____

Write your own activity here.

Date_____ Helper's Initials_____

Write your own activity here.

Date _____ Helper's Initials _____



Selection and Management

Dairy Project Skill:	Scoring body conditions of dairy cows.
Life Skill:	Making decisions by analyzing information.
Success Indicator:	Scores the body condition of four dairy animals.
Educational Standard:	NS.5-8.3 Structure and function in living systems.

Scoring a Cow's Body Condition

The goal of Body Condition Scoring is to obtain a simple and reliable measure of the level of body reserves in live animals. Routinely scoring the body condition of dairy animals can help detect potential problems that might cause a decrease in milk production. Body condition scoring of cattle allows cattle producers to assess the level of fat reserves of cows during various production phases. When regularly used, this information can be used to formulate management and feeding decisions.

Taking On the Challenge

Do your best to locate four dairy cows at different stages of lactation. With a friend, family member or your helper, score each of the cows and record your best estimates in the table. Examples of cows with body condition scores of 1 to 5 are shown on page seven. **A BODY CONDITION SCORING CHART IS SHOWN ON PAGE 35.**

Use the Body Condition Scoring Examples on page 7 and Body Condition Scoring Chart to help you figure the scores for each cow and record in the chart below.



"Good body reserves are necessary for a cow's health."

Body Condition Score Record

Categories	Just Freshening	90–100 days after freshening	Late Lactation	Dry Cow
Spinous processes				
Spinous to transverse processes				
Transverse processes				
Overhanging shelf				
Tuber coxae				
Between pins and hooks				
Between the hooks				
Tailhead to pins				

Ruminations



Say Cheese! (Share)

- How did you score the four cows?
- What were the main differences you found between a fresh cow and a dry cow?

Chew Your Cud (Process)

- Why is body condition scoring for cows an important management tool?
- What information did you need to analyze to make body scoring decisions?

Chore Time (Generalize)

- What factors affect your animal's Body Condition Score most?
- What other information do you analyze to make decisions about your animal?

Mooving Along (Apply)

- How would you use the condition score to feed correctly?
- How can this activity help you be a better judge of dairy cattle?



Dairy Talk Words

Body condition scoring



Body Condition Scoring

Your interest in how you care for and feed your animal will be reflected in its body condition. Adequate body reserves are necessary to maintain the health, reproductive and productive capacity of all dairy cattle. In the dairy cow fat covering is an indicator of the amount of stored energy. Cows without adequate body reserves are prone to disease, metabolic disorders, impaired reproductive efficiency and reduced milk production. In heifers, lack of body reserves will delay breeding and will lower milk production after calving. On the other hand, excessively fat cows are predisposed to calving difficulties, fatty liver after calving and often death. This condition has been termed Fat Cow Syndrome. A few minutes spent evaluating your project animal(s) may change the amounts or kinds of feed you feed and the management practices you use.

Body condition is an indicator of how well you are doing as a manager. It is meant to be a tool in accessing the nutritional needs of the animal versus its production. Even unfreshened heifers can be given a body condition score.

Scores

- 1.00 Severe Underconditioning (emaciated)
- 2.00 Frame Obvious
- 3.00 Frame and Covering Well Balanced
- 4.00 Frame Not as Visible as Covering
- 5.00 Severe Overconditioning

Scoring Procedure

To begin scoring, stand directly behind the cow. Make sure the cow is relaxed before beginning because muscle tightness will result in inaccurate scoring. Observe the degree of depression around the tailhead. Then score the rump by placing your hands on the pin bones and feeling for the amount of fat covering.

Scoring the Cow

The fresh cow will lose body condition for about the first six to eight weeks before it can balance its feed intake with production. When observing the dairy cow, you would like to have her with a score of 3.5 to 4.0 at freshening. She will probably lose condition until she scores a 2.75 or 3.0 at eight weeks after calving. After eight to 10 weeks she should stabilize and start putting on condition. The goal is for her to be a 3.5 condition score again by the time she is dry.

Milking It for More

1. Take pictures of three cows through their entire lactation and describe their body changes to your helper.

Body Condition Scoring Examples

Body Condition Score 1

Rump Area Deep cavity around tailhead. No fatty tissue felt between pins. Pelvic bone easily felt. Skin is supple.

Loin Area Ends of short ribs sharp to touch. Upper surfaces can easily be felt. Deep depression in loin.

Body Condition Score 2

Rump Area Shallow cavity lined with fatty tissue at tailhead. Some fatty tissue felt under pin bone. Pelvis easily felt.

Loin Area Ends of short ribs feel rounded. Upper surface felt with slight pressure. Depression visible in loin.

Body Condition Score 3

Rump Area No visible cavity around tailhead. Fatty tissue is easily felt over whole rump. Skin appears smooth. Pelvis is felt with slight pressure.

Loin Area Ends of short ribs can be felt with pressure. There is a thick layer of tissue on top. There is only a slight depression in the loin.

Body Condition Score 4

Rump Area Folds of fatty tissue are visible around tailhead. Patches of fat are present around the pin bones. Pelvis is felt only with firm pressure.

Loin Area Short ribs can't be felt even with firm pressure. No depression is visible in loin between backbone and hip bone.

Body Condition Score 5

Rump Area Tailhead is buried in fatty tissue. Skin is distended. No part of pelvis can be felt even with firm pressure.

Loin Area Folds of fatty tissue over short ribs. Bone structures can't be felt.



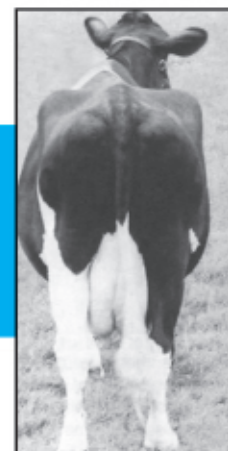
Body Score 1



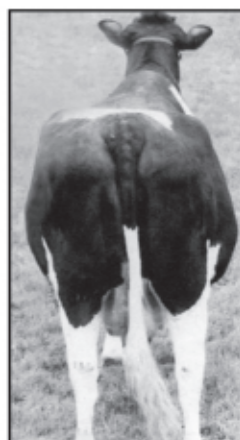
Body Score 2



Body Score 3



Body Score 4



Body Score 5

Report Card Time

Dairy Project Skill:

Life Skill:

Success Indicator:

Educational Standard:

Using records to make management decisions
Making decisions and analyzing alternatives
Identifies parts of the DHIA Herd Summary Sheet.
NM-NUM.3-5.1 Understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Taking On the Challenge

DHIA Records are valuable management tools for dairy producers. By belonging to a Dairy Herd Improvement Association, progressive dairy farmers have access to detailed information on individual cows and the whole herd. There are a variety of options for producers who want DHIA information. The most common process is

for a DHIA Supervisor to visit the dairy monthly, collect milk samples, record animal information and then send samples to a lab for evaluation. Updated electronic information is available almost immediately. Some dairy farmers still get a computer printout of information in the mail a few days after testing.

HERD SUMMARY DHI-202									
HERD CODE AND TYPE OF RECORD				DATE TESTED		PAGE			
ST.	DS.	HERD NO.	MO.	DAY	YEAR				
14	12	0347	9	7	05	1			
DHIR									

REPRODUCTIVE SUMMARY OF CURRENT BREEDING HERD									
TOTAL COWS IN BREEDING HERD		COWS WITH NO SERVICE DATES OR DIAG. OPEN		COWS BRED BUT NOT DIAG. PREG.		DAYS TO 1ST SERVICE			
BR. OF HERD	H	OPEN VWP TO 100 DAYS	OPEN OVER 100 DAYS	NUMBER DIAG. OPEN	NUMBER PREG.	1-30 DAYS	31-60 DAYS		
36		9	3			5	4		
60		25	8			14	11		

PRODUCTION, INCOME, & FEED COST SUMMARY									
DESCRIPTION	DAILY AVERAGE PER COW ON TEST DAY		ROLLING YEARLY HERD AVERAGES						
	NUMBER	%	NUMBER	%					
TOTAL COWS	92		95.7						
COWS IN MILK	77	84	82.3	86					
MILK LBS. (ALL COWS)	59.1		23.526						
FAT LBS. (ALL COWS)	2.20		880						
FAT PERCENT	3.7		3.7						
PROTEIN LBS. (ALL COWS)	1.82		715						
PROTEIN PERCENT	3.1		3.0						
MILK LBS. MILKING COWS	70.8								
MILKING COWS									
ALL COWS									
LBS. CONSUMED									
SILAGE									
OTHER SUCCELMTS OR BLENDED RATIONS									
DRY FORAGE									
OTHER FEEDS									
PASTURE									
CONCENTRATES									
VALUE OF PRODUCT \$	11.67	9.64	3,869						
COST OF CONCENTRATES \$									
TOTAL FEED COST \$									
INCOME OVER FEED COST \$									
FEED COST PER CWT. MILK \$									
MILK BLEND PRICE	15.85	3.5	3.0						

REPRODUCTIVE SUMMARY OF TOTAL HERD									
DAYS OPEN AT 1ST SERVICE		AVG. SERVICES PER PREGNANCY		PROJECTED MINIMUM		SERVICE OR HEAT INTERVALS		SERVICES FOR PAST 12 MONTHS	
NUMBER FEWER THAN VWP	NUMBER FROM VWP TO 100 DAYS	NUMBER OVER 100 DAYS	DAYS TO 1ST SERVICE	PREG. COWS	ALL COWS	CALVING INTERVAL	DAYS OPEN	SERVICE NUMBER	% SUC-CESSFUL
1	9	7	101	2.0	2.2	13.5	129	1ST	90
2ND LACT	1	15	3	85	2.1	2.6	13.4	2ND	46
3+ LACTS	2	19	10	92	2.1	2.8	14.0	3RD+	47
ALL LACTS	4	43	20	92	2.0	2.6	13.7	TOTAL	183
% OF ALL SERVICES	6	64	30			14.1		ABORTIONS	
								THIS MONTH	PAST YEAR
								ACTUAL	
								APPARENT	2

BIRTH SUMMARY									
DAM'S LACT		OFFSPRING BORN		CALVING DIFFICULTY SCORE					
MALES	FEMALES	MALES	FEMALES	1	2				
1	17	12	23						
2+	48	26	55						
TOTAL	65	38	78						

COWS TO BE MILKING, DRY, CALVING, BY MONTH									
MONTH	OCT	NOV	DEC	JAN	FEB	MAR			
MILKING	83	87	88	87	86	82			
DRY	13	11	7	10	13	16			
COWS TO CALVE	8	8	6	4	3	9			
HEIFERS TO CALVE	3	4	1	4	4	1			

YEARLY REPRODUCTIVE SUMMARY									
DATE OF TEST	% HEATS OBS.	% SUC-CESS-FLA.	PREG. RATE	NUMBER SERVICES	NUMBER CONFINED PREG.	NUMBER CALVING	TOTAL PRECARIOUS COWS		
9-30-04	47	50	20	18	10	13	48		
10-27-04	52	50	22	12	12	11	51		
11-30-04	55	56	22	18	7	8	49		
12-31-04	55	53	26	19	3	7	46		
1-31-05	70	41	24	22	2	11	38		
2-23-05	73	42	22	12		5	32		
3-31-05	58	33	14	18	19	10	42		
5-05-05	44	33	11	12	13	7	44		
6-03-05	52	42	3	12	10	3	49		
7-07-05	59	59	20	17	4	13	43		
8-04-05	63			15	1	4	39		
9-07-05	32			10	11	9	43		
AVERAGES	55	48	19	15	8	8	44		
TOTALS				185		101			

MISCELLANEOUS HERD INFORMATION									
SHIPPED-TEST DAY COMPARISON	TEST DAY	YEARLY AVERAGE	ASSOC. SUPV.	SAMPLES REV. AT LAB	DRPC MAILED				
SUM OF TEST DAY WTS. LBS.	5377	6049	131		9 10				
REPORTED AV. DAILY MILK TANK WTS. LBS.	4953	5645							
% DIVIATION	+8.6	+7.2							

BULK TANK FAT = 3.6% PROT. = 3.1%									
REMA	1ST OR PREVIOUS	2ND	3RD	MILKING TIMES	WSE	WPL			
	4:45 PM	Y	Y						
	6:05 AM	Y	Y						

Answer the following questions by studying the herd summary sheet on pages eight and nine. You may also want to obtain a copy of an individual cow record and see how much information is available on that record sheet.

What is the...

- Average daily milk production for milking cows
- Average days in milk for entire milking herd
- Average days dry from previous lactation
- Cows expected to calve next February
- Annual percent days in milk (whole herd)
- Average days in milk for peak milk production
- Average days in milk at first breeding
- Average days open for whole herd
- Average number of services per conception
- Monthly calving interval next month
- Number of cows leaving the herd
- Age of heifers at first calving
- Service sire Merit \$

