Ranch Record Book Sheets

This version provides the camera-ready sheets to produce the Florida Ranch Record Book. This version was developed to save computer printer cartridges. The full Ranch Record Book is 212 pages. This version is only 53 pages. Below is the recommended number of pages to print for ranches with up to 12 pastures or fields and up to 100 cows. Each pasture or fields should have a set of four record sheets. This record book was set up for hole punching and insertion into a 2 ½" binder notebook. The beauty of this system, however is that ranchers can customize the record book to fit their own operation.

Standard Pages

12 copies of all four pasture record pages

100 copies of the Cow Production History sheet

4 copies of the Breeding/AI sheet (25 entries per page)

4 copies of the Pregnancy Testing sheet (25 entries per page)

4 copies of the Cattle Sales sheet

4 copies of the Other Income sheet

6 copies of the Expenses sheet

The rest of the sheets are provided as single copies. Each section has a cover page, however for ease of use, labeled notebook dividers are recommended as well.

Replacement sheets are available online at: http://jackson.ifas.ufl.edu/ranch_record.htm

For more information on the Florida Ranch Record Book contact:

Doug Mayo
Jackson County Extension
2741 Pennsylvania Ave.
Marianna, FL 32448
850-482-9620
email: demayo@ifas.ufl.ed

email: demayo@ifas.ufl.edu

Web page: http://jackson.ifas.ufl.edu

Florida Beef Cattle Ranch Record Book



This Record Book was developed by Doug Mayo, Jackson County Extension to enhance beef cattle ranch management, meet pesticide application record requirements, meet the recommendations for Country-of-Origin Labeling records, and to compliment the Florida Cattlemen's Association's Water Quality Best Management Practice Manual.





First Edition March 2004

This Record Book Belongs to:



Florida Beef Cattle Ranch Record Book Registration Form

Name	
Address	
City, State ZIP	
Phone	
Email (if applicable)	

This Record Book can be a valuable tool to help improve the management of your beef cattle operation. Registration is required so that updates can be sent to you. Since this is the first edition of this publication, University of Florida Extension will be contacting you in the future for your feed back on improving the usefulness, format and completeness of this record book.

Registration forms should be mailed to:

Doug Mayo, Livestock Extension Agent Jackson County Extension 2741 Pennsylvania Avenue, Suite 3 Marianna, FL 32448

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COOPERATIVE EXTENSION WORK IN AGRICULTURE, HOME ECONOMICS, SEAGRANT AND 4-H YOUTH, STATE OF FLORIDA, IFAS, UNIVERSTIY OF FLORIDA, AND BOARDS OF COUNTY COMMISSIONERS COOPERATING.

Please Return to:				
City	State	ZIP		
Phone:			_	
Important Phone Numbers:				
	Phone #			

For Record Book Page Refills: Contact: Doug Mayo Livestock Extension Agent **Jackson County Extension** 2741 Pennsylvania Ave Marianna, FL 32448

850-482-9620

Email: demayo@ifas.ufl.edu

Web page: http://jackson.ifas.ufl.edu/livestock.htm

About this Record Book



This record book was designed for field use (kept in truck), to record beef cattle and pasture records. The record sheets were designed for use in a loose-leaf binder, which can be customized to each individual operation. This record book does not take the place of business accounting and was not intended as a complete record list for tax preparation or loan application.

The standard record book comes with enough sheets to keep records on up to 12 fields and 100 cows. If additional fields are needed, simply print or copy all four pasture record sheets (pages 10-13) for each additional field. If an operation has more than 100 cows and heifers, additional copies of the individual cow production history sheet (page 58) should be added for each cow. The breeding and pregnancy testing sheets allow for 25 cows per sheet, so copies should be made for each additional 25 cows over the standard 100 head (pages 161 & 165).

The individual cow production and pasture record sheets were developed to keep for multiple years. All other sheets may need to be replaced for the next year. Any record sheets that do not apply for an operation can simply be removed. Additional record sheets can be developed based on the needs of each operation. If individual animal records are not maintained, then there is no need for printing off the cow production history sheets.

One final suggestion, record keeping is most valuable when used for decision making such as business analysis or cattle selection. In order to get the most value from the records kept in this book, profitability and herd performance measures should be developed for the year. However, with regulation and animal trace back, having a good set of records is becoming more and more important. So keep the records to be able to prove what you have done, but also use the records to analyze performance and profitability, to make your operation more efficient over the long haul.

January	Planning	Calend	ıar		
January					
February					
March					

Ranch Planning Calendar
April
May
June

Ranch 1	Planning	Calend	ar	 	
July					
August					
September					

Rai	nch Planni	ng Calen	dar		
Octobe	er				
Novem	iber				
Decem	ber				

Pasture Records

Rainfall Record

Year	
------	--

Day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
1									-			,
2												
3												
4												
5												
6												
7												
8												
9												
10												
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31												
Total												

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Pasture/Field Record

Pasture I.D.	Number of Acres
--------------	-----------------

Crop Record

Planting Date	Crop	Variety	Seeding/Sprigging Rate/Acre	Total Acres Planted	Area Planted

Harvest Record

Date	Crop	Yield and Comments (# seed, # bales)

Soil Test	Record												
	Test	Results		Test Recommendations									
Date Sampled	pН	P-range or ppm	K-range or ppm	#N/acre	#P/acre	#K/acre	Lime/ac						
Foutilizon	Dogard												
Fertilizer Date Applie		izer Type R	ate/Acre #	# Acres Appl	ied Total A	pplied Are	ea Applied						
Pasture In		ents or Repa of Improvem		ription of I	mprovemei	nt							

Pasture I.D._____ Number of Acres_____

Pasture I.D.	Number of A	cres

Pest Scouting & Control Record

Date Pest Scouted	Pest Observed: Insect, Weeds, Disease	Pest Levels: % damage, or light, medium, or heavy	Crop Affected	Product Used	Wind, Weather & Field Conditions	Treatment Method: Sprayer, nozzles, speed, pressure, gallons/acre etc.	Control: Poor, Fair, Good, Excellent

Pesticide Use Record

Licensed Applicator: License Number: Property Owner:

Date and Time of Treatment	Actual Applicator (if different from above)	Brand Name	Active Ingredient	Product EPA Registration #	Crop Treated	Rate Applied per Acre	Size of Area Treated	Total Amount Applied	Restricted Entry Interval	Grazing or Hay Restriction

Pasture I.	D		N	Number of Acres									
Grazing F Date In	Record Grass	Date Out	Grass	Total	Herd ID	Number							
2000 200	Height In		Height Out	Grazing Days		of Head							

Individual Cow Records

Cow Production History Card

Cow ID		Reason
Description (Breed/color) _		Sale
Cow's Sire	Sire Breed	Weight Sale
Cow's Dam_	Dam Breed	Price/lb.
Cow's Birth Date	Weaning Weight	Total Value
Purchase Date	Purchase Price	

Cow Production Record

				Calving	5					We	eaning	Pregna	ncy Test
Year	Cow Age	Bull ID & Breed	Calf ID	Calf Birth Date	Calf Sex	Birth Weight	BCS at Calving	Calving Problems	Calving Interval (Days)	Weaning Weight	Replacement Heifer Kept yes/no	Pregnant or Open	BCS or Other Remarks

Date of

Sale or Removal

Breeding Records

Bull Breeding Soundness Exam Record

Date	Bull I.D.	Ago of Rull	Votoringrian	Comments
Date	Dull 1.D.	Age of Dun	V CUCI III ai i aii	Comments



Beef Cattle Gestation Table

Based on 283 day pregnancy

																		1														_	
Bred	Jan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Jan
Calve	Oct	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	Nov
Bred	Feb	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				Feb
Calve	Nov	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7				Dec
Bred	Mar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mar
Calve	Dec	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6		Jan
Bred	Apr	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		Apr
Calve	Jan	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6		Feb
Bred	May	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	May
Calve		7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		28	1	2	3	4	5	6	7	8	9	Mar
Bred	Jun	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
	Mar	10		12	13	14	15	16	17	18	19	20	21		23	24	25	26	27	28		30	31	1	2	3	4	5	6	7	8		Jun
	Jul	10	2	3		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		21	22	23	24	25	26	27	28	29	30	31	Apr
Bred					4																												Jul
Calve	Apr	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	May
Bred	Aug	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Aug
Calve	May	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	Jun
Bred	Sep	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		Sep
Calve	Jun	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9		Jul
Bred	Oct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Oct
Calve	Jul	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	Aug
Bred	Nov	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		Nov
Calve	Aug	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8		Sep
Bred	Dec	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	٠.	Dec
Calve		9	10	11	12	13	14	15	16	17	18		20		22	23	24	25	26	27	28	29	30	1_	2	3	4	5	6	7	8	9	Oct
J W. 10	Sep	Š		• •		. •		. •	. •	• •	. •	. •	ľ	_ '				L													_		UCI

(In leap years add one day after February 29)

Developed by Doug Mayo, Jackson County Extension

Breeding or A.I. Record

Cow ID	Herd ID	1 st Service Date	Sire	Est. Calving Date	2nd Service Date	Sire	Est. Calving Date	Technician	Pregnancy Status

Pregnancy Testing Record

Date	Herd I.D.	Bull I.D. & Breed	Cow I.D.	Cow Age	BCS	Pregnancy Status

Feeding Records

Supplementation Record

Herd ID	Date Started	Date Ended	Total Days	Type of Feed	Avg. Fed/Hd	Total Fed/	Total lbs Fed	Cost / unit	Total Cost
					/Day	Week			

Health Records

Herd Vaccination/Treatment Record

Herd	Date	Number of Head	Vaccine or Treatment	Company	Serial/ Lot Number	Dose Given	Exp. Date	Withdrawal Date	Route (SQ, IM, Oral, Pour-on)	Injection or Treatment Site	Processor

Sick Cattle Treatment Record

Herd	Animal ID or Age	Diagnosis/ Comments	Treatment & Dosage	Company	Serial Number	Lot Number	Length of Withdrawal	Withdrawal Date	Route (SQ, IM, Oral, Pour-on)	Injection/ Treatmen t Site	Processor

Herd Records

Cow Herd Inventory

Mature Cows Herd Mature Cows	ng (1-9)
Herd Mature Cows Herd Mature Cows Herd	
Herd Mature Cows Herd	
Mature Cows Herd	
Herd Herd	
Mature Cows	
Herd Mature Cows	
Herd	
Dued Heifens	
Bred Heifers	
Open Heifers	
Mature Bulls	
Bulls 1-2 Years	
Old Yearling Stocker	
Cattle	
Calves	
Horses	
Other Livestock	

Herd or Group Performance

Group or Herd I.D.	# Cows Exposed to Bull	Total Calves Born	# Calves Dead	# Calves Worked	# Calves Weaned	Total Weight of Calves	Average Wean Weight	Total # Steers Weaned	Total Steer Weight	Average Steer Weight	Total # Heifers Weaned	Total Heifer Weight	Average Heifer Weight	# Cows Bred	# Cows Open

Retained Ownership Record

Date Shipped	Group I.D.	# Head	Total Weight	Avg. Wt.	Date Sold	# Hd. Sold	Days on Feed	Feed Conversion	Average Yield Grade	% Choice	Total Expenses	Total Income	Total Profit/ Loss	Profit/ Loss per Head

Income Records

Cattle Sales Record

Date	Class of Cattle	ID Number	Weight	Price per Pound	Total Price

Other Income/Sales

Date	Item Sold or Service	Company or Individual	Description of Income	Income per Unit	Total Income
	Provided				

Expense Records

Expenses/Purchases

Date	Item or Service	Company	Reason for Expense	Cost/Unit	Total Cost

Ranch Analysis

Cash Cost Analysis

Category	Total Purchased	Total Expense
Feed		
Fertilizer		
Cattle		
Pesticides		
Pharmaceuticals		
Fence Supplies		
Fuel		
Tractor		
maintenance/repairs		
Truck maintenance/repairs		

Total Ex	penses			

Category	Number Sold	Total Income
Steer Calves		
Heifer Calves		
Cull Cows		
Cull Bulls		
Hay		
Services		

Total Income	
Gross Profit/Loss	

Total Cattle Performance Analysis

Year:	Beginning Date	Ending Date	# Head
			XXXXXXXXX
Breeding			XXXXXXXXX
		Cows Evnosod	
		Cows Exposed	XXXXXXXXX
Calving			XXXXXXXXXX
<u> </u>			
		Total Calves Born	
		Live Calves	
		Live Caives	
		Dead Calves	
			XXXXXXXXX
Weaning			XXXXXXXXX
		Total Calves Weaned	
		Total Calves Wealled	
		Steers Weaned	
		Heifers Weaned	
		Bulls Weaned	
		Duils Wealled	
		Average Wwt.	
		Avg. Steer Wwt.	
		Avg. Heifer Wwt.	
		Avg. Hener www.	
		Avg. Bull Wwt.	
			XXXXXXXXX
Pregnancy Check			XXXXXXXXX
		Bred Cows	
		Dica Cows	
		Open Cows	
		Corre Culled	
		Cows Culled	
Pregnancy Perce	ntage = # Bred Cow	vsdivided by # C	Cows Exposed
		divided by # (Cows
Weaning Percentage	e= # Calves Weaned	divided by # Cows E	xposed=
Lbs. Weaned/Cow E	Exposed Avg. Weaning	Wtmultiplied by We	aning %=_
	_	-	_ _

Useful Information

Useful Extension Publications available Online from the University of Florida and other Universities

Pastures

Planting Dates, Rates, and Methods of Agronomic Crops	http://edis.ifas.ufl.edu/AA127
UF/IFAS Standardized Fertilization Recommendations for	http://edis.ifas.ufl.edu/SS163
Agronomic Crops	
Weed Management in Pastures and Rangeland	http://edis.ifas.ufl.edu/WG006
Insect Management in Pasture	http://edis.ifas.ufl.edu/IG061
Bahiagrass	http://edis.ifas.ufl.edu/AA184
Bermudagrass Production in Florida	http://edis.ifas.ufl.edu/AA200
Annual Ryegrass	http://edis.ifas.ufl.edu/AG104
Hay Production in Florida	http://edis.ifas.ufl.edu/AA251
Forage Planting and Establishment Methods	http://edis.ifas.ufl.edu/AG107
Soil Testing	http://edis.ifas.ufl.edu/SS156

Beef Cattle

Keep Herd Health Simple and Make it Fit the Beef	http://edis.ifas.ufl.edu/AN002
Cattle Operation	
Different Health Scenarios to Prepare Calves for	http://edis.ifas.ufl.edu/VM081
Shipping and for Receiving Yearling Cattle	
External Parasites on Beef Cattle	http://edis.ifas.ufl.edu/IG130
Nutrient Requirements of Beef Cattle	http://www.aces.edu/department/aawm/anr-60.pdf
Strategies for Cost Effective Supplementation of Beef Cattle	http://edis.ifas.ufl.edu/AN085
Using By-Product Feeds in Beef Supplementation Programs	http://edis.ifas.ufl.edu/AN101
Strategies for Successful Development of Beef Heifers	http://edis.ifas.ufl.edu/AN100
Effects of Body Condition on Productivity in Beef Cattle	http://edis.ifas.ufl.edu/AN004
Crossbreeding Programs for Beef Cattle in Florida	http://edis.ifas.ufl.edu/AN055
Selecting Beef Bulls	http://edis.ifas.ufl.edu/AN024

Business Management

The Essential Financial Tools for Running a Firm	http://edis.ifas.ufl.edu/FE024
Custom Rates for Farm Machinery	http://edis.ifas.ufl.edu/FE268
Beef Cattle and Forage Budgets	http://www.ag.auburn.edu/dept/aec/pubs/budgets/
Cow-calf Production Record Software	http://www.ansi.okstate.edu/exten/beef/ WCR-3279/WCR-3279.pdf

Pesticide Information

Application Equipment and Techniques	http://edis.ifas.ufl.edu/WG012
Broadcast Boom Sprayer Nozzle Uniformity Check	http://edis.ifas.ufl.edu/PI015
Broadcast Boom Sprayer Calibration	http://edis.ifas.ufl.edu/PI016
Maintenance, Care and Cleaning of Application Equipment	http://edis.ifas.ufl.edu/AG006



Conversion Factors

Larry Halsey, Jefferson County Extension

WEIGHTS

28.4 grams	1 ounce (oz)	
16 ounces	1 pound (lb)	
1 pound	0.45 kilograms	
2.2 pounds	1 kilogram	
1 gallon-water	8.345 pounds	

LINEAR MEASURES - LENGTHS

1 inch	2.54 centimeters			
12 inches	1 foot	30.48 centimeters		
36 inches	3 feet	1 yard		
1 yard	0.9144 meter			
1 meter	39.37 inches			
1 mile	5,280 feet 1.609 kilometers			
1 kilometer	1,000 meters 0.6217 mile			
1/4 mile	1,320 feet			

VOLUMES, CUBIC MEASURES

1 tablespoon	3 teaspoons	14.8 ml 0.5 fl oz			
1 pint	2 cups	16 fl oz	32 Tablespoons		
1 quart	32 ounces	2 pints	0.95 liters		
1 liter	1.06 quarts	1,000 ml	33.8 fl oz		
1 gallon	4 quarts	8 pints 128 ounces			
1 gallon (liquid)	231 cu inches	16 cups 3.8 liters			
1 cubic foot	1728 cu in	7.48 gallons (liquid)			
1 cubic yard	27 cu feet	0.77 cu meters			
1 acre-inch, water	27,154 gallons	4 gallons 3,630 cubic feet			
A box 8 1/4" x 7" x 4" holds 1 gallon					
A box 16" x 12" x 11 1/4" hold 1 bushel					
A cylinder 6" deep x 7" diameter (3 1/2" radius) holds 1 gallon					

SQUARE MEASURE

1 sq foot	144 square inches			
1 sq. yard	9 sq. feet 0.836 sq. meters			
1 acre	43,560 sq. ft	0.42 hectares		

RATES, EQUIVALENTS AND CONVERSIONS

1 ounce per square foot	2,775 pounds per acre	62.5 pounds per 1,000 sq ft	
1 ounce per square yard	300 pounds per acre	7 pounds per 1,000 sq ft	
1 ounce per 100 sq ft	27 pounds per acre	0.62 pounds per 1,000 sq ft	
1 pound per 100 sq ft	436 pounds per acre	10 pounds per 1,000 sq ft	
2.5 gallons per 1,000 sq ft	100 gallons per acre		
1 quart per 100 sq ft	100 gallons per acre		
1 acre-inch per hour	450 gallons per minute		
1 part per million (ppm)	0.013 fl oz per 100 gallons of water		
1 percent solution (by weight)	1.33 fl oz per gallon		
1 foot/second	1.47 miles per hour (f	ps = 22/15 mph)	

1 cup of dry fertilizer weighs approximately 1/2 pound		
1 quart of dry fertilizer weighs approximately 1 3/4 pounds		
1 quart of dolomitic limestone weighs just over 1 1/2 pounds		
1 pound of ryegrass will overseed about 100 sq ft (10 #/1,000 sq ft)		
1 pound of bahiagrass seed will cover about 750-1,000 sq ft (25-30 #/acre)		

1 flat of 100 bedding plants will cover:			
11 sq ft when spaced 4 inches apart			
44 sq ft when spaced 8 inches apart			
100 sq ft when spaced 12 inches (1 foot) apart			
156 sq ft when spaced 15 inches apart			

Dimension of a Square Field:	Acres	Diameter of a Circular Field or Pond
208.7' x 208.7'	1 acre	235.5' (radius = 117.7')
466.7' x 466.7'	5 acres	526.6' (radius = 263.3')
660.0' x 660.0'	10 acres 744.7' (radius = 372.4')	
933.3' x 933.3'	20 acres	1,053.2' (radius = 526.6')

Temperature

°F (Fahrenheit) = (°C x 1.8) + 32
°C (Celsius) = (°F - 32) x .56

С	Equivalent Temperature	F
-40	(same)	-40
0	Water Freezes	32
16	(reciprocals)	61
20-25	Comfortable Room Temp	68-77
37	Human Body	99
100	Water Boils	212

DILUTION RATES

LIQUID MEASURE			
approximate conversion rates			
Amount per 100 gallons Amount per gallo			
1/4 pint	1/4 tsp		
1 pint	1 tsp		
1 quart	2 tsp		
1 gallon	2.5 Tbsp (1 fl oz)		
2 gallons	5 Tbsp (2.5 fl oz)		
4 gallons	1/3 pint (5 fl oz)		
10 gallons	3/4 pint (13 fl oz)		

DRY WEIGHT MEASURE				
approximate conversion rates				
Amount per 100 gallons Amount per gallon				
1/2 pound	1/12 oz			
1 pound	1/6 oz			
2 pounds	1/3 oz			
3 pounds	1/2 oz			
5 pounds 3/4 oz				

Number of Plants Required for an Area of:					
Spacing	10	15	25	50	100
(inches)	sq ft				
5" x 6"	48	72	120	240	480
5" x 8"	36	54	90	180	360
6" x 6"	40	60	100	200	400
6" x 8"	30	45	75	150	300
8" x 8"	22	33	56	112	225
10" x 10"	14	22	36	72	144
12" x 12"	10	15	25	50	100
15" x 15"	6	10	16	32	64

Row Width	Distance to Equal					Lenght for 1/100 Acre			
(inches)	1 Acre 1/100 A		1/1000 A		2 Rows	4 Rows	6 Rows		
	ft	ft	in	ft	in	ft	ft	ft	
18"	29,040'	290'	5"	29'	0"	145'	73'	48'	
20"	26,136'	261'	5"	26'	11"	131'	65'	44'	
24"	21,780'	217'	10"	21'	9"	109'	55'	36'	
28"	18,669'	186'	8"	18'	7"	93'	47'	31'	
30"	17,424'	174'	2"	17'	5"	87'	44'	29'	
32"	16,355'	163'	4"	16'	4"	82'	41'	27'	
36"	14,520'	145'	2"	14'	6"	73'	36'	24'	
38"	13,756'	137'	7"	13'	10"	69'	34'	23'	
40"	13,068'	130'	8"	13'	1"	65'	33'	22'	
48"	10,890'	108'	11"	10'	11"	54'	27'	18'	
60"	8,712'	87'	1"	8'	8"	44'	22'	15'	
72"	7,260'	72'	7"	7'	4"	36'	18'	12'	

	Miles per hour							
Equivalent Travel Rate	1 mph	2 mph	3 mph	4 mph	5 mph	6 mph		
= Ft / Minute	88	176	264	352	440	528		
= 1000 inch / min & sec			3 min 47 sec	2 min 50 sec	2 min 16 sec	1 min 54 sec		

In-Row	Thousands of Plants per Acre at Row Widths of:								Plants
Spacing (inches)	8"	12"	18"	24"	28"	32"	36"	40"	per 100 feet
1	784	523	349	261	224	196	174	157	1200
2	392	261	174	131	112	98.0	87.1	78.4	600
4	196	131	87.1	65.3	56.0	49.0	43.6	39.2	300
6	131	87.1	58.1	43.6	37.3	32.7	29.0	26.1	200
8	98.0	65.3	43.6	32.7	28.0	24.5	21.8	19.6	150
10	78.4	52.3	34.8	26.1	22.4	19.6	17.4	15.7	120
12	65.3	43.6	29.0	21.8	18.7	16.3	14.5	13.1	100
18	43.6	29.0	19.4	14.5	12.4	10.9	9.7	8.7	67
24	32.7	21.8	14.5	10.9	9.3	8.2	7.3	6.5	50

Abbreviations (in alphabetical order)

A = acre

atm = atmospheres

bu = bushel

C = cups

°C = Degrees Celcius

cc = cubic centimeters

cm = centimeter

cm2 = square centimeters

°F = Degrees Fahrenheit

fl oz = fluid ounces

ft = foot

ft2 = square feet

g = gram

gal = gallon

ha = hectare

Hg = mercury

hr = hour

in = inch

in2 = square inches

in3 = cubic inches

°K = Degrees Kelvin

kg = kilogram

km = kilometer

Kpa = kilopascals

L = liter

lb = pound

m = meter

m2 = square meters

mi = mile

min = minute

ml = milliliter

mm = millimeter

mph = miles per hour

oz = ounce

psi = pounds per square inch

pt = pint

qt = quart

°R = Degrees Rankin

sec = second

sq = square

tbsp = tablespoon

tsp = teaspoon

yd = yard

yd2 = square yards

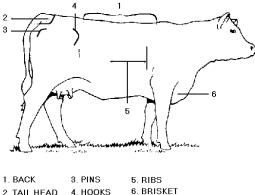


Body Condition Scoring Reference Guide

William E. Kunkle, Robert S. Sand, Owen Rae, and Doug Mayo

Good reproductive performance requires a Body Condition Score (BCS) of 5 or higher at calving and through breeding. Proper stocking rates, a good mineral supplementation program, and timely use of protein supplements offer the most potential for economically improving body condition and pregnancy rates. Separating cows by condition at pregnancy testing or two to three months prior to calving and feeding both groups to calve in BCS 5 or above will maintain high reproductive performance while holding supplemental feed costs to a minimum. The routine use of BCS in each herd will provide needed information to manage the cow herd for a high calf crop and profitability.

Key areas to observe fat cover for body condition scoring.



2. TAIL HEAD 4. HOOKS

Description of Body Condition Scores (BCS)

- BCS 1—Emaciated Bone structure of shoulder, ribs, back, hooks and pins sharp to touch and easily visible. Little evidence of fat deposits or muscling.
- BCS 2—Very Thin Little evidence of fat deposits but some muscling in hindquarters. The spinous processes feel sharp to the touch and are easily seen, with space between them.
- BCS 3—Thin Beginning of fat cover over the loin, back and foreribs. Backbone still highly visible. Processes of the spine can be identified individually by touch and may still be visible. Spaces between the processes are less pronounced.
- BCS 4—Borderline Foreribs not noticeable; 12th and 13th ribs still noticeable to the eye, particularly in cattle with a big spring of rib and ribs wide apart. The transverse spinous processes can be identified only by palpation (with slight pressure) to feel rounded rather than sharp. Full but straightness of muscling in the hindquarters.
- BCS 5—Moderate 12th and 13th ribs not visible to the eye unless animal has been shrunk. The transverse spinous processes can only be felt with firm pressure to feel rounded - not noticeable to the eye. Spaces between the processes not visible and only distinguishable with firm pressure. Areas on each side of the tail head are fairly well filled but not mounded.
- BCS 6—Fleshy Ribs fully covered, not noticeable to the eye. Hindquarters plump and full. Noticeable sponginess to covering of foreribs and on each side of the tail head. Firm pressure now required to feel transverse processes.
- **BCS** 7—Smooth Ends of the spinous processes can only be felt with very firm pressure. Spaces between processes can barely be distinguished at all. Abundant fat cover on either side of tail head with some patchiness evident.
- BCS 8—Fat Animal taking on a smooth, blocky appearance; bone structure disappearing from sight. Fat cover thick and spongy with patchiness likely.
- BCS 9—Very Fat Bone structure not seen or easily felt. Tail head buried in fat. Animal's mobility may actually be impaired by excess amount of fat.



Body condition affects the amount and type of supplements needed during the winter. Fat cows can lose body reserves, and 1 to 2 pounds per head per day of a 30 to 40 percent protein supplement plus minerals and vitamins is sufficient to maintain adequate body condition in many situations. In contrast, thin cows have little body reserves and often need 4 to 6 pounds per head per day of a high-energy supplement with 12 to 16 percent protein plus minerals and vitamins to avoid significant flesh losses and reductions in pregnancy rates.



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