

Farmer Skill & Knowledge Checklist: Beef Production

*Developed by Extension Professor Richard Brzozowski, University of Maine Cooperative Extension.
Reviewed by Associate Extension Professor Donna Coffin, University of Maine Cooperative Extension; Swine producer, Wendy Gallagher, and Dr. Dale Rozeboom, Michigan State University Extension Swine Specialist.*

This checklist is a guide to the types of skills and knowledge useful to a beef producer in Maine. Increasing your levels of knowledge and skill can help you

- improve your farm management skills,
- increase your chances of having a profitable beef enterprise, or
- gain employment in a successful beef operation.

If you are just starting out, don't be intimidated by this list; just use it to prioritize your learning. If you are experienced, remember that you can always improve and learn more, whatever your skill level.

Circle your current and desired (target) competence using this scale:

- 1=No knowledge/skill
2=Some knowledge/skill
3=Well-informed/experienced

Recommended knowledge	My current level			My target level		
Breeding and Reproduction						
Be able to identify common purebred beef breeds.	1	2	3	1	2	3
Know how to select a replacement heifer.	1	2	3	1	2	3
Know how to select a bull for a certain trait.	1	2	3	1	2	3
Know how to use an Expected Progeny Difference (EPD).	1	2	3	1	2	3
Be familiar with the benefits and drawbacks of crossbreeding.	1	2	3	1	2	3
Understand how to use heritability of various traits to improve your herd.	1	2	3	1	2	3
Understand hybrid vigor.	1	2	3	1	2	3
Be able to evaluate individual animals through body condition scoring.	1	2	3	1	2	3
Understand the implications of body condition for reproductive health.	1	2	3	1	2	3
Be able to recognize estrus in a heifer or cow.	1	2	3	1	2	3
Be able to calculate time of calving from breeding date.	1	2	3	1	2	3

Understand the reproductive tract of a beef cow.	1	2	3	1	2	3
Be familiar with the basics of and considerations for artificial insemination (AI).	1	2	3	1	2	3
Understand how estrus synchronization might be used for AI.	1	2	3	1	2	3
Be familiar with embryo transfer technology and how it might be used for beef cattle.	1	2	3	1	2	3
Be able to keep production records.	1	2	3	1	2	3

Calving

Be able to recognize when a cow is about to give birth.	1	2	3	1	2	3
Be able to deliver a calf.	1	2	3	1	2	3
Know the stages of calving and be able to recognize a normal birth.	1	2	3	1	2	3
Be able to recognize dystocia (a breech birth or other abnormal birthing) and know when assistance is needed.	1	2	3	1	2	3
Know how to recognize and treat a retained placenta.	1	2	3	1	2	3
Know how to recognize and treat a vaginal prolapse.	1	2	3	1	2	3
Be able to develop and follow a newborn calf checklist/protocol for your farm.	1	2	3	1	2	3
Be able to assemble materials for a calving kit.	1	2	3	1	2	3
Be able to safely handle a newborn calf.	1	2	3	1	2	3
Be able to properly stomach-tube a newborn calf.	1	2	3	1	2	3
Be able to apply a tincture of iodine to the umbilical cord.	1	2	3	1	2	3
Be able to recognize the difference between a male and female calf.	1	2	3	1	2	3
Be able to milk a beef cow for colostrum.	1	2	3	1	2	3
Be able to properly handle and store colostrum.	1	2	3	1	2	3
Know how to choose the appropriate castration tools for your calves.	1	2	3	1	2	3
Be able to castrate a bull calf.	1	2	3	1	2	3
Understand the different ways to dehorn a calf.	1	2	3	1	2	3
Be able to dehorn a calf.	1	2	3	1	2	3
Be able to attach an ear tag to a calf.	1	2	3	1	2	3

Beef Cattle Health

Understand the importance of sanitation and biosecurity on your farm—and when visiting other farms.	1	2	3	1	2	3
Be able to develop a biosecurity plan for everyday practices and for a biosecurity emergency.	1	2	3	1	2	3
Know the components of a cattle health program (such as various vaccinations).	1	2	3	1	2	3
Be familiar with common cattle diseases.	1	2	3	1	2	3
Be able to recognize a sick individual.	1	2	3	1	2	3
Know how to take a rectal temperature.	1	2	3	1	2	3
Be able to recognize normal and abnormal temperatures of cattle.	1	2	3	1	2	3
Be able how to calculate dosages of vaccines, dewormers, and antibiotics.	1	2	3	1	2	3
Select the proper types and sizes of needles for use on calves and cattle.	1	2	3	1	2	3
Be able to properly draw a vaccine or other injectable from a vial into a syringe.	1	2	3	1	2	3
Be able to give intramuscular (IM) injection.	1	2	3	1	2	3
Be able to give a subcutaneous (sub-Q) injection.	1	2	3	1	2	3

Be able to properly dispose of a used needle.	1	2	3	1	2	3
Know how to recognize signs of internal parasites.	1	2	3	1	2	3
Know how to take a fecal sample for diagnosis of internal parasites.	1	2	3	1	2	3
Know how to select a proper dewormer for cattle.	1	2	3	1	2	3
Be able to administer an oral dewormer.	1	2	3	1	2	3
Know how to recognize signs of external parasites.	1	2	3	1	2	3
Know how to select and apply a pour-on material for external parasite control.	1	2	3	1	2	3
Know how to differentiate antibiotics typically used for beef cattle.	1	2	3	1	2	3

Beef Nutrition

Be familiar with elements of feed bunk management, such as sanitation, feed quantity, feeding frequency, and bunk structural materials.	1	2	3	1	2	3
Know how to use the Pearson's square to balance a feed ration.	1	2	3	1	2	3
Know how to properly feed the herd sire.	1	2	3	1	2	3
Be able to balance a feed ration for a replacement heifer.	1	2	3	1	2	3
Be able to balance a feed ration for a pregnant cow.	1	2	3	1	2	3
Be able to balance a feed ration for a feeder calf.	1	2	3	1	2	3
Be familiar with types of feeds and their nutrient values.	1	2	3	1	2	3
Be able to read and interpret a feed bag label.	1	2	3	1	2	3
Be able to recognize common nutritional disorders.	1	2	3	1	2	3
Know the advantages and disadvantages of feeding by-products to your cattle.	1	2	3	1	2	3
Recognize the advantages and disadvantages of using a total mixed ration (TMR)	1	2	3	1	2	3
Be able to list components of growing and finishing rations for market animals.	1	2	3	1	2	3
Know the proper mineral supplements—and what form they should come in—for your cattle.	1	2	3	1	2	3
Be able to properly dispense minerals and other feed additives.	1	2	3	1	2	3
Be able to take a feed bunk sample.	1	2	3	1	2	3
Be able to calculate yearly or seasonal feed needs.	1	2	3	1	2	3
Know how to take a forage sample (of hay or silage) for testing, and be able to interpret the results.	1	2	3	1	2	3
Understand the importance of providing a constant source of clean water.	1	2	3	1	2	3
Train a calf to drink from a bucket.	1	2	3	1	2	3

General Management

Be familiar with beef terms.	1	2	3	1	2	3
Be able to identify and express the goals of your beef operation.	1	2	3	1	2	3
Understand how cattle behave in different situations.	1	2	3	1	2	3
Know and use the safety guidelines for working beef cattle.	1	2	3	1	2	3
Be able to place a halter on an animal.	1	2	3	1	2	3
Know how to tie a halter for quick release.	1	2	3	1	2	3
Be able to train a calf to lead.	1	2	3	1	2	3
Be able to lead a cow by the halter.	1	2	3	1	2	3

Be able to safely load cattle onto a trailer.	1	2	3	1	2	3
Be able to drive a herd of beef cattle.	1	2	3	1	2	3
Know how to weigh a beef animal.	1	2	3	1	2	3
Be able to estimate the weight of an animal within 50 pounds.	1	2	3	1	2	3
Know how to implement and maintain a cow/calf ID system.	1	2	3	1	2	3
Be able to track performance of individual animals.	1	2	3	1	2	3
Be able to set criteria for culling individual cattle from your herd.	1	2	3	1	2	3
Be able to attract and keep effective farm workers.	1	2	3	1	2	3
Be familiar with agencies and resources (public and private) for beef producers in the U.S. and Maine.*	1	2	3	1	2	3
Be familiar with cattle certification programs.	1	2	3	1	2	3

Facilities

Be able to calculate adequate space for beef cattle.	1	2	3	1	2	3
Understand space requirements for beef animals at different ages/growth stages.	1	2	3	1	2	3
Know how to select proper bedding materials for beef animals.	1	2	3	1	2	3
Know how to build or design a feed bunk.	1	2	3	1	2	3
Know how to build, design, or select a hay feeding system.	1	2	3	1	2	3
Be familiar with ways to properly store grain, hay, and forage.	1	2	3	1	2	3
Know how to design a basic manure management system.	1	2	3	1	2	3
Know the principles, design, and components of a working chute or handling facility for holding and treating individual animals.	1	2	3	1	2	3
Understand the need for proper barn ventilation in different seasons and conditions.	1	2	3	1	2	3
Understand the needs of animals for protection from the elements.	1	2	3	1	2	3
Know how to select or build and use a windbreak.	1	2	3	1	2	3

Fencing, Forages, and Pastures

Understand the basics of rotational grazing.	1	2	3	1	2	3
Understand the pros and cons of different grazing systems.	1	2	3	1	2	3
Know how to design a pasture for flexible usage.	1	2	3	1	2	3
Know the advantages and disadvantages of—and be able to choose between—electric fencing and non-electric fencing.	1	2	3	1	2	3
Know how to drive a corner fence post.	1	2	3	1	2	3
Know how to select and hang a cattle gate.	1	2	3	1	2	3
Recognize common pasture forages.	1	2	3	1	2	3
Recognize plants poisonous to cattle in Maine.	1	2	3	1	2	3
Be able to evaluate a pasture for forage quantity and quality.	1	2	3	1	2	3
Identify forage stages of maturity and their implications for quality.	1	2	3	1	2	3
Know how to take a soil sample (from a field or pasture), and be able to interpret the results.	1	2	3	1	2	3
Be familiar with different watering systems for cattle at pasture.	1	2	3	1	2	3

Selling Your Product

Be familiar with the U.S. beef industry infrastructure.	1	2	3	1	2	3
Know the food safety and food-related regulations in Maine and the U.S.	1	2	3	1	2	3
Know the grades of beef (both quality grades and yield grades).	1	2	3	1	2	3
Know the cuts of meat and from what part of the carcass they come.	1	2	3	1	2	3
Understand with the value of an animal at different growth stages and conditions.	1	2	3	1	2	3
Be familiar with and know how to find annual price cycles and trends for different ages of beef cattle.	1	2	3	1	2	3
Be able to determine when a steer or heifer is ready for market.	1	2	3	1	2	3
Know how to develop a marketing plan for your own beef operation.	1	2	3	1	2	3
Be able to identify marketing options (such as cattle sales, private treaty, cooperative marketing, and direct marketing) and choose the right ones for your operation.	1	2	3	1	2	3
Understand preconditioning requirements for specific auctions and sales.	1	2	3	1	2	3
Know the retail yield of a carcass.	1	2	3	1	2	3
Understand the importance of value-added beef products.	1	2	3	1	2	3

Economics

Be familiar with different beef enterprise types (such as feeder, cow-calf, or purebred).	1	2	3	1	2	3
Know how to use beef-based enterprise budgets.	1	2	3	1	2	3
Know how to determine the break-even point for your enterprise.	1	2	3	1	2	3
Know how to interpret market reports—and know when to sell.	1	2	3	1	2	3
Be able to keep accurate financial records (on a computer or on paper).	1	2	3	1	2	3
Be able to analyze financial records to make wise decisions.	1	2	3	1	2	3
Be able to identify and implement money-saving or labor-saving practices.	1	2	3	1	2	3
Be able to correctly complete income tax Schedule F, “Profit or Loss From Farming.”	1	2	3	1	2	3

Sources of Information

ATTRA/National Sustainable Agriculture Information Service

(formerly known as the “Appropriate Technology Transfer for Rural Areas” project)

(800) 346-9140

attra.ncat.org

Beef Quality Assurance (BQA) program

www.bqa.org

Maine Beef Industry Council (MBIC)

(207) 549-5972

www.mainebeef.org

Maine Beef Producers Association

info@mainebeefproducersassociation.org

mainebeefproducersassociation.org

Maine Department of Agriculture, Food and Rural Resources

(207) 287-3871

www.maine.gov/agriculture

National Cattleman's Beef Association

(general and specific questions, state associations, printed and Web-based publications)

(303) 694-0305

www.beef.org

Natural Resource Conservation Service (NRCS)

(help with manure management plans and other water-related issues)

(207) 990-9100

www.me.nrcs.usda.gov

“Cattle,” *Breeds of Livestock*, Oklahoma State University

(descriptions of all cattle breeds and their breed associations)

www.ansi.okstate.edu/breeds/cattle

University of Maine Cooperative Extension

(county office contacts; books and publications)

extension.umaine.edu



Information in this publication is provided purely for educational purposes. No responsibility is assumed for any problems associated with the use of products or services mentioned. No endorsement of products or companies is intended, nor is criticism of unnamed products or companies implied.

© 2009

Call 800.287.0274 (in Maine), or 207.581.3188, for information on publications and program offerings from University of Maine Cooperative Extension, or visit extension.umaine.edu

The University of Maine does not discriminate on the grounds of race, color, religion, sex, sexual orientation, including transgender status and gender expression, national origin, citizenship status, age, disability, genetic information or veteran status in employment, education, and all other programs and activities. The following person has been designated to handle inquiries regarding nondiscrimination policies: Director, Office of Equal Opportunity, 101 North Stevens Hall, Orono, ME 04469, 207.581.1226. eoinfo@umit.maine.edu