FARM INCOME WORKSHEET

This worksheet can help you make some cash flow projections about new systems you may be considering and compare them with your current setup.

ITEM	CURRENT SYSTEM $/COW	PROJECTED NEW SYSTEM $/COW
Farm cash income		
Milk sales		
Cull cow sales		
Calf sales		
Crop sales		
Other income		
Total cash income		
Farm cash expenses		
Veterinary medicine		
Dairy supplies		
Breeding fees		
Feed purchased		
Repairs		
Seed/chemicals/fertilizer		
Fuel/gas/oil		
Utilities		
Interest paid		
Labor hired		
Rent, lease and hire		
Property taxes		
Farm insurance		
Other cash expense		
Total cash expense		
NET CASH INCOME		

To calculate net cash income, subtract total cash expense from total cash income.

Derived with permission from Dairy Trans 4.0 Dairy Total Return Analysis System, Larry Tranel, author (Tranel, 2002).

TAKE STOCK OF RESOURCES AND GOALS: PART 2

Now that you've considered the many production options — and combinations of options — that exist, consider how these match with the values, skills, and goals you identified at the beginning of this book.

How comfortable are you with different types of risk? *(Mark with an X.)*

	COMFORTABLE	CAN TOLERATE	NOT COMFORTABLE
Carrying a lot of debt			
Being highly leveraged			
Needing to push my buildings and animals to ensure profitability			
Investing in expensive milking equipment			
Exposing my animals to extreme weather conditions			
Having limited market access for my type of operation			

How would you like to be viewed by your neighbors and community?
(Check all that apply.)

- ❑ Don't care
- ❑ As a leader
- ❑ As a steward of the land
- ❑ As a model, progressive dairy producer
- ❑ As an innovator who uses the latest, most up-to-date technology
- ❑ As a family farmer
- ❑ As a good community member
- ❑ As a successful business owner
- ❑ As an efficient business owner
- ❑ As a large business owner
- ❑ As having a close working relationship with my community

Which issues are of concern to your community and might impact your choice of a dairy production system? *(Check all that apply.)*

- ❑ Odor
- ❑ Environmental stewardship
- ❑ The farm is near housing development/ urban sprawl
- ❑ Livestock concentration issues
- ❑ Dust
- ❑ Unsightly buildings
- ❑ Water quality/runoff
- ❑ Flies
- ❑ Hiring labor/purchasing equipment from outside the local area

How do the various systems fit your interests and preferences?

Rank the following with a score of 1 to 3 where 1 = no, 2 = somewhat, and 3 = yes

	TIE STALL	FREE STALL	PASTURE	ORGANIC	HEIFER	VALUE-ADDED
Require the kind of work you find satisfying?						
Meet your definition of success?						
Fit with the location of your farm?						
Make best use of buildings/ land you have?						
Address community concerns?						
Suit your risk tolerance best?						
Would meet your income requirements?						
Fit with your reason for staying in/getting into dairying?						
Best use your family's strengths and resources?						
Match your vision for your farm's future?						

What land resources are available to you?

TOTAL ACRES OWNED/LEASED		TILLABLE		PASTURE		OTHER	

How do the various systems fit existing farm resources?

Rank the following with a score of 1 to 3 where 1 = no, 2 = somewhat, and 3 = yes

	TIE STALL	FREE STALL	PASTURE	ORGANIC	HEIFER	VALUE-ADDED
Land						
Buildings						
Equipment						
Parlor						
Equity						
Cows						

Begin to describe your vision for your farm and business 5, 10, or 20 years into the future.

Are there family members interested in joining the business? Who?

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[3]Every effort has been made to verify the accuracy of reference material web locations. Items on the Internet can and do move, however. If you can't find a reference at the web address provided, please try entering its key words into an Internet search engine.

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32979 Pier Ridge Road
La Crescent, MN 55947-7710

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(grazing and organic with on-farm processing)
Radiance Dairy
1745 Brookville Road
Fairfield, IA 52556-8903

Larry Webster and Family, profiled dairy producers
Webster Ridge Dairy
4100 E Ridge Road
Elsie, MI 48831-9738

Dan and Ruth Vosberg, profiled dairy producers
2295 Cisserville Road
South Wayne, WI 53587-9744

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317B Agriculture Hall
East Lansing, MI 48824-1039
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The Pennsylvania State University
115 Henning Building
University Park, PA 16802
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drw12@psu.edu

SELECTED RESOURCES, GROUPS AND PUBLICATIONS

— ARRANGED BY TOPIC —

• General Information • Adding or Upgrading Facilities or Processing Units • • Entry/Exit Strategies • Grazing • Heifer Production • Milking Center Options • • Manure, Feedlot, and Wastewater Management • Organic Production

GENERAL INFORMATION

Forage storage cost calculation spreadsheet
Available online: www.uwex.edu/ces/crops/uwforage/CSTFORST-5-1-03.XLS
Creator: Brian J. Holmes
University of Wisconsin–Madison
Biological Systems Engineering Department
460 Henry Mall
Madison, WI 53706
(608) 262-0096
bjholmes@wisc.edu

Dairy Initiatives Newsletter
Available online:
www.ansci.umn.edu/dairy/dinews/di.htm
Editor, Jeffrey K. Reneau
Department of Animal Science
University of Minnesota
205 Haecker Hall
1364 Eckles Avenue
St. Paul, MN 55108-6118

Extension Dairy Web Pages:
Michigan: www.canr.msu.edu/msue_thumb/pages/dairy_team/dairy_mgmt.htm
Minnesota: www.extension.umn.edu/dairy
Wisconsin: www.uwex.edu/ces/ag/teams/dairy

FINBIN – A farm financial and production database that summarizes actual farm data from thousands of agricultural producers who use FINPACK, a comprehensive farm financial planning and analysis software system developed and supported by the University of Minneosta Center for Farm Financial Management. You can create free benchmark reports to compare the production and economic performance of various dairy systems — including tie stall, free stall, and grazing — at the FINBIN web site:
www.finbin.umn.edu/

Minnesota Milk Producers Association
Bob LeFebvre, Executive Director
413 South 28th Avenue
Waite Park, MN 56387
(877) 577-0741
mmpa@mnmilk.org
www.mnmilk.org

Michigan Milk Producers Association
Elwood Kirkpatrick, President
41310 Bridge Street
P.O. Box 8002
Novi, MI 48376-8002
(248) 474-6672
www.mimilk.com

Professional Dairy Producers of Wisconsin
P.O. Box 2
Fox Lake, WI 53933-0002
(800) 947-7379
mail@pdpw.org
www.pdpw.org

Wisconsin Milk Marketing Board, Inc.
8418 Excelsior Drive
Madison, WI 53717
(608) 836-8820
feedback@wmmb.org
www.wisdairy.com

ADDING OR UPGRADING FACILITIES OR PROCESSING UNITS

Michigan Department of Agriculture
Sue Esser, Food and Dairy Division
P.O. Box 30017
525 West Allegan Street
Lansing, MI 48933
(800) 292-3939
www.michigan.gov/mda

ADDING OR UPGRADING FACILITIES OR PROCESSING UNITS (cont.)

Michigan Department of Environmental Quality
Constitution Hall
525 West Allegan Street
P.O. Box 30473
Lansing, MI 48909-7973
www.michigan.gov/deq
Land and Water Management: (517) 373-1170
Waste and Hazardous Materials: (517) 335-2690

Minnesota Department of Agriculture
625 N. Robert Street
St. Paul, MN 55155
(651) 201-6000
(800) 967-2474
www.mda.state.mn.us
Dairy, Food, and Meat Inspection Division,
(651) 201-6027
Meg Moynihan, Organic and Diversification Specialist,
(651) 201-6616
David Weinand, Project Consultant,
(651) 201-6646
Curt Zimmerman, Livestock Development Specialist,
(651) 201-6456

Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155
(800) 657-3864
www.pca.state.mn.us
Representatives differ by county

Wisconsin Department of Agriculture, Trade and Consumer Protection
P.O. Box 8911
Madison, WI 53708
http://datcp.state.wi.us
Jim Cisler, agricultural innovation counselor,
(608) 224-5137
Carl Rainey, grant/funding information,
(608) 224-5139
Farm Center Helpline,
(800) 942-2474

Wisconsin Department of Natural Resources
Terry Donovan, Water Resources Engineer
101 South Webster Street
P.O. Box 7921
Madison, WI 53707-7921
(608) 267-2340
http://dnr.wi.gov

ENTRY/EXIT STRATEGIES

Beginning Farmer and Rancher Opportunities
A web page from the Center for Rural Affairs
www.cfra.org/issues/beginning.htm

Sharemilking in the Midwest — Sharemilking considerations for dairy farmers.
By Larry F. Tranel. 1996. Bulletin A3670. Cooperative Extension Publications and University of Wisconsin Madison, WI. Available to order or free online at: http://cecommerce.uwex.edu (select "Agriculture" then "Farm Financial Management") or call (608) 262-3346

Wisconsin School for Beginning Dairy Farmers
Center for Integrated Agricultural Systems
University of Wisconsin–Madison
1535 Observatory Drive
Madison, WI 53706
(608) 265-6437 or (608) 588-2836
www.cias.wisc.edu/dairysch.html

GRAZING

American Grassfed Association
P.O. Box 400
Kiowa, CO 80117
(877) 774-7277
www.americangrassfed.org

ATTRA—National Center for Appropriate Technology
A sustainable and organic agriculture information service that offers free information resources—bulletins, fact sheets, etc.
P.O. Box 3657
Fayetteville, AR 72702
(800) 346-9140
www.attra.ncat.org

GRAZING (cont.)

Forage Resources
University of Wisconsin Extension Forage Resources
www.uwrf.edu/grazing/

Graze (a monthly publication)
P.O. Box 48
Belleville, WI 53508
(608) 455-3311
www.grazeonline.com

Grazing and Fencing Information Links
www.ibiblio.org/farming-connection/grazing/home.htm

Grazing Systems Planning Guide
by Kevin Blanchet, Howard Moechnig, and Jodi DeJong-Hughes. 2005. BU-07606. University of Minnesota Extension Service, St. Paul, MN. Available to order or free online at: www.extension.umn.edu/distribution/livestocksystems/DI7606.html or call (800) 876-8636.

Pastures for Profit: A Guide to Rotational Grazing
By Dan Undersander, Beth Albert, Dennis Cosgrove, Dennis Johnson, and Paul Peterson. 2002. Bulletin A3529. University of Wisconsin, Madison, WI. Available to order or free online at: http://cecommerce.uwex.edu or call (608) 262-3346.

The Stockman Grass Farmer (monthly).
P.O. Box 2300
Ridgeland, MS 39157-9911
(800) 748-9808
http://stockmangrassfarmer.com/sgf

Grass Productivity
by Andre Voisin. 1989. Island Press. Covelo, CA.

Sustainable Farming Association of Minnesota
Publishes the quarterly *CornerPost* newsletter
29731 302 Street
Starbuck, MN 56381
(866) 760-8732
www.sfa-mn.org

USDA Natural Resources Conservation Service (NRCS). Staff members provide technical assistance for planning grazing systems. This agency also offers cost share programs that defray the costs of fencing and watering systems. Contact the NRCS at your county USDA Service Center. www.nrcs.usda.gov

Wisconsin School for Beginning Dairy Farmers
Center for Integrated Agricultural Systems
University of Wisconsin–Madison
1535 Observatory Drive
Madison, WI 53706
(608) 265-6437 or (608) 588-2836
www.cias.wisc.edu/dairysch.html

HEIFER PRODUCTION

Professional Dairy Heifer Growers Association
801 Shakespeare, Box 497
Stratford, IA 50249
(877) 434-3377
www.pdhga.org

MILKING CENTER OPTIONS

Milking Parlors web page of the University of Wisconsin Research and Instruction Laboratory offers reports, plans, reviews, and calculators for planning parlor building or remodeling.
At www.uwex.edu/uwmril Click on "Milking Parlors."

MANURE, FEEDLOT, AND WASTEWATER MANAGEMENT

Environmental Protection Agency National Agriculture Compliance Assistance Center
901 North 5th Street
Kansas City, KS 66101
(888) 663-2155
www.epa.gov/agriculture/

Frequently Asked Questions about Anaerobic Manure Digestion for Livestock Operations
Minnesota Department of Agriculture, Available at:
http:www.mda.state.mn.us/feedlots/digesterfaqs.htm

MANURE, FEEDLOT, AND WASTEWATER MANAGEMENT (cont.)

Michigan Agriculture Environmental Assurance Program
A working committee that includes agricultural interest groups, agencies, commodity organizations, environmental groups, and producers
(517) 241-4730
www.maeap.org

Michigan Department of Environmental Quality
525 W. Allegan Street
P.O. Box 30473
Lansing, MI 48909
www.michigan.gov/deq

Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155-4194
(800) 657-3864
Feedlot hotline: (877) 333-3508
County feedlot officers are located throughout the state
www.pca.state.mn.us/hot/feedlots.html

ORGANIC PRODUCTION

Midwest Organic and Sustainable Education Services
P.O. Box 339
Spring Valley, WI 54767
(715) 772-3153
www.mosesorganic.org

Midwest Organic Dairy Producers Alliance
Steve Pechacek
N6157 1145th Street
Prescott, WI 54021
(715) 262-5879

Bob Mueller
40974 County Road 170
Melrose, MN 56352
(320) 256-7337

Minnesota Department of Agriculture Organic Web Page
www.mda.state.mn.us/esap/organic

National Organic Program
USDA-AMS-TMP-NOP
Room 4008–South Building
1400 Independence Avenue SW
Washington, DC 20250-0020
(202) 720-3252
www.ams.usda.gov/nop

National Organic Standards Board
A body, appointed by the Secretary of Agriculture, that develops standards for substances used in organic production and handling and that advises the Secretary on implementing the National Organic Program.
www.ams.usda.gov/NOSB

Northeast Organic Dairy Producers Alliance
c/o NOFA—VT
P.O. Box 697
Richmond, VT 05477
www.organicmilk.org

***Organic Dairy Production*.** By Jody Padgham. Orang-utan Press. Gays Mills, WI. Available by calling (715) 772-3153

The Organic Decision: Transitioning to Organic Dairy Production
Cornell University Department of Applied Economics and Management
305 Warren Hall
Ithaca, NY 14853-7801
(607) 254-7412 or (800) 547-3276
fsb1@cornell.edu

Organic Livestock Production Workbook and ***Organic Livestock Documentation Forms***
ATTRA Publication—National Center for Appropriate Technology
P.O. Box 3657
Fayetteville, AR 72702
(800) 346-9140
www.attra.ncat.org

Transitioning to Organic
by Kathy Arnold. Northeast Organic Dairy Producers Alliance. Richmond, VT. Available at:
www.organicmilk.org/transitioning.html

GLOSSARY

Alley – A walking area for cattle within a barn (such as a loafing alley, feeding alley) or cross alley (walkway) from a barn to the milking parlor.

Alley scraper – A V-shaped mechanical blade that is dragged over an alley by chain or cable to pull manure to a collection channel at the end of the alley (or possibly the center of the barn). The blade then collapses and is drawn back to the opposite end of the alley.

Antibiotic – A metabolic product of one microorganism or a chemical that in low concentrations is detrimental to activities of specific other microorganisms. Examples include penicillin, tetracycline, and streptomycin. Not effective against viruses. Antibiotics kill microorganisms that cause mastitis or other infectious disease.

Automatic detacher or Automatic take-off – A device for sensing the end of milk flow in the milking machine. It shuts off the milking vacuum and releases the milking machine from the cow's udder.

Barn cleaner – Usually a chain-linked system of paddles that moves manure from gutters, up a chute, into a waiting manure spreader. Most often seen in tie stall or stanchion barns.

Bedded pack – Open housing in a barn commonly used in conjunction with an outside feeding area.

Bedding – Material used to absorb moisture and provide cushion. A clean, dry surface reduces the incidence of mastitis. Possible bedding materials include: straw, sawdust, wood chips, sand, ground limestone, separated manure solids, shredded newspaper, corn stalks, bark, peanut hulls, sunflower hulls, and rice hulls.

Biosecurity – Any of a broad range of practices enforced at a dairy farm to prevent transmittal of pathogens from other sources by feed, cattle, people, or other animals.

Bull – A sexually mature, uncastrated bovine male.

Bulk tank – A refrigerated, stainless steel vessel in which milk is cooled quickly to 2° to 4° C (35° to 39° F) and stored until collected by a truck for shipping to the milk plant.

Bunk – A feed trough or feeding station for cattle.

Bunker silo – A flat rectangular structure with concrete floors and walls used to ensile and store forages.

Calf – A young male or female bovine. Usually referred to as calves until reaching sexual maturity.

Colostrum – First milk following calving. High in fat, protein, and immunoglobulins that may be directly absorbed by the newborn calf in its first 24 hours of life.

Cow – A mature female bovine. Usually referring to any dairy females that have borne a calf. Some may consider females having given birth only once as "first-calf heifers" until they have a second calf.

Crowd gate – A motorized or manual gate at the end of the holding pen that may be moved forward to guide cows toward the entrance to the milking parlor.

Cull – To remove a cow from the herd. Culling reasons include voluntary culling of cows for low milk production, or involuntary culling of cows for reasons of health or injury.

Dairy cow – A bovine whose milk production is intended for human consumption, or that is kept for raising replacement dairy heifers.

Distillers dried grains – feed (containing protein, fiber, vitamins and minerals) that is a byproduct of the dry-mill ethanol production process.

Direct Microscopic Somatic Cell Count (DMSCC) Microscopic count of the actual number of somatic cells in milk. This system is used to check and verify electronic cell count machines used in DHI laboratories.

Dock – To remove a cow's tail. This practice may keep cows' udders cleaner.

Dry cow – A cow that is not lactating or secreting milk because it has completed a lactation period following calving.

Dry lot – An open lot that may be covered with concrete, but that has no vegetative cover.

Equipment sanitization – The removal of microorganisms and fat, protein, and mineral residues in milking equipment through use of water, heat, and chemicals.

Flat barn – An area for milking cattle where the person milking is on the same level as the cow. May be used with a pipeline or bucket milking system. Generally the same area is used for cow housing.

GLOSSARY

Flush system – A manure removal system in which an area is cleaned by high volumes of fresh water, or gray water that is recycled from a manure pit or lagoon.

Food and Drug Administration (FDA) – An agency of the U.S. Government responsible for the safety of the human food supply.

Forage – Feedstuffs composed primarily of the whole plant, including stems and leaves.

Forestripping – Expressing streams of milk from the teat prior to machine milking to determine visual quality and to stimulate milk letdown.

Free stalls – Resting cubicles or "beds" that dairy cows are free to enter and leave, as opposed to being confined in stanchions or pens.

Fresh cow – A cow that has recently given birth to a calf.

Greenhouse barn – A hoop-type barn consisting of a translucent or plastic cover over a tubular steel frame.

Gutter – A shallow to deep channel located behind cows in tie stall barns to capture manure and urine.

Hay – Dried feed consisting of the entire plant. Alfalfa, clover, grass, and oat hay may be used in dairy rations.

Headlocks – Self-locking stanchions along a feed alley that cows voluntarily enter when going to eat. Cows may be held until herd health work is completed, and released simultaneously. Headlocks may also be adjusted to remain open, allowing cows to come and go at will, when restraining the cows is not necessary.

Heifer – A bovine female less than three years of age who has not borne a calf. Young cows with their first calves are often called first-calf heifers.

Herringbone parlor – A milking parlor in which cows stand side by side, angled toward the pit. This allows milking from the side of the udder.

Holding pen – An area in which cows congregate prior to entering a milking parlor to be milked.

Hutch – An individual housing unit for young calves. Often made of white fiberglass or polyvinyl.

Immunity – The power an animal has to resist and/or overcome an infection to which most of its species are susceptible. Active immunity is due to the presence of antibodies formed by an animal in response to previous exposure to the disease or through live or modified-live vaccines. Passive immunity is produced by giving the animal preformed or synthetic antibodies as with killed vaccines.

Lagoon – An earthen pond used as a primary storage site for manure.

Legume – Any of thousands of plant species that have seed pods that split along both sides when ripe. Legumes have a unique ability to obtain much or all of their nitrogen requirements from symbiotic nitrogen fixation.

Loose housing – Facilities that allow cattle access to a large, open bedded area for resting (also known as free housing). Loose housing should provide at least 200 ft^2 per animal for feeding and resting (free stall housing uses only 90 ft^2 per animal).

Mastitis – An inflammation of the mammary gland (or glands), usually caused by bacteria.

Mattress – Bedding material compacted to 3 to 4 inches and sandwiched in a heavyweight polypropolene or other fabric. Possible fillers include long or chopped straw, poor quality hay, sawdust, shavings, rice hulls, and shredded rubber.

Milk house – The area near a milking parlor where the bulk milk tank, cleaning units, and equipment are located.

Milk house waste – Water that has been used in cleaning the milking equipment and washing the parlor.

Milking pit – A sunken area that houses both the milker and some milking equipment during milking. A pit places the milker at shoulder level with udders and reduces physical demands.

Mycoplasma – An organism capable of causing mastitis.

Paddocks – Subdivision of a pasture designed to provide short-duration grazing followed by an appropriate (related to species, soil type, and weather conditions) rest period for regrowth and stand maintenance.

GLOSSARY

Parallel parlor– A raised milking area or platform where the cow stands perpendicular to the operator and milking units are attached between the rear legs. This may also be referred to as a "side-by-side."

Parlor – The specialized area on the dairy farm where milking is performed. Parlors come in many types: flat barn, herringbone, parallel, and rotary.

Pasture – Plants, such as grass, harvested by grazing animals. Also serves as a place to feed cattle and other livestock.

Pathogen – Any microorganism that produces disease (bacteria, viruses, yeasts, molds, and parasites).

Pipeline – A stainless steel or glass pipe used for transporting milk.

Pit – A contained unit usually with concrete walls in which liquid or semi-liquid manure is stored.

rBST – Recombinant bovine somatotropin — also called bovine growth hormone (BGH). A synthetically produced growth hormone that stimulates milk production. Sold under the trade name Posilac®.

Replacement heifers – Heifers that are raised to replace the cows currently in the herd.

Rotary parlor – A raised, round rotating platform or carousel on which cows ride while being milked.

Sand separator – A mechanical device used to settle sand from sand-laden manure.

Silage – Chopped green forage (grass, legumes, field corn, etc.) that is stored in a structure or container designed to exclude air. The material then undergoes fermentation, retarding spoilage. Silage has a water content of between 60 and 80 percent.

Silage bags – Large plastic tubes in which forages are stored and fermented. Plastic is removed and discarded as the ensiled feed is fed.

Silo – A storage facility for silage. Usually refers to upright concrete or fiberglass structures.

Slotted floor – A concrete floor design in which slats are positioned in the floor so that cows work manure through the slats and into a pit beneath the floor of the barn.

Somatic cell count (SCC) – The number of white blood cells per milliliter of milk, a measurement of the number of somatic cells present in a sample of milk. A high concentration of more than 500,000 somatic cells per milliliter of milk indicates abnormal condition in the udder. Elevation above 200,000 is an indication of mastitis.

Somatic cells – The combination of the leukocytes (white blood cells) from blood and the epithelial cells from the secretory tissue of the udder which indicate the presence of infection or injury in the animal.

Springing heifer – A heifer within 2–3 months of her due date for calving.

Stall – A cubicle that houses a cow.

Stanchion – A device consisting of two rails that close around a cow's neck after she enters a stall and keep her restrained there.

Step-up parlor – Cows step onto raised platforms for milking. The milking units are attached from the side.

Sterile – Clean, free of any living organisms. Also means unable to reproduce.

Superhutches – Calf housing structures, often open on one side, designed for a small number of calves when first grouped immediately after weaning.

Swing parlor – Parlor that has the milking units positioned in the middle of the parlor for use by cows on both sides.

Tie stall parlor – This kind of facility is frequently used for both housing and milking. Cows are tied and milked with the cow and operator on the same level.

Total mixed ration (TMR) – Feed mixtures that has been formulated to meet requirements of the cow. All of the ingredients are blended together in a mixer.

Source: Derived from Purdue University Animal Science Department's glossary