DAIRY FARMERS OF CANADA

proAction

Workbook

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CANADIAN AGRICULTURAL PARTNERSHIP

Canada

Workbook

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Introduction

proAction® Overview

Canada's dairy farmers are recognized as world leaders in producing quality milk and meat. Both processors and customers believe this to be true and have confidence in the food we produce. The key to our ongoing and future success, however, is to maintain both processor and customer confidence in the quality and sustainability of the Canadian milk and meat that go into the food they enjoy.

proAction is Dairy Farmers of Canada's (DFC) on-farm quality assurance program that groups six key modules under one umbrella:

1. Milk Quality
2. Food Safety (Canadian Quality Milk)
3. Animal Care
4. Livestock Traceability
5. Biosecurity
6. Environment

DFC utilizes the national framework that was developed for the Canadian Quality Milk (CQM) program for proAction, which will allow Canada's dairy industry to continue its business leadership in producing quality milk and meat by integrating on-farm customer assurance programs on farmers' terms and realistic timelines.

In May 2015, DFC was pleased to receive a Letter of Recognition from the Canadian Food Inspection Agency, which officially stated that the Food Safety program (CQM program) successfully completed the recognition process under the Food Safety Recognition Program. Since this time, the program has been revised to become proAction by including additional elements pertaining to animal care, traceability, biosecurity and environment. However, please note that at the time of publication of this document, the recognition only applies to the Food Safety component of proAction.

Workbook

The Workbook is designed to outline the minimum mandatory tasks that you must do to satisfy the program's requirements. This Workbook contains a Farmer Self-Evaluation Questionnaire, which is designed to allow you to assess your current practices, and determine which requirements you need to implement or improve.

The Workbook also contains the minimum mandatory records, standard operating procedures and corrective action plans that you are required to develop and maintain for the program. **You may use the samples provided or your own versions**, provided all the same key points are recorded.

Reference Manual

The Reference Manual contains detailed information on each requirement. See the Reference Manual for a full explanation on how to meet each requirement. The Reference Manual also contains troubleshooting guides. The manual is designed to be a useful tool for you as you develop your farm plans and train your staff.

Requirements

The Farmer Self-Evaluation Questionnaire outlines a number of requirements that must be met for proAction. To be registered, the farm or farmer must meet the following criteria, all of which can be found in detail in the Reference Manual:

- For all components:
  - Implement the mandatory requirements;
  - Maintain the record-keeping requirements identified in this Workbook.
- For Food Safety specifically:
  - Be licensed to ship milk by the provincial regulatory authority;
  - Meet the minimum standards set out in the Dairy Regulations of your province, as well as any pertinent Federal regulations (e.g. feed regulations) related to milk and meat safety;
  - Monitor the Critical Control Points (CCPs) through the use of permanent records;
  - Implement the mandatory Best Management Practices (BMPs).
- For Traceability specifically:
  - The standards set out by the proposed amendment to Part XV (Animal identification) of the *Health of Animals Regulations*—Government of Canada;
  - Report the requirements identified in this Workbook to the national traceability database.

Requirements are evaluated by a validator as:

- In conformance: meeting the intent of the requirement.
- Non-conformance: not meeting the intent of the requirement, and scored as either:
  - Major or minor non-conformance.
    - A **Major non-conformance** is a clear violation of the requirements. For example, in the Food Safety module, a Major non-conformance may have immediate food safety consequences.
    - A **Minor non-conformance** is a deficiency that requires corrective action, but may not have immediate consequences. For example, in the Food Safety module, a minor non-conformance does not have immediate food safety consequences.
  - Demerits – from 0 to 5 demerits for each demerit requirement. Zero demerits means that you are in conformance with the requirement, while 1 to 5 demerits reflect the severity of non-conformance.

You must correct all major or minor problems within a specified time frame identified by the validator; however, you can be registered with some demerits. The demerits allow farmers to have some flexibility and promote continuous improvement. The Workbook questions that are scored on a demerits system are identified in the Farmer Self-Evaluation Questionnaire.

Shaded areas within both the Workbook and the Reference Manual are mandatory.

Unshaded areas within both the Workbook and the Reference Manual are recommended. Review the recommendations and select those that are applicable to your operation.

Records

Farmers must monitor and control the proAction requirements through records, reporting and BMPs. Farmers who are new to the program must have a complete set of three months of records and reporting before a validation or before applying for registration. Once registered, farmers **must keep records for a minimum of one (1) rolling year, with the exception of the Traceability records (Records 1 to 5) which must be kept for a minimum of five (5) rolling years (ten (10) years in Alberta).** Records will be kept in the national traceability database for more than five (5) years. On-farm records must be complete and must also be easily accessible to staff at all times, including electronic records.

Routine Records and Reports

The routine records are permanent, written records where data is collected for easy recall and evaluation.

Reports are permanent, information that is collected and recorded into a national traceability database (DairyTrace or SimpliTRACE (Attestra)). The Livestock Traceability module requires farmers to report the following:

- Animal birth.
- Animal move-in (including import).
- Tag retirement (animal on-farm disposal and export).
- Tag replacement and/or tag losses (cross-reference).

Standard Operating Procedures

Standard Operating Procedures (SOPs) are documented step-by-step instructions describing how you want a particular task done. Examples of acceptable SOP methods are: written, pictorial, videoed or electronic files. Note, SOPs in electronic format should be backed-up. Establishing SOPs helps everyone on your farm apply procedures in a consistent manner, as well as clearly understand your expectations. Furthermore, if something goes wrong, the SOP can be re-evaluated to determine if it can be improved to prevent the problem from re-occurring.

Corrective Action Plans

Corrective Action Plans outline the steps family and staff should take to correct a problem if a problem occurs. For proAction, farmers are required to write Corrective Action Plans for some specific scenarios. The Corrective Action Plan should contain detailed instructions applicable to your operation.

Deviations and Corrective Actions

If a problem or deviation occurs at a CCP or some BMPs in the Food Safety module, farmers are required to implement corrective actions to correct the problem and try to prevent the same problem from re-occurring. The program also requires that each deviation and chosen corrective action be documented. Many of the sample records in the Workbook have a place for deviations and corrective actions to be recorded and a separate sheet is provided as well.

Verification

You must have your plans and records for the CCPs checked or verified to ensure that they have been put into place and are being followed on the farm. Validators do verification for the Food Safety module.

Implementing proAction

To implement proAction, you have to meet the mandatory requirements and keep the required records. All records, SOPs and corrective action plans must be accessible to everyone working on the farm. Moreover, you must train your employees to ensure that they understand the program requirements and that they implement them in a consistent way.

Once you have implemented the program, an on-farm validator will assess your farm by conducting a validation (i.e. an audit) of the requirements. You are responsible for demonstrating conformance to the program requirements and to making your records available to the validator. The validator then will make a recommendation to the provincial organization as to whether or not your farm adequately meets the program's requirements. You may be required to implement corrective actions before you can be registered. Once you are registered, you will undergo regular validations to ensure you are continuing to meet the program's requirements.

Your records and reports must be maintained on a continuous basis. At least one person on the farm must be responsible for ensuring that proAction is properly maintained and updated if needed.

Farmer Commitment

As part of proAction, you, or your authorized proAction farm contact, will be required to sign a declaration stating your commitment to produce safe milk and meat and to continue to maintain the proAction requirements. The declaration will ask you to declare that you understand the information listed in it and declare that you follow it. The declaration will contain information similar to:

- **ALL** of the mandatory requirements defined in the proAction Reference Manual have been addressed.
- For an initial validation, a minimum of 3 months of records are available.
- Registration may be withdrawn for cause by DFC or the Provincial Delivery Agent.
- The authorized farm contact may voluntarily terminate Registration without cause.
- The farm's Registration status will not be made publicly available by DFC without authorization from the farm.
- The proAction Reference Manual will be revised and re-issued regularly.
- Registration carries the responsibility for the authorized farm contact to:

1. Maintain the on-farm program in conformance with the proAction Reference Manual.
2. Accept regular validations and submit self-declarations and respond to the findings.
3. Inform the Provincial Delivery Agent of ownership or management changes on the farm.
4. Respect the restrictions related to the use and control of the proAction certificate.

Scope

The scope of the proAction program includes all dairy cattle (lactating and dry cattle, dairy beef and cull cattle, bulls, replacement cattle, young stock and calves), and raw dairy cattle milk. Some dairy farms also have beef or veal cattle on the farm. These animals can be excluded from the scope of proAction registration, as those industries have their own on-farm quality assurance programs, but only under certain conditions.

As a guideline, once a dairy calf is weaned and it has been castrated and/or moved to another facility for non-dairy purposes, it becomes a beef or veal animal. Specific to traceability, farmers should use dairy-approved double tags (e.g. DairyTrace tags) for any animal that may potentially remain in the dairy industry (may ever be a milk cow or breeding bull for the dairy industry).

Some examples of cattle that are in or out of scope for proAction registration are:

- A clean-up beef bull used with the dairy herd is in scope.
- Cattle that start in the dairy herd but then move over to become a beef or veal animal are in scope until they are moved over to the other sector (e.g. leave the farm). For example, any calves (e.g. bull calves or cross-bred calves) born to the dairy herd must be fed, housed, tagged, their births recorded and reported, etc. according to proAction requirements.
- Veal/beef/dairy-beef cattle housed: a) in another barn but on the same property; or, b) in the same barn but in different pens or areas, are out of scope. In these cases, a farm may or may not operate the business separately.
- Veal/beef/dairy-beef cattle housed in the same barn and mixed in with dairy cattle (e.g. young stock): since many requirements will be evaluated for the dairy cattle anyway, these animals are in scope. In these cases, a farm may have just a few animals or many.
- Beef cattle moved back to the farm from community pasture and are housed with the dairy cattle are technically out of scope; however, farmers should consider recording and reporting their move-in activity for traceability purposes.

Farmer Self-Evaluation Questionnaire

Dairy Facilities and Pesticides

Farmer Requirements Reference Manual, Chapter 1		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
Regulatory Requirements						
FS1	**Licensed dairy farm:** Is your farm currently licensed to ship milk by the provincial regulatory authority?				✓	
Pesticides and Chemicals						
FS2	Do you **only** use pesticides registered for use in the: • milk house? • barn? • fields?					✓
FS3	Do you use registered pesticides according to the label and follow pre-harvest intervals to harvest or grazing?					✓
FS4	Do you store pesticides, treated seed and fertilizer in a safe and secure manner and according to provincial dairy regulations? *(concerned with both cow and milk exposure)*					✓
FS5	Is any hose connected to the milk house or barn water system used for filling pesticide sprayers or containers? ☐ Yes ☐ No If yes, do you have an anti-backflow device?					✓
Cattle Facilities						
AC1	Do you ensure that housing for unweaned calves: **a.** Allows calves to easily stand up, lie down, turn around (180°) and adopt normal resting postures? **b.** Provides bedding? **c.** Permits calves to have visual contact with other cattle? **d.** If group housing, provides a bedded area large enough to allow all calves to rest comfortably at the same time?					✓
AC2	Do you ensure that housing for weaned heifers: **a.** Allows heifers to easily stand up, lie down, and adopt normal resting postures? **b.** Provides bedding? **c.** Permits heifers to have visual contact with other cattle? **d.** If group housing, provides a bedded area large enough to allow all heifers to rest comfortably at the same time?					✓

Farmer Requirements Reference Manual, Chapter 1		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
AC3	Do you ensure that bull housing (if applicable to your farm): **a.** Permits bulls to easily stand up, lie down, adopt normal resting postures, and mount safely? **b.** Provides bedding?					✓
AC18	Do you ensure that dry cattle housing: **a.** Allows cattle to easily stand up, lie down, and adopt normal resting postures? **b.** Provides bedding?					✓
AC4	Do you ensure that dry cattle and lactating cattle housing provides adequate stocking densities? (Free-stall: does not exceed 1.2 mature cows per usable stall. Bedded-pack pens: provide 11 m^2 (120 ft^2) per mature Holstein cow.)					✓
AC19 (FS)	Do your animal husbandry, manure and waste management systems ensure the cleanliness of lactating cattle's udders, legs and flanks?					✓
AC5	Do you ensure that the calving area (prior to and after delivery of calf) is kept clean and dry?					✓
AC6	Do you have a designated area for the segregation and treatment of sick and injured cattle?					✓
AC7	Tie-stall Barns: Are electric trainers: **a.** Designed to not exceed 2500 volts? **b.** Equipped with a height adjustment? **c.** Located over the chine when the animal is standing with her hind feet near the gutter curb?					✓
FS7	Do you restrict cattle access to manure storage or manure run-off?					✓
FS8	At the time of milk pick-up, is the laneway and loading area free of manure contamination?					✓
FS9	If you use sewage sludge, do you have the necessary approval/permits required to use sewage sludge on your farm?					✓

Feed and Water

Farmer Requirements Reference Manual, Chapter 2		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
FS10	Do you use medicated feed? ☐ Yes ☐ No If yes: have you established and implemented a Standard Operating Procedure for feeding medicated feeds? (SOP 7)					✓
FS11	Do you receive medicated feeds with milk or meat withdrawals or that are prohibited for use in lactating cattle? ☐ Yes ☐ No If yes, are feed bins and storage containers clearly marked for those who deliver the feed and for those that use it?					✓
FS12	Do you have pet foods on your farm or feeds that are labeled not for use for ruminants (i.e. clearly labeled with the warning: Feeding this product to cattle, sheep, deer or other ruminants is illegal and is subject to fines or other punishment under the Health of Animals Act)? ☐ Yes ☐ No If yes, do you store and handle those feeds to avoid feeding those feeds to cattle or cross-contaminating feeds for cattle?				✓	
AC8	Have you established and implemented a Standard Operating Procedure for colostrum management and calf feeding? (SOP 8)					✓
AC9	Do heifers receive feed that is adequate for maintaining health, growth and vigour?					✓
AC10	Do all cattle have access to a clean water source?					✓

Traceability

Farmer Requirements Reference Manual, Chapter 3		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
LT1	Do you have a Premises Identification Number?				✓	
LT2	Are your dairy cattle double-tagged with approved dairy tags (DairyTrace/Attestra)? (Record 5) * Calves must be tagged within 7 days of birth or before the animal leaves the farm of origin, whichever occurs first. * Any calves born on farm and destined for purposes other than dairy production may be identified with a single RFID ear tag (approved dairy tag) except for provinces that require double-tagging.				✓	

Farmer Requirements Reference Manual, Chapter 3		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
FS13	Do you identify all cattle to allow for the maintenance of treatment records (e.g. barn tags, neck chains, etc.), if you do not use approved dairy tags (DairyTrace/ Attestra) for management purposes?				✓	
LT3	Do you maintain current birth records on farm (birth date, animal ID number and PID where the animal is born)? (Record 1) * In the 7 days following the animal's birth or before the animal leaves the farm of origin, whichever occurs first.				✓	
LT4	Are you reporting animal birth information to the national traceability database within 45 days or before the animal leaves the farm of origin, whichever occurs first?				✓	
LT5	For animal move-in (reception of an animal at the farm, including import): Do you maintain current animal move-in records on farm (animal ID number, date of movement, PID of arrival and departure farms, licence plate number) (Record 2) * Information must be recorded within 7 days of the event or before the animal leaves the farm, whichever occurs first.				✓	
LT6	For animal move-in (reception of an animal at the farm, including import): Are you reporting the information to the national traceability database? * Information must be reported within 7 days of the event or before the animal leaves the farm, whichever occurs first.				✓	
LT7	For tag retirement (on-farm animal disposal or export): Do you maintain current tag retirement records on farm? (Record 3 and Record 4) * Information must be recorded within 7 days of the event.				✓	
LT8	For tag retirement (on-farm animal disposal or export): Are you reporting the event information to the national traceability database? * Information must be reported within 7 days of the event.				✓	

Biosecurity and Cattle Health

Farmer Requirements Reference Manual, Chapter 4		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
Cattle Health Management						
FS14	Do you have a Cattle Health Declaration signed by your veterinarian annually and the most recent version kept on file? (Record 6)				✓	
AC11	Have you established and implemented a Standard Operating Procedure for animal health practices (e.g. disbudding/dehorning, castration, supernumerary teat removal) and branding that includes appropriate pain control where required? (SOP 9)				✓	
AC12	Do you provide prompt medical care for cattle that are sick, injured, too thin (BCS ≤2), severely lame, in pain or suffering?					✓
AC20	Have you established and implemented a Standard Operating Procedure for down cattle? (SOP 10)				✓	
AC13	Have you established and implemented a Standard Operating Procedure for euthanasia? (SOP 11)				✓	
AC14	Have you: **a.** Had a cattle assessment conducted by an independent assessor on your milking herd for Body Condition Score; hock, knee and neck scores; and mobility score? (Record 7) **b.** Documented and implemented an appropriate corrective action plan for results in the red zones to meet the program's timelines for continuous improvement? (Record 7b)				✓	
AC15	Do your cattle have full tails? (Record 18)				✓	
BIO1	In the past two years, have you completed the biosecurity risk assessment with your veterinarian to identify and address biosecurity risks on your farm? (Record 6b)				✓	
BIO2	Do you record disease events for, at minimum, cows with these signs (*abortion, lameness, mastitis, diarrhea, pneumonia, death*) and calves with these signs (*diarrhea, pneumonia, death*)? (Record 10)					✓
BIO3	Have you established and implemented an SOP, in consultation with your veterinarian, for vaccinating against specific diseases of concern? (SOP 12)				✓	
Cattle Additions and Movement						
BIO4	Have you established and implemented an SOP, in consultation with your veterinarian, to prevent the introduction of infectious diseases when bringing new cattle into your facilities from other herds? (SOP 13)				✓	

Farmer Requirements Reference Manual, Chapter 4		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
BIO5	Have you established and implemented an SOP, in consultation with your veterinarian, to prevent the introduction of infectious diseases by cattle returning to your facilities from other herds, cattle shows, etc.? (SOP 14)				✓	
Personnel, Visitors, Vehicles and Equipment						
BIO6	Have you established and implemented an SOP, in consultation with your veterinarian, to prevent the introduction of infectious diseases by family, employees, farm visitors and service providers? (SOP 15)				✓	
BIO7	Do you have biosecurity signage posted on the main access point, which is visible from the main parking area?				✓	

Medicines and Chemicals Used on Livestock

Farmer Requirements Reference Manual, Chapter 5		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
FS15	Do you maintain a list of all medicines and chemicals that you use on livestock? (Record 9)				✓	
FS16	Do you store and handle livestock medicines and chemicals: **a.** (Including syringes and needles) in a clean and sanitary manner, in a dedicated place, according to label directions? **b.** In a manner that will not contaminate: milk? meat? feeds? **c.** For non-lactating and lactating dairy cattle, and products not intended for dairy cattle in separate areas or cupboards?				✓	
FS17	Do you use **only** livestock medicines (including medicated foot-baths): • Approved in Canada for use in dairy cattle? • According to the label? • According to written veterinary directions, which must be available for every treatment administered not according to the label and for every veterinary drug used that is not approved for use in Canada? (Record 8)				✓	
FS18	Do you check for and record the identity of any animal and treatment site whose treatment resulted in an irretrievable broken needle? (Record 11)				✓	
FS19	Do you mark all treated cattle in the milking herd that have milk withdrawals (e.g. leg bands)? Specify type: _____				✓	
FS20	Do you maintain a permanent written record of all medicines and chemicals used on livestock that have a milk or meat withdrawal? (Record 10)				✓	
FS21	Have you established and implemented a Standard Operating Procedure for treating cattle? (SOP 5)				✓	

Milking Management

Farmer Requirements Reference Manual, Chapter 6		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
Milking Management						
FS22	Have you established and implemented a Standard Operating Procedure for pre-milking? (SOP 1)					✓
FS23	Have you established and implemented a Standard Operating Procedure for milking? (SOP 2)					✓
FS24	Do you ensure that all teats are thoroughly cleaned, sanitized and dried (e.g. manure and teat dips removed) before milking, using approved products?					✓
FS25	Have you established and implemented a Standard Operating Procedure to minimize the risk of shipping abnormal milk? (SOP 3)					✓
Milking Treated Animals						
FS26	Have you established and implemented a Standard Operating Procedure to minimize the risk of shipping milk from treated cattle? (SOP 3)				✓	
FS27	Do you test milk from new animals for inhibitors before shipping their milk, not ship the milk unless the results are negative and record the results? (Record 10) Or do you have a letter of guarantee from the previous owner? (Record 11b)				✓	

Cooling and Storage of Milk

Farmer Requirements Reference Manual, Chapter 7		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
FS28	Is the bulk tank temperature recorded and checked after every milking for each bulk tank? (Record 12)				✓	

Facility and Equipment Sanitation

Farmer Requirements Reference Manual, Chapter 8		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
Equipment Sanitation						
FS29	Do you use approved cleaning products according to the accessible milk house cleaning and sanitizing chart? (Record 14)				✓	
FS30	Do you regularly inspect and record the cleanliness of milking equipment for each washing system, including checking and recording the temperature of the hot water from the tap or wash water, at least monthly? (Record 13)				✓	
FS31	Have you established and implemented a Standard Operating Procedure for post-milking system cleaning? (SOP 4)				✓	
FS32	Do you have each wash system evaluated annually by an industry professional and have the deficiencies been corrected? (Record 14b)				✓	
Milk House						
FS33	Is the milk house used exclusively for cooling and storing milk and for cleaning, sanitizing and storing materials and equipment used in the production and handling of milk?				✓	
FS34	Are cleaning chemicals stored in a location and manner that will not contaminate milk?				✓	
FS35	Are the milk house and external surfaces of the milking and milk storage equipment kept clean?				✓	
FS36	Do you have a functioning safety switch or fail-safe system in place to avoid accidental entry of wash water into the tank?				✓	
FS37	Have you removed all mercury thermometers and vacuum columns from the milk house?				✓	
FS38	Do all lights near the bulk tank opening have a protective covering or do the bulbs have a protective safety coating?				✓	

Farmer Requirements Reference Manual, Chapter 8		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
Use of Water for Cleaning Milk Contact Surfaces						
FS39	Do you: • Annually test the water used for milking equipment sanitation for the microbiological parameters determined by the provincial authority? • Ensure the water meets the microbiological parameters? • Keep or record the water test results? (Record 15)			[redacted]	✓	

Handling and Shipping Animals

Farmer Requirements Reference Manual, Chapter 9		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
AC16	Do you handle cattle without the use of electric cattle prods whenever possible?					✓
FS40 (AC)	Have you established and implemented a Standard Operating Procedure for shipping cattle? (SOP 6)				✓	

Environment

Farmer Requirements Reference Manual, Chapter 10		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
EN1	Do you have a valid provincial (individual) Environmental Farm Plan (EFP), Agri-environmental Support Plan (*Plan d'accompagnement agroenvironnemental*, PAA) or PAA-equivalent to identify and address environmental risks on your farm?				✓	
EN2	Have you completed the questionnaire on soil health, greenhouse gases, biodiversity, silage seepage and plastic waste?				✓	
EN3	Is your milking centre wastewater managed with proper storage or a regulatory approved treatment system?					✓
EN4	Is your manure storage adequate to avoid contamination of surface and ground water and to avoid spreading manure on frozen, snow-covered or saturated ground?					✓
EN5	Do you manage nutrients on your farm to make optimal use of manure and/or fertilizer on land?					✓

Staff Training and Communication

Farmer Requirements Reference Manual, Chapter 11		Yes	No	N/A	Validation Info	
					Major/ Minor	Demerits
FS41 (AC, LT, BIO, EN)	Do you: • Regularly train staff to implement your proAction program? • Train new staff to implement your proAction program? • Ensure staff have access to Standard Operating Procedures, corrective action plans and records that you have developed and maintained?					✓
AC17	Do you train all animal handlers, and are they familiar with cattle behaviour and quiet handling techniques?					✓
FS42	Do you have a written corrective action plan on how to communicate and address: (Record 16) • Incorrect administration of medications or other chemicals to an animal (BMP)? • Entry of milk from a treated animal into the bulk milk tank (CCP)? • Improperly cooled or stored milk (CCP)? • Dirty milk contact surfaces (BMP)? • Improper water temperature (BMP)? • Milking equipment water contaminated with bacteria (BMP)? • Sale of a treated animal or an animal with a broken needle and the next buyer was not informed (CCP)?				✓	
FS43	Do you keep a record of any problems that have occurred with, and the corrective actions taken regarding: • Any treatments administered to animals (Record 17)? • Inhibitor residues in milk (Record 17)? • Cooling and storage of milk (Record 12 or 17)? • Equipment sanitation and hot water/wash water temperature (Record 13 or 17)? • Water quality (Record 15 or 17)? • Shipping animals (Record 17)?				✓	

Mandatory Records

The following records must be kept in order to keep the requirements of proAction:

Standard Operating Procedures (SOPs):

SOP 1 SOP for pre-milking

SOP 2 SOP for milking

SOP 3 SOP for milking cattle with abnormal or treated milk

SOP 4 SOP for post-milking cleaning

SOP 5 SOP for treating cattle

SOP 6 SOP for shipping cattle

SOP 7 SOP for feeding medicated feed

SOP 8 SOP for colostrum management and calf feeding

SOP 9 SOP for animal health practices and branding

SOP 10 SOP for down cattle management

SOP 11 SOP for euthanasia

SOP 12 SOP for vaccinating cattle against specific diseases of concern

SOP 13 SOP for introduction of new cattle to the herd

SOP 14 SOP for returning cattle to the herd

SOP 15 SOP for visitors and service providers

Record 1: Animal birth record | Tag activation

Record 2: Animal move-in record (move-in | import)

Record 3: On-farm animal disposal record | Tag retirement

Record 4: Animal export record | Tag retirement

Record 5: Tag replacement and/or Tag lost | Cross-reference log

Record 6: Cattle health declaration

Record 6b: Dairy farm biosecurity general risk assessment questionnaire

Dairy farm biosecurity incremental management plan

Record 7: Cattle assessment summary sheet
Cattle assessment record

Record 7b: Cattle assessment corrective action plan

Record 8: Veterinary directions for extra-label drug use

Record 9: List of medicines and chemicals used on livestock

Record 10: Livestock treatment record

Record 11: Broken needles

Record 11b: Sample letter of guarantee/ shipping record

Record 12: Bulk tank temperature log

Record 13: Milking equipment sanitation record

Record 14: Cleaning and sanitizing chart

Record 14b: Sample annual wash system evaluation

Record 15: Water record

Record 16: Corrective action plans

Record 17: Deviation and corrective action record

Record 18: Tail docking log

Environmental Questionnaire Question List

The records in this Workbook have been field tested and proven to be the most popular with dairy farmers. **You may use them or you may provide your own.** If you choose to provide your own, they **must contain all the mandatory data.**

For Example: Livestock Treatment Records must contain:

- Animal ID#
- Treatment administered (product, dosage, mode of treatment)
- Withdrawal times (milk and meat)
- Date of treatment
- Completed withdrawals (milk and meat)
- Expiry date of product checked
- Person treating (signature)

SOP #: _____ Date written/updated _____

Purpose:

_____

Step 1 _____

_____

Step 2 _____

_____

Step 3 _____

_____

Step 4 _____

_____

Step 5 _____

_____

Step 6 _____

_____

Step 7 _____

_____

Step 8 _____

_____

Step 9 _____

_____

Step 10 _____

_____

Standard Operating Procedures (SOPs):

SOP 1: Standard Operating Procedure (SOP) for Pre-Milking

In order to assure cattle are milked with clean and properly functioning equipment, describe step-by-step the various actions that must be taken to set-up the equipment for milking. See Chapter 6 of the Reference Manual for a sample SOP and the required elements.

SOP 2: Milking

In order to assure every animal is milked the same way day after day, describe step-by-step the various actions that must be taken for milking. See Chapter 6 of the Reference Manual for a sample SOP.

SOP 3: Milking Cattle with Abnormal or Treated Milk

In order to prevent shipping abnormal milk and milk containing livestock medicine or chemical residues, describe step-by-step the various actions that must be taken to prevent this milk from entering the food supply. See Chapter 6 in the Reference Manual for a sample SOP and the required elements.

Note: If your procedures are different for abnormal and treated milk, you may need two separate SOPs.

Note: If you have a problem or improperly milk a treated animal, see Corrective Action Plans, Record 16.

SOP 4: Post-Milking Cleaning

In order to insure that milk is cooling properly and that the equipment is cleaned adequately, describe step-by-step the various actions that must be taken to set-up the equipment after milking. See Chapter 8 in the Reference Manual for a sample SOP and the required elements.

Note: If you have a problem or equipment is not cleaned, see Corrective Action Plans, Record 16.

SOP 5: Treating Cattle

In order to prevent livestock medicine or chemical residues in milk and meat, proper administration of livestock medicine is essential. Describe step-by-step the various actions that must be taken when an animal has to be treated. See Chapter 5 of the Reference Manual for a sample SOP and the required elements.

Note: If you have a problem or improperly treat an animal, see Corrective Action Plans, Record 16.

SOP 6: Shipping Cattle

Food Safety: In order to prevent shipping animals containing livestock medicine or chemical residues or broken needles, describe step-by-step the various actions that must be taken when shipping animals. See Chapter 9 in the Reference Manual for a sample SOP and the required elements.

Note: If you have a problem or ship a treated animal, see Corrective Action Plans, Record 16.

Animal Care: In order to ensure that animals are fit for transport, identified, well prepared for the journey and handled properly to ensure their welfare, describe step-by-step the actions that must be taken for shipping cattle. See Chapter 9 in the Reference Manual for a sample SOP and the required elements.

SOP 7: Feeding Medicated Feed

If you feed medicated feed (e.g. medicated calf feed) on your farm, describe step-by-step the various actions that must be taken to prevent residues from medicated feeds from entering the human food supply. See Chapter 2 in the Reference Manual for a sample SOP and the required elements.

SOP 8: Colostrum Management and Calf Feeding

In order to ensure calves are fed enough to maintain their health, growth and vigour, describe your calf-feeding program. See Chapter 2 in the Reference Manual for a sample SOP and the required elements.

SOP 9: Animal Health Practices and Branding

In order to ensure all farm personnel responsible for performing animal health practices, such as disbudding/dehorning, castration and supernumerary teat removal, and branding can perform the procedures while minimizing animal discomfort; describe the methods used on your farm. See Chapter 4 in the Reference Manual for a sample SOP and the required elements.

SOP 10: Down Cattle Management

In order to ensure that down cattle are properly cared for, and, if needed, moved as gently as possible minimizing stress and trauma, describe the down cattle procedure used on your farm. See Chapter 4 in the Reference Manual for a sample SOP and the required elements.

SOP 11: Euthanasia

In order to ensure that staff can act promptly and ensure that cattle are euthanized by qualified persons in a manner that is quick, and causes the least possible pain and distress, describe step-by-step the euthanasia method used on your farm. See Chapter 4 in the Reference Manual for a sample SOP and the required elements.

SOP 12: Vaccinating Cattle Against Specific Diseases of Concern

In order to assure cattle are vaccinated correctly, describe step-by-step the various actions that must be taken in vaccinating your herd. See Chapter 4 in the Reference Manual for a sample SOP and the required elements.

SOP 13: Introduction of New Cattle to the Herd

In order to assure every animal is introduced into your herd in a manner that limits the potential of pathogens to be introduced into your herd, describe step-by-step the various actions that must be taken for introducing cattle into your herd. See Chapter 4 in the Reference Manual for a sample SOP.

SOP 14: Returning Cattle to the Herd

In order to limit the potential for pathogens to be introduced into your herd, describe step-by-step the various actions that must be taken when returning cattle into your herd. See Chapter 4 in the Reference Manual for a sample SOP and the required elements.

Note: If your procedures are the same for introducing new cattle and returning cattle to the herd, you may combine SOPs 13 and 14.

SOP 15: Visitors and Service Providers

In order to ensure that your staff understand the biosecurity measures that are required of visitors and service providers on your farm to prevent the spread of infectious disease, describe step-by-step the various actions that must be taken. See Chapter 4 in the Reference Manual for a sample SOP and the required elements.

Record 1: Animal Birth Record | Tag Activation (**LT3**)

			Year:
Date of Birth (Day/Month)	**Animal Identification Number 15 digits (last 9 digits must be recorded)**	**Premises Identification Number Where the Animal was Born**	**Date of Record (Day/Month)**
15/04	124 000 007 001 234	QC 321654 7	20/04

* 7 days of birth **or** before the animal leaves the farm of origin, whichever occurs first

Record 2: Animal Move-In Record (Move-In | Import) **(LT5)**

Year:

Type of Event	Date of Animal's Movement (Day/Month)	Animal Identification Number 15 digits (last 9 digits must be recorded)	Premises Identification Number of Farm of Arrival	Premises Identification Number of Farm of Departure	Vehicle or Trailer Licence Plate Number
☑ Move-in ☐ Import	15/04	124 000 012 246 326	QC 321654 7	ON 123456 1	414 FZG
☐ Move-in ☐ Import					
☐ Move-in ☐ Import					
☐ Move-in ☐ Import					
☐ Move-in ☐ Import					

* 7 days of birth **or** before the animal leaves the farm of origin, whichever occurs first

Record 3: On-Farm Animal Disposal Record | Tag Retirement **(LT7)**

Year:

Date of Death (Day/Month)	Animal Identification Number 15 digits (last 9 digits must be recorded)	Premise Identification Number Where the Animal was Found Dead	Date of Record (Day/Month)
15/04	124 000 012 246 326	QC 321654 7	20/04

* 7 days following the animal's death

Record 4: Animal Export Record | Tag Retirement **(LT7)**

				Year:
Date of Animal's Departure (Day/Month)	**Animal Identification Number 15 digits (last 9 digits must be recorded)**	**Premises Identification Number of Farm of Departure**	**Location to Which the Animal was Exported (arrival)**	**Vehicle or Trailer Licence Plate Number**
15/04	124 000 012 246 326	ON 123456 1	Vermont	414 FZG

* 7 days following animal loading for export

Record 5: Tag Replacement/Tag Lost | Cross Reference Log **(LT2)**

			Year:
Date of Replacement (Day/Month)	**Original Animal Identification Number 15 digits (last 9 digits must be recorded)**	**New Animal Identification Number 15 digits (last 9 digits must be recorded)**	**Date of Record (Day/Month)**
15/04	840 000 123 456 789	124 000 007 001 234	20/04

* 7 days following the retagging of the animal or before the animal leaves the farm, whichever occurs first

Record 6: Cattle Health Declaration **(FS14)**

Farmer Name (Name on License): _____

License #: _____

Veterinarian Name: _____

Veterinarian Declaration:

As of this date, I have visibly observed the general health status of the cattle in this herd and found them to be healthy, or receiving satisfactory care and treatment for routine health conditions. I have verified that this farmer has in place a system for identifying treated and sick cows and for preventing milk from these cows from entering the farmer's bulk tank(s).

Veterinarian's Signature: _____

Date: _____

Notes:

The Declaration is valid for one year and must be renewed annually.

MB, ON and QC have different forms for the Declaration. Farmers should contact their provincial associations for these forms.

Guidelines for the Declaration:

The intent of the Cattle Health Declaration is to satisfy the export requirement from foreign countries to demonstrate that milk used in exported products is sourced from healthy animals. An annual herd health inspection conducted by a veterinarian is the minimum requirement.

A veterinarian should look for evidence or visible signs in the herd for a disease that is transmissible to humans by milk or that adversely affects the quality or flavor of the milk. If the milk is considered acceptable by the provincial regulatory body, the veterinarian should be able to sign the Declaration.

All Canadian farmers are required to obtain the Declaration because milk is co-mingled in Canada and milk destined for export products is not segregated.

The Cattle Health Declaration does not include animal welfare. It is specific to animal health.

Record 6B: Dairy Farm Biosecurity General Risk Assessment Questionnaire **(BIO1)**

Farm Name: _____ Assessment Date: (YYYY/MM/DD) _____

Contact Name: _____ Premises ID: _____

Mailing Address: _____

Farm address (if different from the mailing address): _____

Telephone: (_____) _____ - _____ E-mail address: _____

Please list the three diseases you are most concerned about on your farm: _____

	Percent of time that each practice is implemented on this farm ➔	Never or No 0 - 9%	Rarely 10 – 49%	Some times 50 - 69%	Almost always 70 – 95%	Always or Yes 96 - 100%	Not applic-able	Comments
Section 1. Cattle Health Management								
1.1	Do you maintain no contact of pre-weaned calves from older cattle?	◯	◯	◯	◯	◯	◯	
1.2	Do you maintain no contact of weaned calves from cows?	◯	◯	◯	◯	◯	◯	
1.3	Do you maintain no contact of dry cows from lactating cows?	◯	◯	◯	◯	◯	◯	
1.4	Do you prevent calves from nursing their dams?	◯	◯	◯	◯	◯	◯	
1.5	Do you separate calves from their dam within 30 minutes of birth?	◯	◯	◯	◯	◯	◯	
1.6	Are newborn calves offered at least 4 litres of colostrum (2 litres for Jerseys) within 12 hours of birth (calf's first feed given no more than 6 hours after birth)? **proAction requirement	◯	◯	◯	◯	◯	◯	
1.7	What type(s) of milk do you feed to your calves?							
	• Milk replacer	◯	◯	◯	◯	◯	◯	

	Percent of time that each practice is implemented on this farm →	Never or No 0 - 9%	Rarely 10 – 49%	Some times 50 - 69%	Almost always 70 – 95%	Always or Yes 96 - 100%	Not applic-able	Comments
	• Whole milk from cows (saleable)	◯	◯	◯	◯	◯	◯	
	• Non saleable milk (abnormal or with drug residues)	◯	◯	◯	◯	◯	◯	
1.8	If you feed non-saleable (abnormal or with drug residues) milk, do you pasteurize before it is fed to calves?	◯	◯	◯	◯	◯	◯	
1.9	Keeping in mind the disease prevention priorities of this farm, are calves housed in a way that minimizes disease? If group-housed, severely sick calves are separated from the group? Some elements to consider when reviewing calf housing are stocking density, cleanliness and ventilation.	◯	◯	◯	◯	◯	◯	
1.10	Do you establish and implement a veterinarian-reviewed vaccination program for specific infectious diseases? How often are the established vaccination protocols followed on farm? **proAction requirement	◯	◯	◯	◯	◯	◯	
1.10a	Which diseases do you vaccinate for?							
1.11	Do you have established and implemented Standard Operating Procedures (SOPs) for dealing with clinical cases of infectious diseases?	◯	◯	◯	◯	◯	◯	
1.11a	Which infectious diseases do you have SOPs for?							
1.12	Are sick or infected cattle managed/milked after those that are healthy?	◯	◯	◯	◯	◯	◯	
1.13	Do you maintain health records (to include the **Disease Event Record) for individual animals? **proAction requirement	◯	◯	◯	◯	◯	◯	

	Percent of time that each practice is implemented on this farm →	Never or No 0 - 9%	Rarely 10 – 49%	Some times 50 - 69%	Almost always 70 – 95%	Always or Yes 96 - 100%	Not applic-able	Comments
1.14	Do you review, with your veterinarian, health records to monitor the occurrence of infectious diseases in your herd?	○	○	○	○	○	○	
1.15	Does your veterinarian perform necropsies on cattle that die of unknown causes?	○	○	○	○	○	○	
1.16	Is manure spread on fields which will be grazed, or harvested for young cattle, during the same season?	○	○	○	○	○	○	
1.17	Do you follow a veterinarian-reviewed parasite control program?	○	○	○	○	○	○	
1.18	Do you use a well-managed footbath to control digital dermatitis?	○	○	○	○	○	○	
Section 2. Cattle Additions and Movement								
2.1	Have you introduced new cattle into your herd since this risk assessment was last performed (or in the last 2 years if no prior risk assessment was performed)? If yes:	○				○		
2.1a	• Do you insist on receiving health records for these cattle before introducing them into your herd?	○	○	○	○	○	○	
2.1b	• Do you insist that these cattle are vaccinated before introducing them into your herd?	○	○	○	○	○	○	
2.1c	• Do you isolate these cattle before introducing them into your herd?	○	○	○	○	○	○	
2.1d	• Do you test these cattle for specific diseases of concern?	○	○	○	○	○	○	
2.2	In the time since the last risk assessment (or in the last 2 years if no prior risk assessment was performed) have cattle been reintroduced after being in contact with other cattle (e.g. shows, fairs, boarding, etc.)? If yes:	○				○		
2.2a	• Do you isolate these cattle before introducing them back into your herd?	○	○	○	○	○	○	

	Percent of time that each practice is implemented on this farm →	Never or No 0 - 9%	Rarely 10 – 49%	Some times 50 - 69%	Almost always 70 – 95%	Always or Yes 96 - 100%	Not applic-able	Comments
2.3	Do you isolate sick cattle from their herdmates?	◯	◯	◯	◯	◯	◯	
Section 3. Premises and Sanitation Management								
3.1	Are alleyways scraped or flushed frequently to prevent manure contamination of cow feet and legs?	◯	◯	◯	◯	◯	◯	
3.2	Are cow stalls cleaned and bedded frequently to prevent manure contamination of udders of lactating and dry cows?	◯	◯	◯	◯	◯	◯	
3.3	Do you clean and sanitize pens than have housed sick cattle between each case?	◯	◯	◯	◯	◯	◯	
3.4	Do you have a designated area for housing sick cattle? **proAction requirement	◯				◯		
3.4a	Are sick cattle and calving cows housed separately?	◯	◯	◯	◯	◯	◯	
3.5	Do you clean and sanitize the calving pen after each use?	◯	◯	◯	◯	◯	◯	
3.5a	In the event that you do not clean and sanitize the calving pen, do you remove soiled and wet bedding and add new bedding between uses?	◯	◯	◯	◯	◯	◯	
3.6	Are cows' udders, flanks and lower legs free of manure contamination at calving? **proAction requirement	◯	◯	◯	◯	◯	◯	
3.7	Do you clean on-farm animal health equipment (e.g. balling gun, dehorners, hoof knives, stomach tubes, etc.) after each use?	◯	◯	◯	◯	◯	◯	
3.8	Do you use separate tools and equipment (e.g. shovels, forks, loader buckets, etc.) for feeding and cleaning?	◯	◯	◯	◯	◯	◯	
3.8a	If separate tools and equipment are not used, are they cleaned between uses?	◯	◯	◯	◯	◯	◯	

	Percent of time that each practice is implemented on this farm →	Never or No 0 - 9%	Rarely 10 – 49%	Some times 50 - 69%	Almost always 70 – 95%	Always or Yes 96 - 100%	Not applic-able	Comments
3.9	When artificially inseminating, is a new rectal sleeve used for each cow?	◯	◯	◯	◯	◯	◯	
3.9a	When doing a rectal examination, is a new rectal sleeve used for each cow?	◯	◯	◯	◯	◯	◯	
3.10	When vaccinating, taking blood samples or treating animals, is a new needle used for each animal?	◯	◯	◯	◯	◯	◯	
3.11	Are dead (or euthanized) animals and fetuses removed and disposed in a manner that prevents cattle, dogs, cats, wildlife, birds and rodents from accessing them?	◯	◯	◯	◯	◯	◯	
3.11a	Are the euthanized or dead cattle and fetuses removed from the other cattle/pen as soon as possible?	◯	◯	◯	◯	◯	◯	
3.12	Do you prevent animals from having fence-line contact with livestock from other farms?	◯	◯	◯	◯	◯	◯	
3.13	Is stored feed protected from contamination by cattle, dogs, cats, wildlife, birds and rodents?	◯	◯	◯	◯	◯	◯	
Section 4. Personnel, Visitors, Vehicles and Equipment								
4.1	Do you require all workers, visitors and farm service providers and cattle transporters to wear clean or disposable coveralls and boots on your farm? **proAction requirement	◯	◯	◯	◯	◯	◯	
4.2	Have you posted visible signage on the farm, posted on the main access point that is visible from the main parking area, informing all visitors about where to report, who to contact, and areas of restricted access upon arrival? **proAction requirement	◯				◯		
4.3	Have you established and implemented an SOP for international visitors addressing footwear and clothing?	◯	◯	◯	◯	◯	◯	
4.4	Do you maintain a visitor log?	◯	◯	◯	◯	◯	◯	

Dairy Farm Biosecurity Incremental Management Plan

Farm Name: _____

Owner's Name: _____ Veterinarian: _____

Date of agreement on biosecurity management plan (YYYY MM DD): ☐☐☐☐ ☐☐ ☐☐

Ideally, only ONE priority best management practice (BMP) to improve biosecurity on the farm will be agreed to for implementation within the next year by the herd owner, but there may be more. It is essential that the owner is willing and able to implement the change(s). If the owner wishes to further improve biosecurity, a maximum of three BMPs may be agreed upon. It is important to understand that the intent of this Risk Assessment and Management Plan (RAMP) is to reduce, and if possible eliminate, the introduction of infectious diseases from outside the farm and their spread within the herd.

Recommendation(s) for management changes for this assessment:

1.

2.

3.

*To be considered complete by the proAction program, all questions of the Biosecurity Incremental Management Plan must be completed and the Plan must have at least one recommendation.

Confirmation that the Risk Assessment Questionnaire has been completed together by:

_____ _____

Owner's Signature Veterinarian's Signature

Record 7: Cattle Assessment Summary Sheet **(Ac14)**

Farm	Name			**Barn Type: (lactating only)**	☐ Free-stall ☐ Tie-stall ☐ Bedded-pack barn ☐ Pasture ☐ Other
	proAction Number		Premises ID		
Assessor	Name		Assessor Signature		
Dates	Cattle Assessment		Upcoming Validation	**Milking System:**	☐ Parlour ☐ Tie-stall ☐ Automatic milking system ☐ Other
Lactating Herd	Herd Size	Sample Size	# Identified Sick/Treated		

Summary:

Animal based Measure		Herd Distribution By Score (# of Cattle)						Cattle Scored 'A' In Herd Sample		National Targets (% Acceptable)
		'A' Acceptable			'R' Requires Corrective Action			Total (#)	Percent (%)	
Body Condition Score		BCS >2			BCS ≤ 2					≥ 95%
Hock Score		0	1		2	3				≥ 90%
Knee Score		0	1		2	3				≥ 90%
Neck Score		0	1		2					≥ 90%
Mobility Score	In-stall score	< 2 indicators			≥ 2 indicators					≥ 90%
	Gait score	1	2	'M' Monitor (#) 3 (%)	4	5				

Comments:

Cattle Assessment Record

Farm: _____ Date: _____ Assessor: _____

	Cattle ID	BCS	Hock Score	Knee Score	Neck Score	Mobility: Gait Score	Mobility: In-stall Score Indicators				Mobility: In-stall Score	Animal Comment
							Edge	Weight Shift	Rest	Uneven Movement		
1	*Sample 415*	*A*	*A*	*A*	*R*		*A*	*R*	*A*	*R*	*R*	
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
Sub-total # "As"												

Note: Remember to transfer the results to the Cattle Assessment Summary Sheet.

Record 7B: Cattle Assessment Corrective Action Plan

Farm Name	

Corrective Action Plan Details

Cattle assessment results in the Red or Dark Red zone	☐ Body Condition Score ☐ Hock Score ☐ Knee Score ☐ Neck Score ☐ Mobility Score		
What is/are the root cause(s) of the issue(s)?			
What corrective actions are being put in place to resolve the root cause(s) and improve the issue(s)? (e.g. what will be done and when/how often?)			
When should improvements should be noticeable? (e.g. number of days, weeks, months)			
What method(s) will be used to assess if corrective actions are effective? (e.g. what will be observed, number of animals, frequency of monitoring, etc.)			
Owner's Name and Signature	Name	Signature	Date
Dairy Professional's Name and Signature (e.g. veterinarian, dairy nutrition advisor, dairy specialist)	Name	Signature	Date

All elements of the table are MANDATORY

REMINDER

A Dark Red zone result leads to a 12-month assessment cycle. Three consecutive Dark Red zone results for the same measure will lead to loss of registration, which could happen in less than 3 years.

Record 8: Veterinary Directions for Extra-Label Drug Use **(FS17)**

Clinic: _____

Veterinarian: _____

Emergency Contact Information: _____

Client/Farm: _____

Patient ID or Indications for Use: _____

Product(s) Name: _____

DIN(s)/Registration Number(s): _____

If DIN is not available, check the appropriate box:

☐ vaccine ☐ compounded product ☐ Veterinary Health Product (#_____) ☐ other

Instructions for Use (including dosage, frequency, route, maximum volume per injection site, duration of treatment):

_____

_____

_____

Milk Withdrawal: _____ **Meat Withdrawal:** _____

Special Instructions, Precautions, Warnings, Storage, etc. (if required)
(e.g. human safety, special storage, inhibitor testing):

_____

_____

Veterinarian's Signature: _____

Date of Issue: _____

Date Directions Valid Until: _____

Note 1: all items are mandatory, unless indicated otherwise. Vets may use their own format, as long as all required items are included.

Note 2: see Chapter 5 of the Reference Manual for examples of extra-label drug use.

Record 9: List of Medicines and Chemicals Used on Livestock **(FS15)**

Product Name	Approved for use in dairy (✓)	Product label, insert or written instructions from vet kept (✓)	Stored according to label (✓)	Product Name	Approved for use in dairy (✓)	Product label, insert or written instructions from vet kept (✓)	Stored according to label (✓)

Record 10: Livestock Treatment Record **(FS20)**

Animal ID	**Expiry Date Valid (✓)**	**Disease Event** (such as abortion, lameness, mastitis, diarrhea, pneumonia, death)[a]	**Treatment Administered** (product, dosage, mode of treatment[b])	**Withdrawal Time (Hrs/days)**		**Date of Treatment (✓ am or pm)**	**Completed Withdrawal (✓am or pm)**		**Residue Testing (+/-)[c]**	**Person Treating (Signature)**
				Milk	**Meat**		**Milk**	**Meat**		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		
						Date: ☐ am ☐ pm	Date: ☐ am ☐ pm	Date: ☐ am ☐ pm		

a: For cows, record: abortion, lameness, mastitis, diarrhea, pneumonia, death. **For calves, record:** diarrhea, pneumonia, death.

b: Mode of Treatment IM = Intramuscular (in the muscle), IMM = intramammary (in the udder), IU = intrauterine (in the uterus), IV = intravenous (in the vein), OR = oral (in the mouth), SQ = subcutaneous (under the skin), TP = topical (on the skin)

c: Residue testing only required for new animals or a letter of guarantee from the previous owner.

Record 11: Broken Needles **(FS18)**

Animal ID	Date of Broken Needle	Location	Signature	Information Passed on to Next Buyer (✓)	Signature

Note: This record must be maintained for as long as the cattle listed remain in the herd.

Record 11B: Sample Letter Of Guarantee/Shipping Record **(FS27)**

Seller's Info (Name & PID, if available): _____

Buyer/Recipient's Info (Name and PID): _____

Date Shipped: _____

Animal Identification Number(s): _____

Do any of the animals listed above have pending milk or meat withdrawal times or broken needles?

☐ Yes ☐ No

If yes, fill in the following table:

Animal ID	Date of Treatment	Product	Dose (✓)		Completed Withdrawal Date		Broken Needle? If Yes, describe site
			According to label	Extra label	Milk	Meat	

I, the seller, have:

☐ Owned the animal(s) being sold for at least the last two months;

OR,

☐ A letter of guarantee from the previous owner(s);

OR,

☐ Tested the milk from the animal(s) for antimicrobials using _____ test or I sent the sample(s) to _____ (plant/ laboratory), and have proof of a negative antimicrobial test result(s).

Signature of Seller: _____

Signature of Buyer/Recipient: _____

Record 12: Bulk Tank Temperature Log **(FS28)**

	First Milking	Second and Subsequent Milkings
Recommended Cooling Range	Within 2 hours (½ hour preferred) 1°C – 4°C (34°F – 40°F)	• blend temperature maximum 10°C (50°F) • within 1 hour (1/2 preferred) 1°C – 4°C (34°F – 40°F)
Normal Range identified for your bulk tank *after* milking		

Month:							Year:
Day	Bulk Tank Temperature						Corrective Action (if necessary)
	am	initial	mid-day	initial	pm	initial	
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							

Note: Electronic chart recorders or logs may be substituted for this manual method. Check with a Food Safety advisor.
This record accommodates milking 3 times a day; if you milk only 2 times a day, just use two columns.

Record 13: Milking Equipment Sanitation Record **(FS30)** **AMS # OR NAME:** _____

Date	Check Sanitation Level of Equipment (✓ Clean x Unclean)																			Corrective Action
	Bulk Tank**					Milking Equipment***														
						Hot Water/ Wash Water T°*													Signature	

Potential areas to inspect: **Bulk tank: paddle, dipstick, surface, outlet, valve and gaskets. ***Milking equipment: receiver jar, pipeline inlets, inflations, milk hoses, claws, meters, weigh jars, gaskets, filter coil, buckets, pails, sanitary trap. *Note: If you use cold-water wash detergents for your system, you do not need to record the hot water temperature.

Record 14: Cleaning And Sanitizing Chart **(FS29)**

Farm Name:_____ **Date:** _____

Number of washes done in a 24-hour period:_____

Water Analysis: hardness_____ **grains pH**_____ **iron**_____ **ppm (mg/l)**

PIPELINE/AMS: #/Name: _____	**BULK TANK**
Cycle #1: _____	**Purpose:** _____
Product Name: _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___	**Product Name:** _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___
Cycle #2: _____	**Purpose:** _____
Product Name: _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___	**Product Name:** _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___
Cycle #3: _____	**Purpose:** _____
Product Name: _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___	**Product Name:** _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___
Cycle #4: _____	**Purpose:** _____
Product Name: _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___	**Product Name:** _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___
Cycle #5: _____	**Purpose:** _____
Product Name: _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___	**Product Name:** _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___
Cycle #6: _____	**Purpose:** _____
Product Name: _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___	**Product Name:** _____ Volume: _____ ml oz Temperature: (Cold Warm Hot) Water volume: _____ litres gallons Minimum start temperature: _____ ˚___ Minimum end temperature: _____ ˚___

Signed by: _____ Company: _____
(Equipment dealer/Industry professional)

Record 14B: Sample Annual Wash System Evaluation **(FS32)**

Note: Equipment dealers or industry professionals may use this form or their own wash system evaluation form. If they use their own form, they should include the items in this sample form. The Table in Section 8.1.1 of the Reference Manual provides guidance on acceptable parameters.

Purpose: The annual wash system evaluation is one step in a series of best management practices designed to help you minimize milk safety issues. The wash system evaluation is designed to help you identify problem areas so that you can prevent problems from occurring. The sample record is a guideline. Your industry professional may customize your wash system evaluation to best suit your equipment's needs. This record should be completed for **each** AMS or wash system (e.g. two robots washed by one wash sink).

Farm Name: _____ **AMS # or Name:** _____ **Date:** _____

Evaluation Parameters	Pipeline/AMS	Bulk Tank
1. Time: circulation/cycle time for: **a.** Cycle #1: _____ **b.** Cycle #2: _____ **c.** Cycle #3: _____ **d.** Cycle #4: _____ **e.** Cycle #5: _____ **f.** Cycle #6: _____ Comments/corrections:	_____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No	_____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No _____mins Adequate? ☐ Yes ☐ No
2. Temperature: Water temperature compares with the product manufacturer requirements or the Cleaning and Sanitizing Chart for: **a.** Cycle #1: _____ **b.** Cycle #2: _____ **c.** Cycle #3: _____ **d.** Cycle #4: _____ **e.** Cycle #5: _____ **f.** Cycle #6: _____ Comments/corrections:	Temperatures are in: ☐ C or ☐ F _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No	Temperatures are in: ☐ C or ☐ F _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No _____˚ Adequate? ☐ Yes ☐ No
3. Slugging Action: Comments/corrections:	Adequate slugging action for water flow (e.g. air injector or air compressor function)? ☐ Yes ☐ No	Adequate water spray? ☐ Yes ☐ No ☐ Manual Wash
4. Chemical Concentrations:		
a. Water analysis: hardness _____ grains pH _____ iron_____ ppm (mg/l)		
b. Chemical concentrations: correct amount and dispersal (i.e. are automatic dispensers working)? Comments/corrections:	Wash: ☐ Yes ☐ No Acid: ☐ Yes ☐ No Sanitize: ☐ Yes ☐ No ☐ Manual Wash – Buckets	Wash: ☐ Yes ☐ No Acid: ☐ Yes ☐ No Sanitize: ☐ Yes ☐ No ☐ Manual Wash – Buckets

Signed by: _____ Company: _____
(Equipment dealer/Industry professional)

Record 15: Water Record **(FS39)** (or keep the test results report from the lab as your record)

Source of Supply for Washing Milking Equipment**	Date Tested	Test Results						Corrective Action
		Bacteria			Others			

** DW – Dug Well IIW – Drilled T/CW- Town/City SW – Surface Water

Record 16: Corrective Action Plans **(FS42)** (Emergency Plans)

Area of Concern	Specific Incidence	Corrective Action to be Taken	Contact Person		
			Name	Phone	Cell Phone
Medicines and Chemicals Used on Livestock	Improper administration of livestock medicines or chemicals				
Milking Treated Animals	Milk from treated animals enters the bulk tank				
Shipping Animals	Animal is shipped with a chemical residue (e.g. antimicrobials) or broken needle in it and the next buyer is not informed				

Record 16: Corrective Action Plans **(FS42)** (Emergency Plans)

Area of Concern	Specific Incidence	Corrective Action to be Taken	Contact Person		
			Name	Phone	Cell Phone
Cooling and Storage of Milk	Milk is not cooled to between 1˚C to 4˚C within the acceptable cooling period				
Equipment Sanitation	1. Visible milk residue build-up on milk contact surfaces				
	2. Improper water temperature				
Use of Water for Cleaning of Milk Contact Surfaces	Water test result reveals a form of contamination (e.g. high bacteria)				

Record 16: Corrective Action Plans (FS42) (Emergency Plans)

Area of Concern	Specific Incidence	Corrective Action to be Taken	Contact Person		
			Name	Phone	Cell Phone

Record 17: Deviation and Corrective Action Record **(FS43)**

Date	Description of Problem or Deviation (i.e. what went wrong)	Description of Corrective Action Taken (i.e. how was it fixed)	Signature

Record 18: Tail Docking Log **(AC15)**

Animal ID	Date	Rationale (medical reason)	Initials

Note: This record must be maintained for as long as the cattle listed remain in the herd.

Environmental Questionnaire Question List (EN2)

The environmental questionnaire is designed to help farms take note of the positive actions they already take with respect to the environment and will provide an overview of performance on soil health, greenhouse gases, biodiversity, and other topics. This will help identify potential areas that could further benefit your farm and mitigate any impacts on the environment. Some questions may be less applicable to your farm due to its specific location or circumstances. If this is the case, please answer to the best of your knowledge when filling out the questionnaire.

A glossary follows this list.

Please note that the following list is provided for information only. You will need to complete the questionnaire online or with the assistance of a Provincial Coordinator for it to be valid. Completion of the questionnaire in this booklet will not be considered valid.

Aggregate data will be used by DFC and its members for national and provincial communications and planning efforts related to the proAction program and sustainability.

1. SOIL HEALTH

1.1 Do you use any of the following to reduce soil compaction?

- Controlled traffic patterns/traffic limited to specific areas
- Traffic in fields is avoided when conditions are unsuitable (e.g. very wet)
- Frequency of traffic is limited
- Equipment that enters fields is equipped with large width tires, dual or triple wheels, or tracks
- Tractor tires are properly inflated, and tractor is properly ballasted (balanced)
- Liquid manure is applied with a dragline (instead of with tankers)
- Farm does not use any of the above practices
- Farm does not have land for cultivation

1.2 Do you use any of the following to reduce soil erosion?

- Minimum tillage is practiced consistently on all fields
- Grassed waterways or permanent cover in areas prone to erosion
- Shelterbelts or tree windbreaks around fields
- Riparian zones or buffer strips to prevent soil loss to surface water
- Landscape restoration is practiced to replace eroded soil to hilltops, where applicable
- Cover crops are planted in shoulder seasons or inter seeded in long-season row crops
- Cross slope or contour cropping
- Tile outlet protection (e.g. rock chutes)
- Water and sediment control basins
- There is no/very little evidence of erosion on farm (examples of evidence include: exposed subsoil on knolls; knolls are different colour than rest of field; inconsistent growth throughout the field; existence of rills or gullies; accumulation of soil in low areas of the field after heavy rain; dirty snow observed; springtime evidence of soil being carried to ditches; blowing soil observed during windy conditions)
- Farm does not use any of the above practices
- Farm does not have land for cultivation

1.3 Do you use any of the following to build soil carbon?

- A minimum of a 3-year crop rotation (including deep-rooted or long-term perennials at least 2 years in a row)
- Rotational grazing
- Spreading manure at a rate for crop requirements, preferentially to application of synthetic N fertilizer
- Intercropping
- Farm does not use any of the above practices
- Farm does not have land for cultivation

1.4 If you have areas of low productivity or salinity, do you treat these field areas differently? (e.g. keep them in perennials, salt-tolerant crops)

- Yes
- No
- Farm does not have areas of low productivity or salinity
- Farm does not have land for cultivation

2. GREENHOUSE GASES

2.1 Do you use any of the following to assess and reduce energy use on the farm?

- Farm has undertaken an energy audit/assessment
- Farm has installed energy efficient…
  - lighting
  - ventilation
  - milk house equipment (e.g. efficient vacuum pumps, plate coolers, water heaters)
  - other farm equipment (e.g. irrigation equipment)
- Farm consistently uses reduced tillage practices
- One or more pieces of farm machinery have been converted from diesel to electric or renewable natural gas motors
- Farm does not use any of the above practices

2.2 Have you taken any of the following actions to reduce greenhouse gas emissions on the farm?

- Farm works with a ruminant nutritionist with the aim of:
  - achieving low milk urea nitrogen (MUN)
  - targeting reduced enteric emissions (through e.g. additives, fats in ration, etc.)
  - increasing feed efficiency
  - improving animal health
- Farm fully empties manure storage 2+ times per year
- Manure management technology to reduce emissions is used (e.g. cover, composting with or without solid-liquid separation, biodigester)
- Farm has invested in renewable energy and these are in operation on the farm
  - biogas (e.g. biodigester)
  - solar (e.g. solar panels)
  - wind (e.g. wind turbines)
  - other
  - farm purchases renewable energy for use on the farm
- Participated in a research project related to greenhouse gases
- Used a recognized on-farm tool (i.e. Dairy Farms +, Holos, Cool Farm Tool) to estimate greenhouse gas emissions
- Farm does not use any of the above practices

3. BIODIVERSITY

3.1 What actions have you taken (beneficial or detrimental*) in relation to wetlands and watercourses on your farm?

- Restored/enhanced any wetlands in the past 10 years, including those constructed to filter manure or milking centre wastewater
- Drained any wetlands in the past 10 years*
- Access to watercourses have been fenced or otherwise managed to limit livestock access
- Wetlands have been fenced to exclude livestock
- Left a vegetated area to buffer watercourses or wetlands
- There have never been wetlands on farm
- There are not any watercourses on farm
- Farm has wetlands, but none of the above actions have been taken on farm

3.2 What actions have you taken (beneficial or detrimental*) to manage or protect biodiversity on your farm?

- Installed bat boxes, cavity nest boxes or bird boxes
- Fenced off or maintained natural areas for wildlife habitat
- Maintain corridors between natural areas through active cropping or other agricultural areas, (e.g. through fencerows, ditches, buffer strips, shelterbelts, flower strips, prairie strips, etc.)
- Converted forest or native grassland into crop production in the past 10 years*
- Converted tame pastureland into crop production in the past 10 years*
- Returned cropland to forest or to grassland in the past 10 years
- Left piles of rocks undisturbed in uncropped areas, (e.g. shelterbelts or field edges (for reptile habitat))
- If you cut firewood from your forest, left standing dead trees (for woodpeckers and cavity-nesting birds)
- In the past two years, changed your actions on farm due to the presence of a particular species (e.g. practices delayed hay harvest until after July 15th or left area uncut after seeing bobolink, increased buffer around a wetland because of duck nesting, etc.)
- Practice rotational grazing
- Developed a biodiversity plan for your farm in partnership with a conservation organization

- Signed a conservation/stewardship agreement or Conservation Easement with a conservation organization to set aside parts of your farm for wildlife habitat? Examples of conservation organizations include: Ducks Unlimited Canada (DUC), Nature Conservancy of Canada (NCC), Manitoba Habitat Heritage Corporation (MHHC), Fondation de la faune (fauna foundation), or other agro stewardship group, or watershed or conservation authority
- None of the above actions has been taken on farm

3.3 Do you use any of the following practices to manage pollinator habitat and health on your farm?

- Installed, or have allowed others to install, beehives on farm
- Taken steps to minimize the use of agro-chemicals, especially pesticides, through actions such as prairie strips, intercropping, maintenance of diverse habitat around fields, etc.
- Practice integrated pest management (IPM) or are certified organic in their crop production. IPM is based on the principals of prevention, observation, monitoring and appropriate intervention
- Monitor and identify pests prior to applying pesticides at a pre-determined threshold. Blanket applications of pesticides are avoided
- Pesticide application records are maintained (for example: pesticide vendor, reason for spraying, trigger for spraying (i.e. threshold), product name, rate applied, area sprayed, date, time of day, weather conditions (wind speed, temperature, cloud cover, relative humidity), soil moisture, growth stage of crop and growth stage of weeds/insects/disease)
- Farm does not use any of the above practices

4. OTHER TOPICS

4.1 What actions do you undertake to limit the production and runoff of silage seepage from the farm's silage storage?

- A silage seepage collection system is installed and maintained on the farm
- Silage storage is located away from AND down slope from surface water or directed away from wells and watercourses
- Horizontal silos are covered or have a roof AND are located on a concrete pad instead of directly on soil
- Farm does not use or store silage
- Farm does not use any of the above practices

4.2 How do you manage plastic farm waste to avoid burning or burying it on farm?

Chemical containers

- Disposed of at landfill
- Recycled
- Returned using a take-back program
- Reused or repurposed
- Farm reduces plastic waste by using less plastics and/or choosing products/product packaging that have a lower impact on the environment (e.g. reusable, biodegradable, less plastic)
- Farm does not have access to plastic waste disposal facilities for chemical containers
- Farm does not use or does not dispose of plastic chemical containers (e.g. uses a custom applicator)

Other plastic waste (e.g. twine, bale wrap, silage covers, feed bags, etc.)

- Disposed of at landfill
- Recycled
- Returned using a take-back program
- Reused or repurposed
- Farm reduces plastic waste by using less plastics and/or choosing products/product packaging that have a lower impact on the environment (e.g. reusable, biodegradable, less plastic)
- Farm does not have access to plastic waste disposal facilities for other plastic waste
- Farm does not use or does not dispose of other plastic waste

Glossary

Ballasted or balanced – The addition of fluid to tractor tires to help counterbalance weight across all tires, to help improve traction and lower the centre of gravity for larger tires. Assists in improving productivity of tractor use in the field and potentially reducing tractor ruts when spreading manure.

Biodigester (or anaerobic digester) – A tank that digests and decomposes organic material (manure, food waste, or crop residues) using bacteria in an oxygen-free (anaerobic) environment. The process creates a renewable energy called biogas (methane and carbon dioxide) and digested organic matter that can be applied to the land as fertilizer.

Dairy Farms + – A free online tool developed by Dairy Farmers of Canada which allows farmers to assess on-farm environmental and socio-economic practices. Individual farms can calculate their carbon and water footprints, as well as other indicators like fertilizer and pesticide use, and compare their performance to provincial and national averages. By estimating your dairy farm's environmental footprint, you can customize your action plan and prioritize your actions based on the tool's recommendations and your own preferences or expected benefits. Website: https://dairyfarmsplus.ca/

Dragline – Flexible hose that is usually 6-10" in diameter used to transport manure that is pumped from manure storage to field application equipment, can vary in length and be several miles long.

Contour cropping – The agricultural practice of planting across a slope that follows a field's elevation contour lines to help reduce erosion. These contour lines create a water break to help reduce the formation of rills and gullies during times of heavy water run-off.

Cool Farm Tool – A free online tool to assess greenhouse gas emissions, biodiversity management, and water management on individual farms. It is intended to help farmers choose management options that improve their environmental performance, and to track and measure improvement over time. Website: https://coolfarmtool.org/

Enteric emissions – Discharge of gas produced by a digestive process of microorganisms when feed is digested in the rumen of cattle. It is one source of greenhouse gas emissions from agricultural production and may be further managed by adjusting feed, ionophores and other practices.

Greenhouse gas (GHG) – Gas that absorbs and emits radiant energy. The primary GHGs in the earth's atmosphere are water vapour (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3).

Grassed waterway – A shaped or graded channel established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet, to help protect soil and riparian areas from erosion in higher water conditions. Can be natural and/or man-made with grass and other vegetation, and assists diverting water to a desirable location.

Holos – A free downloadable software tool developed by Agriculture and Agri-Food Canada to estimate and provide suggestions to reduce greenhouse gas emissions on individual farms. Users can select scenarios and farm management practices that best describe their operation and then adjust these practices to see the effect on emissions. Examples of these adjustments include changing livestock feed, reducing tillage, or including perennial forages in rotation.

Integrated Pest Management (IPM) – A decision-making process for managing pests in an effective, economical and environmentally sound way. It involves planning and managing agricultural production systems to prevent insects, plant diseases and weeds from becoming pests through prevention, monitoring and control. Controls can be biological, physical, behavioural or chemical.

Intercropping – An agricultural practice where two or more crops are grown together in the same field, used as a mechanism by which the functional diversity of an agroecosystem can be increased.

Natural area – A geographical area that has developed through natural growth without intervention from humans. Examples include native prairie grasslands, natural forests, or uncropped areas near wetlands.

Minimum tillage (minimum till) – Soil conservation method to manage post-harvest residue from crops with the goal of minimum soil disturbance. Efforts include actions that avoid turning the soil over to minimize moisture and organic matter loss in the soil. Sometimes referred to as conservation tillage.

Pollinator habitat – An area with a variety of flowering plants that provide food and nesting space for bees and other insects that carry pollen from plant to plant. This may be a natural setting, such as a prairie meadow, or a man-made area of flowering plants cultivated specifically for pollinators.

Riparian strip – A strip of land (typically 10 to 15 metres wide) between water and land environments that provides wildlife habitat, streambank stability, or a corridor for wildlife. It is adjacent to a permanent or temporary waterbody and helps recharge groundwater or enhance nutrient uptake. This area can include trees, grasses, shrubs and other enhancements to help stabilize soil or improve biodiversity.

Riparian zone – A transition zone between water and land environments along creeks, streams, gullies, rivers and wetlands. Healthy riparian areas may have any combination of trees, shrubs, and/or grasses depending on the local conditions. The term is derived from the Latin word *ripa*, which means riverbank.

Rock chute – A spillway designed to reduce erosion of surface water flowing to an outlet, using rocks and/or other material to help stabilize banks or the bottom of waterways.

Rotational grazing – Shifting of livestock to different units of pasture or grasslands in a sequence to enhance the recovery and growth of plants after grazing. The sequence considers livestock density, ground cover, forage utilization, and the time needed for plants to rest and re-grow before being grazed again. It can improve use efficiency of grazing land by ruminants.

Tiled protection – Use of tiles under agriculture land surfaces as a type of drainage system to remove excess water from soil below its surface. The use of tiles increases the amount of air in pores of the soil to augment conditions for optimal growth of crops.

Upland habitat – Habitat that is up-land from a waterbody. The riparian zone (see definition above) is the first upland habitat zone you encounter as you move outward from a waterbody.

Watercourse – A natural or artificial channel through which water flows, including the movement of water in rivers, creeks and other streams which naturally pass over the surface of the land.

Water and sediment control basin – A basin that collects or stores runoff water and traps sediment, reducing erosion and preventing gully formation. It is usually placed at the lower end of slopes. Once the water is collected, it sits in the basin, allowing time for the particles, soil and nutrients to settle and separate from the water. Water is then slowly released through a tile intake and/or through soil infiltration, and sediment is periodically removed.

Wetland – A biologically diverse ecosystem permanently or seasonally flooded by water. Wetlands are areas where oxygen-free processes prevail and are characteristically comprised of aquatic plants that are adapted to the unique hydric soil. Wetlands help to purify water, process nutrients, stabilize shorelines, and support plant and animal life.


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