

# **FREQUENTLY ASKED QUESTIONS**

## **REGARDING**

### **LIVESTOCK OPERATIONS**

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## **PROVINCIAL LEGISLATION, REGULATIONS, DEFINITIONS AND AUTHORITY**

### **What is an intensive livestock operation (ILO)?**

- An intensive livestock operation is defined in provincial legislation as the confining of one animal unit to less than 370 square metres (4,000 square feet). The term "animal unit" provides a means to compare the scale or size of operations raising different species or different ages of animal. Operations of similar animal unit production will produce similar quantities of manure. Cattle in corrals and livestock/poultry in barns generally have stocking densities greater than this threshold.

An animal unit is defined as:

- one adult cow, bison or horse
- four calves (cattle or bison)
- 1.5 feeder cows
- two replacement heifers
- three boars or sows
- four gilts
- six feeder pigs
- 20 weanling pigs
- seven sheep or goats, or lambs or kids
- five elk or 20 elk calves
- eight deer or 32 fawns
- 100 chickens or 200 chicks or broilers
- 50 turkeys, geese or ducks

### **Who regulates ILOs in Saskatchewan?**

- Saskatchewan Agriculture and Food (SAF) is responsible for ensuring that ILOs protect water sources on or near their operations. Legislation covering the intensive livestock industry has been in place since 1971, and requires that operators develop and implement plans that protect water resources, including requirements to have sufficient land base for the agronomic use of manure.

### **How are ILOs regulated in Saskatchewan?**

- *The Agricultural Operations Act* has two provisions: intensive livestock provisions and nuisance provisions. ILOs are regulated under the intensive livestock provisions. All ILOs, regardless of size, are required to ensure that water resources are protected.

The ILO provisions specify that certain types of ILO must obtain provincial approval for waste storage, manure management and dead animal disposal plans to ensure water protection. These provisions enable provincial authorities to:

- ensure ILOs implement water protection plans
- conduct inspections
- cancel approvals
- issue Minister's Orders, and
- apply to the courts to issue fines.

The nuisance provisions provide a process to resolve complaints about nuisances resulting from agricultural operations and a means to ensure agricultural operations use "normally accepted agricultural practices." Nuisance is defined as disturbances, such as flies, odour, dust, smoke and noise, which adversely affect the use and enjoyment of one's property. Complaints brought before the Agricultural Operations Review Board will be reviewed to determine whether or not the complaint stems from a "normally accepted agricultural practice". There is a \$100 application fee, which is refundable if the complaint is resolved or if the board rules in favour of the complainant. The nuisance provisions apply to all forms of primary agriculture.

### **What are "normally accepted agricultural practices"?**

- The Agricultural Operations Act defines a "normally accepted agricultural practice" as:

*A practice conducted in a prudent and proper manner, consistent with accepted customs and standards followed by similar agricultural operations under similar circumstances, including the use of innovative technology or advanced management practices in appropriate circumstances. A practice conducted in conformity with any standard established by regulation. A practice which meets accepted standards for establishment and expansion.*

### **Is "fertigation", common in Saskatchewan?**

- "Fertigation" (the mixing of manure fertilizer with water in an irrigation system) is used by the pork industry, in general, but only a few producers in Saskatchewan are using it, and then only with the special permission of the province. The technology is only suitable to some operations and each proposal is reviewed individually.

### **When does a livestock operation require an approval from Saskatchewan Agriculture and Food (SAF)?**

- SAF-approved waste storage and management plans (including manure and deadstock management) are required of any ILO that:
  - contains an earthen manure storage unit or lagoon;
  - involves more than 300 animal units; or
  - involves more than 20 animal units confined for more than 10 days out of 30 if they are within 300 metres of surface water not contained on the operator's property, or within 30 metres of a domestic water well not controlled by the operator.

SAF has a publication entitled *Self-Evaluation for Approval of Plans under The Agricultural Operations Act*, which has a flow chart and animal unit table to help operators determine if they need an approval.

### **What assistance does the government provide to proponents to ensure ILO applications contain all the necessary information?**

- The information requirements of SAF and Saskatchewan Environment are outlined in the publications *Environmental Review Guidelines for Intensive Livestock Operations* and *A Workbook and Application Form for Approval of Plans under the Intensive Livestock Provisions of The Agricultural Operations Act*.

The information can be submitted in draft form to a regional specialist with SAF's Inspection and Regulatory Management Branch, who will review the application to ensure completeness. All applications are reviewed by a provincial specialist who also determines which additional agencies need to be brought into the review. These agencies can include rural municipalities, the departments of Highways and Transportation, Health, Environment, and Government Relations and Aboriginal Affairs, the Saskatchewan Watershed Authority or any other identified agency or stakeholder group. Agency responses are due within 40 days of receipt of the referral, and a decision is usually made within 10 days of receipt of all the referral responses. For more information, contact the SAF Agricultural Operations Unit of the Inspection and Regulatory Management Branch, 787-4680.

Other relevant publications include:

- *Manual for Developing a Manure and Dead Animal Management Plan*
- *Establishing and Managing a Livestock Operation*
- *Self-evaluation for Approval of Plans under The Agricultural Operations Act*
- *ILO Review and Approval Process*

#### **What role do the other agencies play in the review process?**

- SAF routinely refers applications to other agencies for their review and comment, and the applicant will receive copies of all comments regarding the application. Applications are reviewed by the Environmental Assessment Branch of Saskatchewan Environment to determine whether *The Environmental Assessment Act* regulations are applicable. Regional Environment staff also review the application.

The spill control regulations in *The Environmental Management and Protection Act*, also administered by Saskatchewan Environment, apply to ILOs. Proponents are also required to obtain water exploration and use approvals from the Saskatchewan Watershed Authority.

ILO proponents are required to obtain municipal permits (i.e. development and building permits), and rural municipalities also have the authority to establish their own land use bylaws. Proponents are encouraged to contact municipal administrators at an early stage to ensure that local requirements are met.

Staff from SAF, Saskatchewan Environment and the Saskatchewan Watershed Authority meet annually to ensure that problems are addressed and, to discuss the ILO review and approval process.

## **MUNICIPAL PLANNING, PERMITS AND BYLAWS**

### **What authority does an RM council have to regulate ILOs?**

- *The Planning and Development Act, 1983* gives municipalities the authority to govern their community, municipal servicing and development interests with respect to land use. By adopting a development plan or basic planning statement and a zoning bylaw, a municipality can establish its authority to address various land use aspects of a proposed development. Bylaws can deal with issues such as location, size of operation, manure application method, water supply or a number of other municipal interests. *The Planning and Development Act* also gives RMs the authority to amend zoning bylaws, add or update regulations or re-zone land for development.

In addition, under *The Rural Municipality Act, 1989*, RMs can support diversification and intensification of agricultural opportunities, including the development of intensive livestock operations. In order to manage the development of intensive livestock operations and surrounding land use interests, councils can consider applications for development permits against a set of criteria that have been identified within a bylaw. These criteria may address things like separation distances, public consultation and manure spreading. In the absence of a pre-existing bylaw, an RM does not have the legal authority to regulate ILOs.

### **Are there guidelines or models to which RM councils can refer when developing zoning bylaws?**

- Saskatchewan Government Relations (GR) have produced *Models of Basic Planning Statements and Bylaws*, which can be used to guide discussions. GR and the Saskatchewan Association of Rural Municipalities (SARM) have developed a model zoning bylaw that deals specifically with livestock and ILO issues.

RM councils can also hire professional planners, licensed under *The Community Planning Profession Act*, to help them draft basic planning statements and bylaws. Once a bylaw is complete, it should be reviewed by a solicitor.

### **Can the public participate in a council's development permit decision?**

- Yes. During the preparation of land use bylaws, public hearings must be held by council to incorporate community views and expectations into the bylaws. When finalized, the bylaws provide council with a clearly defined process for making land use decisions that are acceptable to the community. The bylaws should clearly identify the opportunities for public participation and which developments are considered to be "permitted" or "discretionary" use.

### **What is the difference between "permitted" and "discretionary" use, and how does it affect the decision made by council?**

- A land use bylaw will usually include a list of those land uses, buildings and/or structures which have been pre-approved by council (permitted), and those which council will consider pending the approval of ratepayers. If a development is a "permitted" use and complies with all the criteria listed under the municipal zoning bylaw, then the local development officer may authorize the proposed development. If the development is a "discretionary" use, the public is provided

an opportunity to make written submissions and presentations to council meetings and public hearings prior to a decision by council. Intensive livestock operations are usually listed as discretionary land uses.

**Can a developer or ILO operator appeal a council's decision? And to whom does he/she appeal?**

- If a municipality has a zoning bylaw, developed under *The Planning and Development Act*, that lists ILOs as a permitted use, the developer can appeal a refusal or imposition of development standards to the local Development Appeals Board and, if necessary, to the Planning Appeals Council of the Saskatchewan Municipal Board. Appeals boards are appointed by councils in response to appeals and are generally made up of ratepayers and one or more councilors.

If ILOs are listed as a discretionary use, a refusal cannot be appealed, but development standards can be appealed to the Development Appeals Board and, if necessary, to the Planning Appeals Board.

If the RM has a bylaw regulating livestock operations under *The Rural Municipality Act, 1989*, there is no appeal mechanism; however, the developer could appeal the legality of the bylaw in court.

**Can the public appeal the decision of council? And to whom do they appeal?**

- If an individual is directly affected by the development decision, that person may appeal the council's decision to the local Development Appeals Board and, if necessary, to the Planning Appeals Council of the Saskatchewan Municipal Board on one of the following grounds:
  - the development officer has misapplied a zoning bylaw in issuing a development permit;
  - the development officer has refused to issue a development permit because it would contravene the zoning bylaw; or
  - the development officer has issued an order to enforce the bylaw in accordance with Section 220.1(4) of *The Planning and Development Act*. (The RM has the authority under the Act to issue a stop-work order on the construction of any illegal development or to order the developer to correct a development that is in contravention of the bylaw, even if the development permit is issued.)

**Can municipal ratepayers petition council to overturn a decision it has made regarding intensive livestock operation development?**

- Ratepayers in an RM can petition council to have a public meeting to discuss any proposed development, including an intensive livestock operation. Council should reasonably consider and address the concerns raised by ratepayers, but it is not constrained by any public vote or demand for a particular decision. Council is elected to make development decisions within the authority established by their development plan policies, zoning bylaws and *The Planning and Development Act, 1993*.

### **How can municipalities deal with ongoing operational issues with an ILO?**

- Municipal bylaws should consider and address operational issues that are common to livestock operations (e.g. manure application, road maintenance). Municipalities that are considering granting a development permit to a livestock operation should discuss these operational issues with the proponents to reach an agreement-in-principle prior to the start of construction. A Letter of Understanding between the proponent and the RM, accompanied by an amendment clause in the bylaw, will help to prevent future misunderstandings regarding the roles and responsibilities of each party. Of course, unforeseen issues inevitably come up, so it is crucial that the municipality maintains an ongoing relationship with the ILO operator.

### **What discussions need to occur between the ILO proponents and the RM regarding utilities?**

- Access to power, natural gas, electricity, telephone and water are essential to an ILO, and its needs may change over time. The ILO and RM should discuss the following questions:
  - Will the RM provide any assistance in obtaining easements from ratepayers for the construction of utilities?
  - Will the RM give permission for right-of-way easements for any and all utility services?

### **What is the RM's responsibility for road maintenance and setting weight restrictions?**

- Proponents and council should discuss any road restriction that might affect the construction or ongoing operation of the facility with the RM council. The proponents need to know which routes are open to them, and the reason for any road restrictions. Routes need to be established prior to the start of construction, and should be designated based on their ability to handle the traffic associated with construction as well as the ongoing transportation of livestock, dead animals, feed and manure.

Vehicle load weight restrictions should be set for a mutually agreeable period of time, and then be subject to re-negotiation. Transportation savings and costs are dependent on non-discriminatory weight limits—everyone is subject to the same weight restrictions. The RM has the ability to set special weight limits or running rights for specific routes to enable the proponent to run primary and secondary weights on grid roads.

Routes are designated by the Department of Highways and Transportation, or RMs depending on the road and how it is constructed. The Department of Highways and Transportation or Rural Municipalities designate routes and set vehicle load weight restrictions.

## **ENVIRONMENTAL PROTECTION**

### **Under what circumstances would a project trigger an *Environmental Assessment Act*-mandated environmental impact study?**

- There are six criteria that would trigger an environmental impact study under *The Environmental Assessment Act*:
  - Will the project have an impact on any unique, rare or endangered feature of the environment?
  - Will the project make substantial use of any provincial resource and, in so doing, pre-empt the use or potential use of that resource for any other purpose?
  - Will the project result in the emission of any pollutants or create by-products or residual or waste products which require handling and disposal in a manner that is not regulated by other legislation?
  - Will the project cause wide-spread public concern because of potential environmental changes?
  - Will the project involve new technology that is concerned with resource use and which may induce significant environmental change?
  - Will the project have a significant impact on the environment or necessitate a further development that is likely to have a significant impact on the environment?

### **What environmental factors are considered when reviewing an ILO application?**

- SAF evaluates the environmental suitability of an ILO based on soils, topography, hydrogeology, land available for manure spreading, crop nutrient requirements, and manure storage, handling and application systems. This formal review provides SAF with the information required to ensure that adequate provisions are in place to protect water resources. Large projects are also reviewed by the Environmental Assessment Branch of Saskatchewan Environment to see if they require an environmental impact assessment as defined by *The Environmental Assessment Act*. The Saskatchewan Watershed Authority is responsible for issuing water use approvals.

### **Does the public get a chance to comment on the project?**

- Yes, the public has the opportunity to comment on ILO projects. SAF encourages proponents to hold information sessions or open houses to explain their projects to the public. As well, larger projects are advertised locally and the public is encouraged to submit any comments to SAF as part of the application review process.

### **How are regulations enforced?**

- SAF staff inspect ILO sites, and re-inspections are scheduled approximately every five years, with particular emphasis on those ILOs with more than 1000 animal units. SAFRR staff also investigate written complaints. The requirement that complaints be made in writing ensures that the complaint is identified and that all the concerns of the complaint are investigated.

The top priority of the inspection process is to correct and mitigate the risk of pollution and to ensure ILOs are in compliance with legislation and with any



special conditions that have been imposed to protect water resources. Cancellation of approval, Minister's Orders and fines are the enforcement tools used against operators who fail to adequately mitigate problems.

**What sort of soil and groundwater testing is conducted at potential ILO sites?**

- A geotechnical investigation is required for potential ILO sites. The site geology and engineering properties of the subsurface soils are determined. This information is used to determine the suitability of the site for the intended purpose and the engineering requirements to mitigate potential risks of contamination from the intensive livestock operation. The depth of exploration will depend on the existing available information for the area, specifically well records and the known depth to an aquifer. The extent of the geotechnical investigation is determined by the engineer responsible for the site investigation, and will be dependent on the size of the project and the geologic conditions encountered at the site.

Groundwater testing varies, depending on the proximity of water resources to the project. Water chemistry is usually determined from water samples collected from monitoring wells installed during the soils investigation. If an existing well is on the project property, a water sample is usually collected from the well.

**Does anyone monitor the water quality at or near an ILO?**

- ILOs may be required to implement a water quality monitoring program as a special condition of the government's approval of the project. Monitoring is only required in situations where specific risks exist (such as a shallow aquifer). SAF staff monitor the operation of several ILOs in the province. Staff collect water samples from the ILO site and surrounding fields to confirm that the provincial standards are providing a sufficient degree of water protection. SAF and Saskatchewan Environment jointly conduct a Spring Runoff Water Quality Program on selected intermittent watercourses adjacent to fields fertilized with manure.

**What processes exist to deal with a manure spill?**

- A manure spill at a livestock operation site should be reported to SAFRR by the operator. SAFRR staff will inspect the site and recommend a course of action to the operator.

*The Environmental Spill Control Regulations* require that a liquid manure spill greater than 200 L that occurs on property not owned by the livestock facility must be reported within 24 hours. The spill should be reported as soon as possible to the Saskatchewan Environment spill reporting line (1-800-667-7525), so the spill can be investigated to ensure all the required remedial action is taken. Details such as location, date, time and an estimate of the quantity of the spill will be required. The Regulations require that the operator take immediate action to clean up the site. The spill should also be reported to SAF and the property owner where the spill has occurred.

### **How can odours from an ILO be controlled?**

- Manure storage units, barns or pens and manure spreading areas are all potential sources of odour. Odour is the compounded result of many different gases associated with decomposition and animal metabolic activities. There are a number of management practices that producers can adopt to minimize odour:
  - Keep facilities clean and well-ventilated.
  - Situate new facilities downwind from neighbours whenever possible.
  - Apply reasonable separation distances between livestock facilities and other activities to ensure complimentary land uses.
  - Inject manure directly into the soil or spread the manure and incorporate it into the soil within 48 hours of application.
  - Avoid spreading manure if neighbours are located downwind.

### **How much manure is produced by a typical ILO?**

- As a rule of thumb, a single sow in a farrow-to-finish operation will produce enough manure to fertilize approximately 2.3 acres annually. A cow/calf pair, feeder steer or heifer produces enough manure to fertilize one acre annually. Farrow-to-finish operations typically will hold between 600 to 5000 head; feedlots will hold between 300 and 30,000 head.

### **Is an ILO proponent required to prove to SAF that s/he has commitments from farmers to take all the manure from the proposed operation?**

- Yes. The manure management plan submitted by the project proponents must show that there is enough land available to apply all the manure from that particular operation at agronomic rates. If the proponent does not personally own sufficient land, s/he is required to obtain written agreements from local land owners committing to take a specified amount of manure.

### **Is an ILO proponent required to have the permission of all neighbours in order to proceed with the project?**

- No, an ILO proponent is not required to have the permission of all neighbours in order to proceed with a project.

### **What are the potential benefits of applying manure to the soil?**

- Solid and liquid manure are essentially dilute multi-nutrient fertilizers. Manure can provide a number of benefits when used as a fertilizer, including:
  - Increasing crop productivity, yield and protein content;
  - Increasing the ability of the soil to retain valuable nutrients;
  - Increasing water infiltration resulting in reduced runoff;
  - Improving soil structure;
  - Helping to protect soil from erosion;
  - Decreasing bulk soil density;
  - Improving soil tilth making the soil easier to work;
  - Moderating soil temperature by increasing the water content;
  - Supplying macronutrients and micronutrients required for crops;
  - Releasing nitrogen slowly during the growing season;

- Increasing microbial activity which can increase the availability of nutrients; and increases water-holding capacity of soils and water available to the growing crop and
- Increasing organic matter content.

### **How is manure application rate determined?**

- Application rate is based on the crop requirements, the current nutrient supply of the soil and the nutrient value and availability of the manure. In Saskatchewan land requirements (for ILOs) are based on the amount of nitrogen needed for crop production. Worksheets are available for producers to calculate manure application rates at [http://www.agr.gov.sk.ca/docs/livestock/pork/manure\\_management/Tri-Provincial\\_Calculating\\_Rates.pdf](http://www.agr.gov.sk.ca/docs/livestock/pork/manure_management/Tri-Provincial_Calculating_Rates.pdf)

### **Can manure application affect soil quality?**

- Manage manure with the same care as commercial fertilizers. Manure storage, handling and application should focus on minimizing nutrient losses. Livestock operations should develop a manure management plan that records manure and soil analysis and determines application rates based on the crop requirements. Application practices should account for the season, weather conditions and site specific conditions relating to soil, topography and water.

As no activity is risk free, producers need to understand the risks in order to properly manage them. Changes in physical properties of soil such as density, structure and water infiltration are indicators of soil quality and productivity. Adverse impacts of manure application are generally related to the excess application of nutrients which result in losses to the environment or changes to the soil quality. Soil testing will reflect soil quality conditions and allow for appropriate changes to manure application rates.

Animal manures can contain appreciable amounts of salts and excessive application of solid or liquid manures can result in salt accumulations that can damage crops or soil structure. Soils with poor drainage are the most susceptible to salt build-up (salinity) as the salts are not leached from the root zone. Over application of any fertilizer can cause nutrient buildup, crop damage, or increase the potential for nutrient movement. The risk of this occurring is negligible with proper management practices.

### **How large does an Earthen Manure Storage (EMS) need to be on an ILO?**

- The current SAF policy for Earthen Manure Storage on an ILO is 400 day storage capacity.

### **What is the risk of ground and surface water contamination by ILOs?**

- The use of manure as a fertilizer for crop production will reduce the opportunity for nutrient losses to the environment. When excess nutrients (regardless of their source) are allowed to enter water supplies, they can negatively impact water bodies, affecting the use and enjoyment of water for a variety of activities.

Manure should be prevented from entering surface and groundwater supplies. Developing an annual manure management plan, following soil conservation principles and reducing the opportunity for manure to enter water sources through runoff, erosion or leaching will protect surface and groundwater sources.

For the past six years, SAF has been monitoring the quality of spring runoff water at five different sites and has found no evidence of declining water quality as a result of manure application.

**What are the requirements for the storage/disposal of dead livestock?**

- There are a number of approved methods for disposing of dead animal: rendering, composting, burial or incineration. Each ILO must have a SAFRR-approved mortality management plan which estimates the annual number of dead animals and defines the method of disposal.

## CAPITAL

### **What are the sources of capital and equity to livestock producers?**

- In general, there are four sources of capital and equity available to livestock producers.
  1. **Traditional lenders** (banks, credit unions, Farm Credit Canada) provide loans to cover up to 50 to 60 per cent of the purchase price of land, buildings and equipment. They provide loans for up to 85 per cent of the purchase price of breeding stock with a federal government loan guarantee (i.e. the *Farm Improvement and Marketing Cooperatives Loans Act*); and loans of up to 60 to 70 per cent of the price of feeder animals.
  2. The **Livestock Loan Guarantee Program** of Saskatchewan Agriculture and Food guarantees 25 per cent of an accredited production association's outstanding loan for the purpose of purchasing feeder animals or breeding stock. Individual members of an association can access between \$25,000 and \$150,000 for feeder animals and between \$25,000 and \$75,000 for breeding stock. A similar program exists for sheep, and bison producers have access to a feeder loan guarantee program.
  3. There are several **venture capital funds** in the province which have invested in agriculture, primarily in the hog industry. Most venture capital funds are looking for a return of 20 per cent or better on their investments, and are targeting businesses with proven track records of performance and management that are expanding their operations. The venture capital funds that have been most active in the province are:
    - Crown Investments Corporation (provincial government fund).
    - Crown Capital Partners (private fund), which also administers the Saskatchewan Government Growth Fund, an immigrant-sponsored fund.
    - Prairie Ventures Fund (public and private fund), sponsored by the Crown Investments Corporation, Saskatchewan Credit Unions, Prairie Financial Management and private capital. It is administered by Prairie Financial Management.
    - Crown Ventures Fund (private fund), a labour-sponsored venture capital fund managed by Prairie Financial Management.
    - Golden Opportunities Fund (private fund), a labour-sponsored venture capital fund.
    - FCC Ventures, a division of Farm Credit Canada.
  4. **Licensed livestock dealers** play a major role in financing feeder animals in the province and, to a lesser extent, breeding stock. The larger licensed dealers have the financial capacity to purchase animals and finance them for the feeder industry. In most cases, the feedlot owners are required to make a 10 per cent down payment and pay the balance when the animals are sold. It is an effective way to obtain inventory financing for a feeder operation.

## **ECONOMICS**

### **What role can livestock play in the revitalization of the rural economy?**

- Increased livestock in rural communities can help revitalize the rural economy by providing new jobs and markets for feed grains. For every 100 – 125 sows there will be one full time job created in a farrow to finish operation. For every finished pig marketed it will take 11 – 12 bushels of feed wheat, barley and peas in the total production (including breeding) of the market hog.

### **How is the profitability of a Saskatchewan hog operation affected by the price of feed grain and export hogs, and by the competition from the United States and other countries?**

- Profitability of a Saskatchewan hog operation is significantly affected by the price of feed grains as feed wheat, barley and peas make up about 80 – 85 per cent of feed requirements by quantity and 60 – 70 per cent by value. Feed grains make up about 40 – 45 per cent of the variable costs and 30 – 35 per cent of the total costs of producing a market weight hog.

With about 2.5 million hogs marketed from Saskatchewan and a current slaughter capacity of about 1.3 million head in the province, export markets are important for Saskatchewan producers. With increased production over the last couple of years, more hogs are exported out of the province which increased the transportation costs.

Competition by the United States and other countries put downward pressure on pork prices from time to time (cycles) which affect the profitability of Saskatchewan hog producers.

### **How is the long-term financial outlook for the beef industry affected by the price of feed grain and the market price for beef?**

- There is not a simple answer to this question, as the long-term financial outlook for the beef industry is affected by numerous variables. However, the price of feed grains and the market price for beef have their greatest influence on the short-term decision making within the industry and not on the long-term financial outlook for beef production.

### **How do other countries' agricultural subsidies affect the profitability of Saskatchewan livestock operations?**

- According to the Organization for Economic Cooperation and Development (OECD), the European Union (EU) provides its beef producers subsidies which make up 77 cents out of every dollar in revenue. The EU also provides its pork producers subsidies which make up 24 cents of every dollar in revenue. This extremely high level of support means that the EU produces more beef and pork than can be consumed within the EU, with the surplus being dumped onto world markets. While it is true that Canadian beef producers would not be able to access the EU market due to its continued illegal ban on beef produced with hormones, that demand would still be met by producers in Australia, New Zealand and Argentina where hormones are generally not used. Thus the EU subsidies increase world supply and result in lower world prices. The US

provides very little direct subsidies to its beef and pork producers but instead heavily subsidizes the feed industry resulting in lower feed costs for US producers. Although in times of feed shortages prairie beef and pork producers have benefited from the US subsidies, by importing US subsidized corn. Australia, New Zealand and Argentina are also major competitors in the world beef market, but their producers are not heavily subsidized.

**What is the "life expectancy" of a typical intensive hog operation/beef feedlot?**

- A feedlots or hog facility's life expectancy is roughly 15-25 years. This does not mean it becomes defunct or environmentally unstable, but rather, that pens and infrastructure may have to be rebuilt or replaced in that time.

## **BUSINESS SUPPORT**

### **Is there any government financial assistance for developing or improving on-farm water supply?**

- The Canada-Saskatchewan Water Supply Expansion Program is a new water infrastructure program targeting the water supply needs of agricultural areas in Saskatchewan, and is aimed at assisting the agriculture and agri-food industries to develop, conserve and enhance sustainable water supplies.

Three categories of projects are eligible for assistance: on-farm water projects, multi-user water supplies, and strategic initiatives. The program provides technical and financial assistance to individual and incorporated groups of producers, agricultural and conservation groups, rural communities and municipalities, agri-businesses and rural enterprises, educational institutions and others, to help plan and develop agricultural water projects listed within each category.

The application deadline for proposals in Saskatchewan is Jun 30, 2004. Applications are available through all Agriculture and Agri-Food Canada – PFRA offices, and Saskatchewan Watershed Authority Regional offices.

For further information, call 1-800-667-8567 or visit the website at [www.agr.gc.ca/h2o/](http://www.agr.gc.ca/h2o/).

### **Who has information on pasture land that is available for rent?**

- The Lands Branch of Saskatchewan Agriculture and Food has information on pasture land that is available for rent.

### **Who has information on hay or greenfeed that is available for sale?**

- A Feed and Forage listing is available through the Crop Development Branch of Saskatchewan Agriculture and Food.



## HUMAN RESOURCES AND PERSONNEL ISSUES

### **What training and technical support is available to beef and pork producers?**

- There are a variety of institutions that provide training and support to beef and pork producers.

The University of Saskatchewan offers livestock-related diploma, degree and doctoral courses through the colleges of Agriculture and Biology, and the Western College of Veterinary Medicine. The College of Agriculture is nationally and internationally known for its standards of excellence in teaching and research. The university is also home to the Vaccine and Infectious Disease Organization (VIDO).

- The College of Agriculture's Department of Animal and Poultry Science is home to the Industry Beef Chair. Both the chairperson and the university coordinate several teaching, research and extension events, such as the Feedlot School and the Provincial Beef Symposium.

The Western Beef Development Centre offers field days, extension events and the Cow-Calf School which train both managers and labourers.

Saskatchewan Agriculture and Food provides technical and production support through its Agriculture Knowledge Centre. It also offers on-farm, apprenticeship-style training through the Green Certificate Program.

The Saskatchewan Institute of Applied Sciences and Technology, Wascana Campus (Regina), offers a 22 week course in beef management. The Kelsey Campus (Saskatoon) offers a two year Animal Health Technology course. Both campuses offer a two year course for pork production technicians.

The Prairie Swine Centre offers courses in production analysis, barn environment systems, managing human resources, managing piglet feeding, herd health, grow/finish feeding, being an effective manager, environmental management, conflict resolution, reproductive management, understanding swine behavior and budgeting.

Saskatchewan's regional colleges may also provide university- or institutional-level agricultural training courses on a contract basis.

### **Do occupational health and safety regulations apply to livestock operations? Are there different regulations for an ILO and a family-owned, non-intensive operation?**

- Yes, occupational health and safety regulations apply to livestock operations. No, there is no distinction made between types of farm operation. The legislation applies to all types of farm ownership and any size of operation. However, the requirements of the legislation vary depending on the number of employees. Farms that have 10 or more full-time employees are required to have a formal occupational health and safety program. Requirements for this are defined in Section 13 of *The Occupational Health and Safety Act*, as well as in Subsection 22(2) and Table 7 of the regulations.

### **Are livestock operations subject to labour standards legislation?**

- Agricultural workers are exempted from *The Labour Standards Act* if they work directly for the farm and perform work that is considered farm-type activity, such as working with livestock or harvesting crops. Agricultural workers who ARE covered by labour standards legislation are those who:
  - perform "non-farm" work such as bookkeeping or construction;
  - work in a processing operation such as an abattoir or berry processing plant;
  - perform service for other people, even if the service is considered "farm-type", such as corral cleaning or caring for livestock in a custom feedlot and
  - work in a commercial hog operation that has six or more full-time equivalent positions.

### **How many people are typically employed in a feedlot operation?**

- As a rule of thumb, feedlots employ one person for every 1,000 animal capacity, plus administrative staff. A 20,000 head capacity lot would employ approximately 20 people, plus additional administrative staff. However, this can vary substantially, based on the following factors:
  - Feedlots will greatly increase their normal staff during peak times of cattle movement i.e. during late fall when most calves are weaned and moved to feedlots.
  - In general, custom feeders will require more people because of the additional work involved with keeping track of the various owners' animals.
  - Feedlots that feed out calves rather than yearlings may require more labour to perform the additional treatments ration preparation and feeding management that comes with handling the younger animals.
  - Given sufficient experience in the business, some feedlot operators will be able to reduce the worker/cattle ratio to 1:2000.

### **How many people are typically employed in a hog operation?**

- As a rule of thumb, a farrow-to-finish (birth to market) operation employs one person for every 100 sows, although this ratio decreases slightly as livestock number increase. Typically, a 600-sow operation would employ six to eight people; a 1200-sow operation - 10 people; a 2400-sow operation - 20 people, and a 5000-sow operation - 40 people. These figures include barn, feedmill, maintenance and office staff. Additional staff may be employed or contracted to transport pigs, haul grain or custom-apply manure.

### **What sorts of jobs are available in an intensive hog or cattle operation? What are the average salaries and benefits (including pensions)?**

- Contrary to most people's perceptions, jobs in the livestock industry are highly skilled and challenging positions. The work requires staff to be active decision-makers in varied and changing circumstances. The work is also gender-neutral, with both men and women involved in all aspects of the operation. Women make up 50 per cent or more of the staff of most hog operations. Women are also heavily represented in the feedlot sector.

The following is a list of the typical jobs available in the feedlot sector:

**Pen-checker.** Monitors the health and well-being of the animals; identifies sick animals and pulls them from the pen for treatment and monitoring.

**Stock Person.** Sorts and handles incoming and outgoing animals; performs all the treatment protocols for incoming animals (i.e. tagging, vaccinating, treating, and sorting by owner).

**Feed Truck Driver.** Prepares delivers and monitors the feed; ensures just-in-time delivery of the right feed to the right pen.

**Bunk Reader.** In larger operations, ensures the animals are getting exactly the right amount of food to minimize waste and maximize growth. The feed truck driver performs these duties in smaller operations.

**Feed Mill Operator.** Oversees the operation and maintenance of the feed mill; ensures that the feed produced is appropriate for the size and type of cattle.

**Manager/Foreman.** Oversees all production in the lot and is responsible for personnel management, liaising with owners, monitoring the markets, etc.

**Procurement and Sales.** Employee is responsible for purchase and sale of cattle.

The following is a list of the typical jobs available in the hog sector:

**Breeding Technician.** Manages the breeding herd, including feeding, diagnosing and treating illness, moving animals, keeping records, managing the barn environment, cleaning, etc.

**Farrowing Technician.** Works with sows and their offspring from several days before birth to weaning; monitors and/or induces birth; processes piglets; monitors milking performance and piglet growth; fosters piglets between sows; providing supplemental milk.

**Nursery Technician.** Works with newly weaned piglets to ensure they "get on feed"; monitors their health; delivers treatment.

**Finisher Technician.** Work is similar to that of a nursery technician but involves sorting, weighing, identifying and shipping market animals.

**Barn Manager.** Oversees the operations of the barn, from production to maintenance to purchasing feed supplies; large barns will also have assistant managers.

In addition to production staff, all operations will employ office staff to process receipts and records and to handle personnel issues.

### **What are the average salaries of people working in the hog operations and feedlots?**

- Salaries vary across the beef and pork sectors, but starting salaries generally range from \$9 to \$13 per hour (in 2004). There is often opportunity for advancement within the operations.

Many feedlot and hog barn operators have traditionally provided additional benefits to their employees, such as housing or meat subsidies. Other operations are moving towards providing benefit packages that include disability insurance and dental and optical coverage. Production bonuses are often offered in addition to a base wage.

**What sort of support is available to pork and beef producers to help them train staff?**

- Businesses that have an accredited training course in place can qualify for benefits under the Job Start/Future Skills Program. The program will offset 50 per cent of the training costs, up to a maximum of \$5,000 per employee. The training must result in full-time employment for the trainee at the end of the training period. The Green Certificate Production Technician program offered by SAF, the Pork Production Technician program offered by SIAST and the Pig Production Training courses offered by DNL Farms Consulting all qualify for Job Start/Future Skills benefits.

**Can pork and beef producers bring in temporary foreign workers to work in their operations? What are the immigration rules pertaining to foreign agricultural workers?**

- Yes, as can all businesses and industries in Canada, after lengthy Immigration Canada background checks, this can take up to a year to complete.

Saskatchewan has also developed the Saskatchewan Immigrant Nominee Program (SINP) to complement and enhance the federal immigration process. This program identifies and designates key occupations which are experiencing labour shortages and helps to speed up the immigration process for individuals with those skills. The barn manager/assistant manager and technician positions in the hog industry are currently designated under SINP, and the feedlot industry is exploring having the feedlot manager position designated under SINP. In the long term, livestock operations will be able to skilled workers from within Canada, but in the short term, SINP helps to fill gaps in the labour market.

**What is the percentage of foreign workers currently employed in Saskatchewan's intensive livestock industries?**

- Foreign workers comprise less than five per cent of the workforce of the province's intensive livestock industry. While ILO operators look to locals first to fill positions, the declining rural population does lead to specific skill shortages, which can be addressed through the Saskatchewan Immigrant Nominee Program.

## **PRODUCTION**

### **Why are feedlot cattle kept in pens rather than on open pasture?**

- Feedlot animals are kept in pens to better facilitate the delivery of feed and to manage the quality of feed and water offered to the animals while minimizing labour required to care for them. Penning also makes it easier to move and handle the animals as well as to monitor their health more closely. Penning also allows more cattle to be raised on a given piece of land freeing up more land for the production of forage or grain for feed.

### **How has beef production changed in the last 10 years?**

- Not significantly. The biggest changes would be in scale of production and traceability. There are more, larger cow-calf operations and feeding operations than a decade ago. This has largely been driven by economics of size and a movement toward specialization rather than mixed farming operations. The increase in size has resulted in changes to production resulting in more uniform products. These changes include stricter health and quality protocols, national animal traceability, and more use of carcass quality information to improve the resulting beef products and increase consumer demand. While more science and technology is being applied in many areas of production, the basics of raising a calf from pasture to plate have changed very little in the last century.

### **How has pork production changed in the last 10 years?**

- Pork production has changed significantly over the last 10 years, as have world markets and world trade. A number of factors have contributed to these changes, including general expansion of the hog industry in Canada and Saskatchewan, narrowing margins for producers, and increasing efforts in export market development.

The pork industry has experienced considerable growth since the mid 1990's, with Canadian production rising from 17.5 million in 1995 to an estimated \$31.7 million in 2004. Saskatchewan production has exceeded this growth rate, with marketing's of about one million head in the early 90's to 2.5 million head in 2004. To facilitate this expansion, we have had significant growth in the number of larger production units in Saskatchewan.

In the past decade, the pork industry has experienced a number of price cycle fluctuations which typically occur every three to four years. Canada has seen a steady increase in the number of larger production units. These larger units tend to maintain production levels in spite of fluctuations in the marketplace.

Packer/processors have been moving to consolidate from several smaller facilities in each province to two major packing companies in Canada, and only a handful of smaller federal plants, capable of exporting product. This consolidation means producers are faced with transporting livestock further distances to processing plants and the reduced competition in the packing industry also contributes to

lower profit margins for producers. Potential lower profit margins mean that primary producers must operate at peak efficiency in order to sustain production.

#### **Why are most pigs raised indoors now?**

- Pigs are raised in specialized buildings to provide them with a controlled environment for their comfort and to allow them to grow to their potential without environmental limitations. The indoor environment is temperature and humidity controlled. It protects the pigs from diseases and predators, for their safety and to enhance human food safety.

#### **Is a special permit required to raise game farm animals and other exotic species?**

- *The Domestic Game Farm Animal Regulations* require that permits be obtained for the following species:
  - antelope
  - caribou and reindeer
  - elk
  - moose
  - mule, fallow, musk and white-tailed deer
  - bighorn, thimhorn and mouflon sheep
  - mountain goats

Permits are not required for raising bison, wild boar, ostriches, emus or rheas.

#### **Who is responsible if game farm animals escape into the wild?**

- Under *The Domestic Game Farm Animal Regulations*, the game farm operator is responsible for any escaped animals. If a permitted animal escapes, the operator must immediately report it to a provincial game farm inspector and then make every reasonable effort to recapture the animal. If unsuccessful, the operator should again report to the inspector, who may, depending on the circumstance, assist the operator in tracking down the animal. Failure to recapture the animal can, depending on the circumstance, result in penalties ranging from a formal warning to a fine. Escaped non-permitted animals (i.e. bison, boar, ostriches, etc.) are handled in the same way as escaped cattle. If the escaped animal is an elk, the herd's Chronic Wasting Disease herd health status may be altered upon its recapture to reflect the animal's potential exposure to the disease while in the wild.

#### **Will ILOs pay a premium price for locally grown feed?**

- The short answer is “No”. ILOs, like any other business, will seek to minimize the cost of inputs while maximizing the value of outputs. For example, if local feed barley is offered for \$3.00/bu delivered and it can be obtained elsewhere for \$3.25/bu delivered, the wise business operator will go to the lower priced product. In terms of forage, feeders will pay what is necessary to meet their needs within a reasonable distance from the operation. Standard pricing for feed such as silage is always based on open market prices though, not local.

#### **What is the maximum distance beyond which it will not be economically viable to transport feed to an ILO or feedlot?**

- It depends on the feed and the ability of an operation to finance it. Feed grain can be transported huge distance with little increased cost. Dry forage is similar. The

most costly product to transport would be silage, which is generally limited to 10 miles or less. Producers have the option to utilize dry feed if production of silage proves prohibitively expensive.

### **What are the regulations regarding the use of genetically modified (GMO) feed in livestock rations?**

- In order to grow genetically modified varieties in Canada, food, feed and environmental safety clearance is required. Food safety clearance is regulated by Health Canada's safety regulations, while feed and environmental safety clearance is regulated by the Canadian Food Inspection Agency (CFIA). Once full clearance of food, feed and environmental safety regulations is granted, there are no regulations regarding the use of genetically modified feed. The only genetically modified crops produced in Canada are Canola, Soybean, and Corn. No small feed grains are genetically modified. Generally, organic producers do not allow the use of GMO feed stocks, although certification standards are forthcoming.

### **Who is in charge of organic certification?**

- Organic organizations in Saskatchewan that serve as certifying agencies include: the COCC (Canadian Organic Certification Cooperative), Pro-Cert Organic Systems, SOCA - Saskatchewan Organic Certification Association, and the OCIA (The Organic Crop Improvement Association). The OCIA is an international program of certification to strict organic standards. The OCIA has thousands of certified members in 17 countries.

### **Are modern hog production methods more sensitive to animal care than the old methods?**

- In most ways, and by most measurements, modern hog production methods are more sensitive to animal care than historical approaches to raising hogs. Producers value their animals as living beings, as a means to make a living, and as a food source for people.

Modern agriculture provides animals with the best feed and environment that is available. The diet fed to hogs is nutritionally balanced for energy, protein, minerals and vitamins. The indoor environment allow for controls for temperature, humidity and drafts. These facilities provide protection for the hogs, not only from the weather, but also from disease and predators. The individual housing arrangements allow for individual care, feeding, watering and monitoring. It also provides protection to hogs from aggression by other hogs and, in the case of baby piglets, protection from crushing by their mother, the sow.

## **DISEASES**

### **What is Foot and Mouth Disease?**

- Foot-and-Mouth Disease (FMD)—also called Hoof-and-Mouth Disease—is an acute, highly contagious viral infection of swine, cattle, sheep, goats, bison, deer and other cloven-hoofed ruminants. The disease causes fever and blister-like sores on the mouth, tongue, lips, teats and between the hooves. The disease causes severe production losses in domestic livestock. Foot-and-mouth disease does not cause illness in humans. In Canada, FMD is a federally reportable disease. This disease is of major importance in the international trade of animals and therefore is an Office International des Epizooties (OIE) list A disease. Any country with an outbreak of FMD is not permitted to export livestock or meat to another country. Canada's last outbreak of FMD occurred in 1952.

### **What is Chronic Wasting Disease?**

- Chronic Wasting Disease (CWD) is a transmissible spongiform encephalopathy (TSE) of the deer family. The natural host for CWD is the deer family, which includes mule deer, white-tailed deer and elk. Currently, cattle and sheep have not been found to be susceptible to CWD. The cause of CWD is thought to be abnormal prion (proteinaceous infectious particles) proteins. The abnormal prion protein accumulates in the brain, eventually causing damage to the brain. CWD is a chronic disease that leads to progressive weight loss and abnormal behavior. The disease causes excess salivation, unusual behavior, paralysis, difficulty swallowing, head pressing, inability to stand, pneumonia and weight loss. This disease was first recognized as a syndrome in captive deer in 1967 in wildlife research facilities in Colorado and later in captive deer held at research facilities in Wyoming.

### **What is Malignant Catarrhal Fever?**

- Malignant Catarrhal Fever (MCF) is a fatal infectious disease of cattle, bison, deer and other ruminants. MCF is caused by a herpes virus. The natural host of MCF is sheep. The virus does not cause disease in sheep, but when it is transmitted to a susceptible species such as bison, cattle and other ruminants, can cause disease. Clinical signs of MCF are depression, separation from the herd, not eating, incoordination and fever. There may be excessive salivation and nasal discharge due to erosions on the tongue. Ocular discharge, conjunctivitis and corneal opacity are often observed. Bison may be found dead.

### **What is Johnne's Disease?**

- Johnne's (pronounced "yo-knees") disease is a contagious and chronic bacterial infection, primarily of the small intestine of ruminants. Johnne's is most commonly seen in cattle; however, other ruminant species, such as sheep, goats, elk, deer, llamas and bison, can be affected. The bacterium responsible for Johnne's disease is *Mycobacterium avium paratuberculosis*, also called paratuberculosis. The bacterium invades the small intestine and slowly multiplies over the course of several months or years. It is eventually excreted in the manure of infected animal, and can contaminate the ground, water and other parts of the environment. The growth of this bacterium is slow and the animals can look



normal for several years. When clinical signs are eventually seen, they consist usually of intermittent diarrhea and weight loss.

### **What is a "reportable disease" and how does it differ from a non-reportable disease?**

- Reportable diseases are usually of significant importance to human or animal health or to the Canadian economy. These diseases are outlined in the federal *Health of Animals Act* and *Regulations*. Animal owners, veterinarians and laboratories are required to immediately report the presence of an animal that has, or is suspected of having, one of these diseases to a Canadian Food Inspection Agency (CFIA) district veterinarian. Some of the reportable diseases that occur or may occur in Canada are: rabies, anthrax, anaplasmosis, bovine tuberculosis, bovine spongiform encephalopathy (BSE), Chronic Wasting Disease (CWD) and Scrapie.

### **What is a zoonotic disease?**

- A disease that spreads from animals to humans is called a **zoonosis** (plural **zoonoses**). Some potential zoonoses in Saskatchewan are rabies, anthrax, tuberculosis, salmonellosis, giardia and listeriosis.

### **What is a pathogen?**

- A pathogen is a disease-producing agent or microorganism. Anthrax is an example of a pathogen. Anthrax is a bacterium that causes disease in cattle, sheep and goats.

### **What is a bacterium? What is *E. coli*?**

- Bacteria are microscopic usually single-celled organisms that have specific environmental requirements for life. An example of a bacterium is *Escherichia coli* or *E. coli*. The digestive systems of all animals, including humans, are home to billions of essential bacteria. *E. coli* is one family of naturally occurring bacteria in our digestive tracts. Most strains of *E. coli* do not cause illness in healthy humans and are beneficial to the synthesis of vitamins. Some strains of *E. coli*, such as 0157:H7, however, cause diarrhea in humans.

### **How can pathogens be kept out of the water supply?**

- Manure from livestock, wildlife, birds, pets and humans contain a variety of bacteria, viruses, protozoa and parasites. Only some of these microorganisms are pathogenic (disease-causing). The majority of microorganisms found in manure, from any source, are beneficial or cause no harm to their hosts. Only some microorganisms are pathogenic.

Pathogens can find their way into surface or groundwater in a variety of ways. To prevent pathogens from getting into surface water, actions that can be taken include:

- Establishing grassed or vegetative buffer strips along water courses;
- Maintaining recommended separation distances from surface water sources when applying manure or human waste;

- Avoiding applying manure or human waste on frozen or snow-covered ground;
- Avoiding applying manure or human waste to soils that are prone to water erosion and runoff;
- Avoiding discharging septic systems or pump-outs near a watercourse or water body;
- Injecting or incorporating manure whenever practical and
- Minimizing direct access to water sources by livestock.

To prevent pathogens from getting into groundwater, actions that can be taken include:

- Proper construction and maintenance of operational wells;
- Proper protection of operational wells from surface infiltration, livestock and wildlife;
- Locating wells away from main surface runoff channels, flood areas, septic systems and manure stockpiles;
- Proper decommissioning of unused and abandoned wells;
- Proper location, design and operation of septic systems; and
- Maintaining adequate separation distances from wells when applying manure or human waste.

Drinking untreated water is never a recommended practice. Water used for drinking should always be tested and treated if necessary.

## **FOOD SAFETY**

### **What is "on-farm food safety"?**

- For the last five or six years, national and provincial commodity groups have been developing "on-farm food safety programs," which look at each aspect of the production chain and identify areas that may pose a food safety risk. Steps that can be implemented at an operational level to minimize or eliminate the risk are identified. Nearly 20 commodity groups from across Canada (including the beef, pork, egg and bison sectors) are in various stages of developing and implementing these voluntary programs in conjunction with the Canadian Federation of Agriculture, the Canadian Food Inspection Agency and provincial governments. When complete, the programs include a verification and an audit component. The two oldest food safety programs are the Quality Starts Here Program and the Canadian Quality Assurance Program.

### **What is the Quality Starts Here Program?**

- The Quality Starts Here (QSH) Program is the Canadian beef industry's on-farm food safety program. It was established in 1994 with the intent of promoting good production practices on the farm that would improve food safety and beef quality and provide customers with the assurance that they are purchasing wholesome food. The program has evolved over time and now includes a HACCP-based approach.

The development of an on-farm auditing system is now under way. The Canadian Cattlemen's Association is responsible for program development and materials, and for ensuring that a credible approach is maintained across Canada. Provincial delivery is the responsibility of the provincial cattle associations. In Saskatchewan, the Saskatchewan Stock Growers Association and the Saskatchewan Cattle Feeders Association co-chair the Saskatchewan QSH Working Group which delivers the program.

### **Will processors accept hogs from farms that do not have quality assurance certificates?**

- Some pork processors are still accepting animals that are not CQA® certified. Most small abattoirs are accepting all pork, whereas Maple Leaf Foods is not accepting pigs from farms that are not certified. Currently, Mitchell's Gourmet Foods is accepting pork that is not certified, but is discounting each pig by 5 cents per kg or approximately \$5.00 per animal. Effective October 1, 2004, all deliveries to Mitchell's Gourmet Foods through SPI Marketing Group Inc. will require CQA® certification.

### **What is the Canadian Quality Assurance Program?**

- The Canadian Quality Assurance (CQA) Program is the Canadian pork industry's quality assurance program. Developed in the 1990s, it was spearheaded by the Canadian Pork Council, which saw that a program of this type would be critical in the future to maintain consumer confidence in pork, and to develop and maintain access to the international market. Producers and technical experts from the provincial and federal governments collaborated in the development of CQA.

The pork council produces all the materials and communications around the program, while the provincial pork industry associations are responsible for delivering the services. Third-party verification of on-farm practices is performed by veterinarians or similar professionals. An audit component is being developed. The CQA Program is based on HACCP principles that can be put in place on any type of agricultural operation.

### **What is HACCP?**

- HACCP (Hazard Analysis Critical Control Points) uses a systematic approach to food safety based on science that focuses on prevention rather than relying on end-product inspection or testing. Designed originally to ensure safe food in lunar space missions, it identifies specific hazards and measures for their control. On-farm programs are based on HACCP principles, which are commonly accepted around the world:
  - Understanding problem areas or hazards;
  - Describing the practices that will minimize or reduce these hazards and
  - Demonstrating, through record-keeping, eventually 3<sup>rd</sup> party audits, that practices are commonly acceptable and the potential hazard is under control.
  
- On Farm Food Safety Programs (OFFS) are HACCP-based, as HACCP cannot be directly implemented on the farm (it was designed for processing plants). OFFS programs are:
  - based on the principles on HACCP, but one in which the hazard analysis conducted is generic and conducted by industry experts on behalf of their commodity.
  - results in a range of commonly accepted hazards and related controls which are then translated into a series of good production practices to which primary producers adapt on their farm.
  - includes critical areas which producers must consider in their operations and some record keeping to verify control (i.e. chemical usage).