

Organic Lamb

Webster's Dictionary defines organic food as food produced with the use of feed or fertilizer of plant or animal origin, without chemically formulated fertilizers, growth stimulants, antibiotics, pesticides or genetically modified organisms.

Livestock production is an integral part of the whole organic farm ecosystem, providing weed control, recycling nutrients and making use of marginal land not suitable for cropping.



B. Tollman

Figure 1. Breeding stock and fattening lambs are maintained on a combination of annual and perennial pastures, supplemented with minimal amounts of grain.

A limiting factor in organic meat production in Alberta is a shortage of certified organic meat processors. The first step for producers researching organic lamb production should be locating a certified abattoir in their area.

Philosophy of organic farming

Organic lamb production is a forage-based system that revolves around pasture management and parasite control.

Sheep farms marketing organic lamb must meet the organic production standards. This includes feeding the

sheep flock certified organic feedstuff, practicing pasture management in accordance with organic requirements, ensuring no exposure to substances prohibited by organic standards and slaughtering in a certified organic abattoir. Most aspects of organic sheep production are controlled for quality assurance reasons. That means:

- Rations, including those for finishing lambs, must be at least 30 per cent forage at all times.
- Sheep must have access to pasture during the grazing season.
- Salt and mineral must be certified organic.
- Straw used for bedding must be certified organic.
- Preservative treated wood is prohibited for use in new fencing or structures in contact with the sheep.
- Organically certified animals, feed, bedding and meat products must not contact non-organic materials or animals during transportation. Vehicles or trailers that also transport non-organic produce must be thoroughly cleaned between loads. A trucker hired by an organic farm to haul feed or produce must sign a declaration that his truck and auger have been cleaned to organic specifications.

Organic certification

Organic certification is a system of regulations designed to ensure that producers comply with Canadian and international standards of organic production and processing. Certification assures consumers that organic producers follow strict quality standards.

Organic standards in Canada are voluntary, but may become mandatory in the future. Canadian standards are being prepared to comply with American and European Union standards to facilitate exports.

Private sector companies certify all producers and processors in Canada. Some certifying agencies charge a levy – a percentage of gross sales in exchange for use of

their stamp or logo. Other agencies have fee schedules based on yearly farm income plus an application fee and yearly inspection costs. Expect to pay up to \$1,000 per year for certification. Annual re-certification involves a farm inspection and an audit of production and sales records. Alberta Agriculture and Rural Development's website lists several certifying organizations in Alberta.



Figure 2. All meat sold as organic must be processed in a certified organic abattoir. There are only a few in Alberta.

Record keeping

Organic production needs excellent record keeping. Some certifying agencies supply standard forms, but producers may design their own, provided that all necessary information is captured and easily auditable.

Organic producers are required to supply the following:

- a three-year field history for every acre of land in organic production
- a description of crop and pasture rotations
- individual animal identification linked to production and medical records
- acreage maps
- sources of off-farm inputs like feed, supplements and milk replacer
- composting methods
- methods of pest, weed and disease management
- the types of storage systems used
- the types of equipment used

Prohibited substances

The National Organic Program publishes a list of allowed and prohibited substances associated with organic farming. Producers must familiarize themselves with the list and not make assumptions about any farm inputs or processes.

Potential sources of contamination, like pesticide drift from neighbouring farms, must be identified and recorded. Farming practices that reduce that risk must be recorded. Buffer zones are required between organic fields and areas that may contaminate the crop with prohibited substances, such as conventionally farmed fields or highways. Producers applying for organic status must notify adjoining farms of their intentions. Organic farmers depend on the goodwill and co-operation of their neighbours to help prevent contamination and preserve their organic certification.



Figure 3. Each animal must have individual identification to track its production and medical records.

A meat animal given antibiotics loses its organic status. However, a distressed animal must be treated because the animal's welfare is more important than keeping its organic status.

Farms can produce both organic and non-organic crops at the same time, if they are of different types. For example, a producer may raise organic crops and non-organic livestock. However, a farmer cannot have both organic and non-organic sheep, unless the non-organic flock is in the transition process.

Applying for organic certification

The process of organic certification for crop and hay land may take three years from the application date. There must be at least three full years between the last use of a prohibited substance and organic certification, with a clear, auditable paper trail. Examples of supporting documents that must be available are soil and water tests, or receipts for the purchase of organic feed and breeding stock. If an organically produced variety was unavailable, then you must have records of your attempts to source an organic supplier. All the labels from purchased supplies should be kept for the audit process.

Each organic certifying agency has a specific process for producers to follow. Lamb producers should contact their chosen certifying organization before they make any management decisions.



Figure 4. Don't make assumptions. Not all natural products are allowed and not all synthetic substances are banned.

Converting a flock to organic

A non-organic ewe flock can produce lambs with organic status if the transition is made before the third trimester of pregnancy. To meet requirements, the ewe flock must:

- have unique individual animal identification
- switch to certified organic feed, bedding and supplements

- not be exposed to any prohibited substances (e.g. dewormers or antibiotics)
- have pasture or forage with a three-year history of continuous organic management

Production costs

Converting to organic production often requires switching from one kind of production (sheep) to mixed farming, in order to produce the feeds required for their flock. This may reduce the producer's risk by providing more than one product to sell (sheep and organic feed). It also reduces whatever economies of scale the producer may have enjoyed. Unless all feeds can be purchased, the same land base will not support the same number of sheep when crop production and intensive pasture management are added to the operation.



Figure 5. Lambs born to non-organic ewes can be marketed as organic, but the ewes cannot. Ewe lambs retained for breeding from the first organic lamb crop will be organic for their lifetime, so long as they are maintained to organic standards.

Input costs for organic lamb production are higher because of limited supplies of certified organic feed and supplements. Organic barley may cost twice as much as non-organic (up to \$5.50 per bushel in fall 2004). This adds significantly to the cost of finishing lambs. At a conversion rate of 7:1 (seven pounds of feed for one pound of weight gain), 80 cents per pound of gain can be prohibitively expensive. Grass-fed organic lamb may be an option for producers who lamb early in the year and can finish their lambs on pasture.



S. Hasford

Figure 6. Organic lamb must have a premium price to compensate for increased production costs.

Markets for organic lamb

There is growing consumer interest in organic products. Alberta producers can expand into this small niche markets once they are certified. Only meat from *certified* organic livestock can be labelled and sold as organic. Higher prices for organic lamb may seem attractive to producers, but regular lamb already sells for more than beef, pork and chicken. Organic lamb may not command enough of a premium to cover costs and still be competitive with other meats.

There are several other factors to consider before lamb producers change their farming practices. The first is the very small size of the organic meat market. Only one to two per cent of the total food market in Canada is organic, and only one per cent of organic products sold are meat. The roots of the organic movement are vegetarian and this aspect should not be overlooked. Success depends on finding enough customers willing to pay for organic lamb in your market area.

Uncertainty of pricing must also be considered. Lower efficiency on organic farms, because of reduced stocking rates and slower-growing lambs, means that organic products must be priced higher than traditionally grown products. Most lamb raised in Alberta qualifies as natural. That means no hormones or antibiotics are used and the animals are fed a vegetarian diet of grass and grain. With very little to differentiate organic lamb from non-organic, producers may not be able to charge a premium.

Cash flow from lamb sales may trickle in over a six to 10 month feeding period, while input costs and mortgage payments often arrive in a torrent. Professional financial advice is highly recommended before starting any new agricultural venture.



C. Bellman

Figure 7. Lambs raised on roughage diets finish more slowly and with greater variability than conventionally fed lambs. Some breed types finish on grass better than others.

Pricing organic lamb

A study in France looked at the effect of either increasing the land base or decreasing animal numbers to accommodate the reduced stocking rates required by organic agriculture. It calculated the price premiums required for organic lamb to offset these increased costs. The study showed:

- organic lambs produced in an extensive system required a one to 14 per cent price premium over non-organic lambs
- a traditional lambing system required an eight to 18 per cent price premium
- an accelerated system required a 25 to 46 per cent price premium

The study also found that accelerated lambing systems were not suited to organic production. The productivity levels of the sheep in such systems require more grain than the amounts recommended for organic livestock.

Marketing questions

Since there is no track record for pricing of organic lamb, producers must individually pioneer this market. There is no guarantee that producers will be paid enough of a premium to cover the additional costs of organic production. Thorough market research is essential before producers consider switching to organic lamb production.

These are basic questions that must be answered:

- Who will buy my product?
- Will enough customers buy my product to be profitable?

- Will my existing customers pay more for organic lamb?
- Where would I find new customers?
- What do my customers want to buy? One freezer lamb per year? Just certain cuts of meat – roasts, chops? How much, how often?
- Do my customers want the unique look and taste of grass-fed lamb?
- Can I charge a premium to cover the extra cost of organic production?
- Who is my competition? Other lamb producers? Other organic meat like chicken and beef? All other meat?
- Is there a certified organic meat processor available for me to use?
- What will it cost to process my meat?

Feeding the organic flock

Farmers who can't grow their own organic feed may have difficulty buying it. They are often faced with inconsistent supply and/or high costs when buying organic feeds. Producers should always consult their certifying agency before including any new feed, supplement or additive to a ration.

Genetically modified organisms are not considered compatible with the principles of organic production and are prohibited from use. Supplements using commercial plant proteins cannot be used unless the canola, corn or soybeans are grown using non-genetically modified plants. All feeds must be certified organic, unless allowance is made by the certifier due to unusual circumstances such as drought or weather.

Milk replacers made from organic ingredients are hard to find. Whole milk is preferred for rearing orphan lambs.

Water used for livestock must be tested for contaminants. Nitrate levels in water must be below 10 mg/l.



Figure 8. The smell and taste of grass-fed lamb can be different than grain-fed lamb. This may not be acceptable to all customers. Producers must always defer to their customers before making decisions that affect the quality of their product.

Health care

On an organic farm, livestock management focuses on preventing health problems. Organic livestock producers are encouraged to:

- provide a balanced diet
- ensure young animals receive colostrum for passive immunity to diseases
- maintain a closed flock, or limit the number of brought-in animals
- promote health by reducing stress

Vaccinations are allowed for diseases that cannot be controlled by other management techniques. Treatments must be recorded and an increased withdrawal time, usually twice that recommended by the manufacturer, is required. Routine use of drugs in feed or water is not allowed.



Figure 9. Organic standards generally allow conventional medicines to be used to treat illness and disease, under advice from a veterinarian.

Breeds and breeding

Traits that are important for an organic environment include:

- mothering ability
- hardiness
- resistance to disease and parasites
- ability to forage



S. Hasford

Figure 10. One of the most important traits that organic producers select is the ability to survive and thrive without inputs.

It is recommended that all livestock on an organic farm be born and raised in an organic system. However, up to 10 per cent of breeding animals can be brought in from non-organic sources each year. These animals cannot be resold as organic breeding stock if they are held for less than one year, and they can never be slaughtered for organic meat. Individual animal identification and accurate record keeping are crucial to tracking non-organic animals in an organic system.

Generally, artificial insemination is allowed to reduce the risk of disease from livestock brought in from outside the farm. Estrus synchronization and embryo transfer are prohibited. Since reliable heat detection isn't possible with sheep, artificial insemination without synchronizing the ewes results in lower lambing percentages.



Makoski

Figure 11. Organic sheep producers may judge the productivity of an animal using different criteria than conventional shepherds.

Internal parasites

The most difficult aspect of raising organic lamb is controlling internal parasites. Sheep are particularly susceptible because they swallow parasites as they graze close to the ground. Regular use of chemical dewormers is not allowed in organic systems.

Organic certification agencies vary in their approach to the use of deworming products. Prevention strategies are encouraged as an alternative to reliance on dewormers. Certification requirements associated with the use of ivermectin and other dewormers may vary. Consult with your certification body before using any dewormer or medications.

Alternative strategies for internal parasite control

Provide good nutrition and minimize stress. Research has shown that sheep provided with high-protein rations are more resistant to parasites. Combine high-protein plants and those high in tannins, such as birdsfoot trefoil, a non-bloating legume. Tannins may have some impact on stomach worms, but they have little effect on intestinal worms.

Use the deworming products that are allowed strategically. Use them one month prior to lambing, after lambing before going onto clean pasture, and/or before moving ewes to new pasture.

Use fecal samples before and after deworming with any product to measure its effectiveness.

Parasite levels are four times greater when animal density is doubled. To prevent infection, allow sheep to graze plants to within 10 cm of ground, then rotate pastures to avoid over-grazing.



Alberta Agriculture and Rural Development

Figure 12. Pasture management is critical. Do not overgraze. Eighty per cent of worms live in the lowest 5 cm of pasture.

Use cultivated annual pastures for rearing lambs.

Graze cattle on pastures after the sheep. Allow them to graze plants to 5 cm, exposing parasites to the sun.

Time lambing to avoid exposing lambs to warm, wet weather that promotes high levels of infectious larvae.

Move lambs to clean pasture at five to six weeks of age, when they begin to eat significant amounts of forage. Use forward creep grazing so lambs have clean pastures before their dams. Avoid grazing young lambs on contaminated pasture. Also, avoid grazing lambs on the same perennial pasture two years in a row.

Make sure pastures are well drained as eggs and larvae develop faster and move further in wet pastures. Graze when dew or rain has dried off forage. Also, monitor growing conditions that contribute to parasite development. Be prepared to move lambs and deworm if necessary.

Breed for resistance. There is enough variation among individual sheep to select for this trait in an organic flock. Studies in New Zealand show that the use of worm-resistant rams on non-resistant ewes increased growth rates in lambs. Select ewes that stay in good body condition due to lower worm loads. Cull ewes that are persistently thin and/or infected with parasites.

Much of the information in this factsheet is reprinted with permission from the *Organic Livestock Handbook*, a manual from the Canadian Organic Growers. Copies of the manual are available for \$25 (members) or \$30 (non-members) by contacting the Canadian Organic Growers at 1-888-375-7383, writing to 323 Chapel St., Ottawa, Ontario N K1N 7Z2.

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Lund, V and B. Algers. 2003. *Research on animal health and welfare in organic farming – a literature review*. Livestock Production Science, 80: 55-68.

Boelling, D. AF Groen, P Sorensen, P Madsen and J Jensen. 2003. *Genetic improvement of livestock for organic farming systems*. Livestock Production Science, 80: 79-88.

Websites:

Organic Growers Directory (Alberta):
<http://www.agric.gov.ab.ca/food/organic/directory/>

Canadian Organic Growers:
<http://www.cog.ca/>

Organic Agriculture Centre of Canada:
<http://www.organiccentre.ca/>

ACORN (Atlantic Canadian Organic Regional Network):
<http://www.acornorganic.org/>

Canadian Organic Standard:
<http://www.certifiedorganic.bc.ca/COI/COI.htm>

For more information:

The following publications are available from Ropin' the Web at www.agriculture.alberta.ca/publications by clicking on Farm Direct Marketing, or by calling either the Ag-Info Centre at 310-FARM (3276) or the Publications Order Office at 780-427-0391. Hard copies will also be available from the Alberta Sheep and Wool Commission. To contact the commission, call: (403) 948-8533.

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Direct Marketing Meats...Selling Lambs at Alberta Approved Farmers' Market (Agdex 430/845-2)

Direct Marketing Meats...Selling Freezer Chicken (Agdex 450/845-1)

Direct Marketing Meats...Selling Freezer Pork (Agdex 440/845-1)

Direct Marketing Meats...Selling Freezer Lamb (Agdex 430/845-1)

Direct Marketing Meats...Selling Freezer Beef (Agdex 420/845-1)

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