
The Commodities

The following section gives interesting facts about each of the major commodities or groups of commodities produced in British Columbia. This is only a partial list of all the commodities grown in BC. It was grouped in this way simply for space considerations. For more details on each, contact the agencies noted.

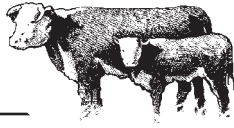


Animal

Meat

Dairy

Poultry



Beef Cattle Ranching

Interesting Facts

Beef animals are ruminants and like all ruminants they have four compartments to their “stomach”. When ruminants swallow grass or other vegetation the feed goes into the first section of the “stomach” called the rumen. Here it is broken down by billions of micro-organisms.

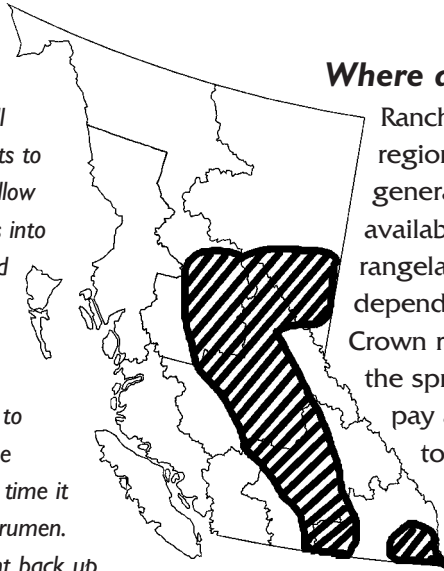
It is this feature that allows ruminants to digest tough cellulose and convert it to usable food. When the rumen is full the animal will lie down to rest. During this time it will burp up portions of food from the rumen. These portions called “cud” are brought back up into the mouth, chewed into a pulp and swallowed again. The chewed food goes on through the other three “stomachs” where it is digested. Other ruminant animals are dairy cattle, sheep, goats and bison.

What is cattle ranching?

Cattle ranching is the raising of cattle for beef. A cattle herd is made up of calves (singular-calf, newborn male or female); heifers (female adult animals that have not yet calved); cows (female animals that have had a calf); and bulls (adult males); steers (castrated male animals).

These groups of cattle are separated during certain months. The cow herd is usually kept at the ranch headquarters during the winter months. The rancher feeds the herd stored feed that has been produced the previous summer. On most ranches in BC, the cows have their calves in the early part of the year. Once the grass begins to grow in the spring the cows and their calves are turned out on to pastures to graze. In many parts of British Columbia the cows and calves are moved onto forested rangelands for the summer months.

Where are the ranches in BC?



Ranching takes place primarily in the Interior region of British Columbia. Cattle ranching generally is in areas where rangeland is available. Cattle harvest the grass of the rangeland. In BC, cattle producers are dependent on roughly 8.5 million hectares of Crown rangeland where cattle graze during the spring, summer and fall. The ranchers pay a fee to the government for the cattle to graze on Crown land. The rangelands complement the ranchers’ deeded land of approximately 1.5 million hectares.

An individual rancher’s deeded land would include the ranch home and buildings, calving areas and hay and crop producing lands.

How many beef cattle do we produce?

In BC, there are approximately 320,000 beef cows. Adding the annual calf crop, yearlings, and bulls there are approximately 500,000 head of beef cattle in the province at any time.

How are beef cattle produced?

It takes from 18 to 30 months for a beef animal to reach market weight. Often different producers are involved in the different stages of raising cattle: the cow-calf operator initially raises the calves; the backgrounder raises weaned calves on mainly forage diets; and the feedlot operator feeds calves a high energy grain diet until they reach market weights. There are many different combinations of these stages and not all animals follow the same path to reach market weights.

Cow-calf operations are the most common beef operations in BC. Cow-calf operators maintain cow herds and raise their calves from birth to weaning.

Each year a cow is expected to produce one calf. The cows are bred usually in late spring or early summer. A cow is pregnant for nine months. Newborn calves nurse their mothers and as they grow, they graze on pasture or rangeland with their mothers. When the calves are six to eight months old, they are weaned and moved to a backgrounding operation. The heavier calves may go directly to a feedlot.

Cow-calf and backgrounding operations are often combined. The backgrounding operations raise calves after six months of age, to take them to the feedlot stage. Backgrounders harvest hay and make silage for winter feeding. Rangeland and pastures provide forage for the other months. Backgrounded cattle go to the feedlot when their desired weight is achieved.

What happens when the beef cattle leave the ranch?

Cattle that have been backgrounded are sold to feedlots to be finished before processing. Traditionally, animals are transported by truck or rail to be sold, most commonly through public livestock auctions. At the auction, the auctioneer sells the cattle to the highest bidder. In recent years, new marketing techniques have been developed including computer and satellite auctions where the cattle buyer bidding on the cattle may be hundreds or thousands of miles away from the cattle.

What challenges do ranchers face?

One challenge that ranchers face is competition for the use of Crown-owned rangeland and water resources. Land and water uses which can conflict with ranching operations include domestic water needs, mineral extraction, native land claims, outdoor recreation, parks, subdivisions, timber production, wilderness areas, wildlife management areas and wildlife ranges. With good range management, cattle grazing is compatible with many of these other uses and usually improves the range for other uses. The ranching industry is active in land-use planning and works to co-operate with other resource users for present and future needs.

Who's involved in producing beef?

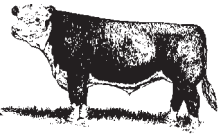
- Ranchers/cow-calf operators
- Backgrounding operators
- Feedlot operators
- Veterinarians
- Machinery dealers
- Feed and fertilizer sales persons
- Auctioneers
- Truckers
- Packing plant workers
- Meat graders/inspectors/butchers

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Cattlemen's Association



Photo by: Neil MacDonald



Beef Feedlot Finishing

Interesting Facts

Beef cattle are ruminants, which means they are best suited to digest forages (grasses and legume). If their feed is changed gradually, the microbes in the rumen (stomach) will change so that they can digest grain diets. Grain is used in beef-finishing diets because it has higher energy values than forage, and cattle gain weight more efficiently.

What is a feedlot?

When calves are anywhere from eight to 20 months old, depending on how they have been fed, they are sent to a feedlot where they are fed a high-energy diet.

Where are the feedlots in BC?

Most of BC's feedlots are located in the Interior Regions, with many in the Okanagan Valley. Feedlots in BC vary in capacity size from 500 head to 7,000 head of cattle. BC cattle are also sent to Alberta for finishing in large feedlots.

What happens at the feedlot?

The cattle are kept in large, comfortably bedded pens. They are given a controlled diet that assures they will gain just the right proportions of muscle and fat. The resulting beef product will be consistent

in quality, texture and taste. The cattle gain from one to two kilograms of body weight per day.

Cattle are ready for processing when they weigh 550 to 640 kilograms (1,200 to 1,400 pounds).

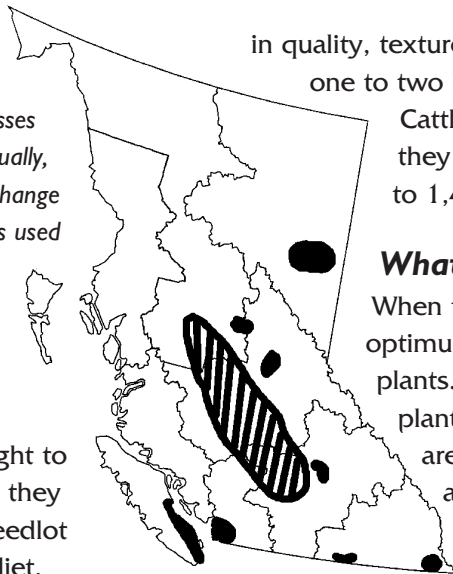
What happens next?

When the cattle have reached their optimum weight, they are sent to packing plants. In a federally-inspected packing plant, the animals, and then carcasses, are inspected to ensure that the animals are healthy and the beef is wholesome. After inspection, the carcasses are graded based on the ages of the animals, the

quality of the meat and the meat yield. In Canada, there are three A grades, based on the level of marbling (amount of fat laced through the meat). AAA has the highest amount of marbling. The carcasses are cut in two, and the sides of beef are sold to grocery stores and butcher shops. In some cases the sides are further processed and cut into portions that fit into a box. This is called "boxed beef". Many of the large grocery stores and restaurants receive their beef in this form. The by-products, such as bones and hides, are sent for further processing.

What products come from beef cattle?

Processed cattle give us many products. Among the food items produced are steaks, roasts, hamburger, organ meats, sausages and gelatin. Beef products are high in vitamins, iron, zinc, and other minerals. The hides from the cattle are tanned and used for leather products (shoes, belts, and sports equipment). Medicines made from cattle



Grading Stamp



Inspection Stamp

by-products include insulin (for diabetics), heparin (an anticoagulant) and epinephrine (for allergies). Other by-products are used in making soap, cosmetics, buttons, photographic film, sandpaper, violin strings and explosives.

All segments of the beef cattle industry work toward bringing consumers beef that is tasty and safe. They are very careful to treat their cattle humanely by keeping them healthy and well fed. Producers educate themselves about new and better feeding methods, safer ways of handling cattle and up-to-date health practices.

Who's involved in producing beef?

- Ranchers/cow-calf operators
- Backgrounding operators
- Feedlot operators
- Veterinarians
- Machinery dealers
- Feed and fertilizer sales persons
- Auctioneers
- Truckers
- Packing plant workers
- Meat graders/inspectors
- Butchers

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Cattlemen's Association
Beef Information Centre





Bison

Interesting Facts

Bison can easily jump over 2m fences. They can go almost anywhere and a common saying is "You can lead a bison anywhere it wants to go."

What are bison?

Bison are large mammals with a keen sense of smell and excellent eyesight. They have a reputation for hardiness and have strong herding instincts. They are curious, wary and easily frightened. Their bodies are covered in long, coarse guard hairs and a matted, woolly undercoat. A shaggy, woolly dark brown mane covers the head and forelegs; the coat on the hindquarters is short, straight and coloured coppery brown; the head and beard are almost black. As with beef cattle, there are cows (female), calves (young) and bulls (male) in the herd.

Where are bison produced in BC?

Forty-six per cent of bison farms are located in the Peace River North East region, 27% in the Thompson-Okanagan, 15% in the Cariboo-Central-Chilcotin area, 2% in the Kootenays, and 3% in the Lower Mainland.

How many bison do we produce?

There are approximately 120 bison farms in BC. The total population of bison averages 12,600.

How are bison produced?

As bison are wild animals, they are classified as game animals. Their reproductive systems react to the availability of food. When good food is available bison will breed. If good food is not available they may not breed. Farmers can make a bison's

reproductive system believe forage is plentiful by providing the best pasture six weeks prior to and during breeding season.

Bison cows are seasonally polyestrous which means they have more than one estrus cycle characterized by a distinct breeding or rutting season lasting from 2 to several months. To ensure a cow cycles each year, farmers must maintain top herd nutrition.

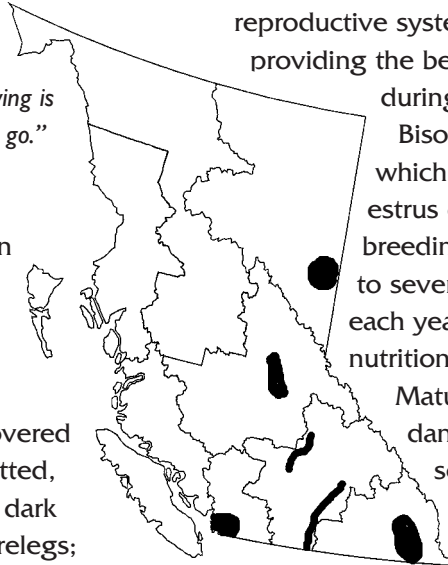
Mature bulls are hard to handle and dangerous during the breeding season (rut). Rutting bulls bellow frequently and increase grooming activity by pawing, wallowing and horning. Trees are jabbed, rubbed, debarked, thrashed and even uprooted.

The rut reaches its peak in late July to mid August, waning by the end of September. Most of the breeding activity happens during the cooler times of the day, such as dawn and dusk. Optimum breeding occurs in July or August with calving in April and May.

The gestation period is just over nine months, or between 270 to 285 days. Usually one calf, weighing 20 to 25kg, is born. At two and a half years a bull can weigh 550 to 650kg and are generally slaughtered for meat at this age. Bison are fully mature at 8 years and live for 12 to 25 years. They can, however, become very cantankerous after 5 years of age.

How is bison used?

Bison are raised for their meat and for their hide. Game meat is lean and low in cholesterol. It is in demand by restaurants and is exported to Europe and the United States. The fur hides are made into jackets, coats, hats, and car seats.



What happens after the bison leaves the farm?

When bison are ready for market they are transported to processing facilities where the animals are slaughtered and processed. The product is distributed by various means to retail stores, restaurants and novelty shops.

What challenges do bison producers face?

Bison can jump several times higher than any domesticated farm animal. Game farmers must, therefore, construct very strong, high fences to ensure their animals remain inside the farm. A good knowledge of bison behaviour will result in better management and prevent problems of escape and damage to facilities.

Who's involved in the bison industry?

- Game farmers
- Processors at the slaughterhouse
- Specialty wholesalers
- Truckers/transporters
- Restaurant chefs

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Bison Association





Chickens

Interesting Facts

Chickens do not chew their food. The food is moistened in the throat and ground up in an organ called the gizzard. A chicken is fed grit-hard particles like small stones. These particles lodge in the gizzard and aid in the grinding process. Chickens convert feed to weight gain very efficiently. That is a chicken will use as little as 1.67kg of feed per kg of body weight gain.

What are chickens?

Chickens are domesticated fowl raised for their meat or eggs. A male chicken is called a rooster and a female chicken is called a hen. Young chickens are called chicks. Chickens are categorized into meat chickens and egg layers. This profile discusses meat chickens.

Where are chickens produced in BC?

Over 80% of the production of chickens is located in the Fraser Valley while 8% is produced on Vancouver Island and 9% in the Interior.

How many chickens do we produce?

BC has over 311 commercial chicken producers. They produce over 102 million chickens, weighing a total of 150 million kilograms (after evisceration), with a farm gate value of \$246 million and a retail value of \$644 million.

There are 59 producers who specialize in breeding hens which lay fertilized eggs to be hatched into broiler chicks. They produce about 104 million hatching eggs.

Another 15 million eggs to be hatched are imported. Hatcheries in the province incubate, or set, these eggs until they hatch.

How are chickens produced?

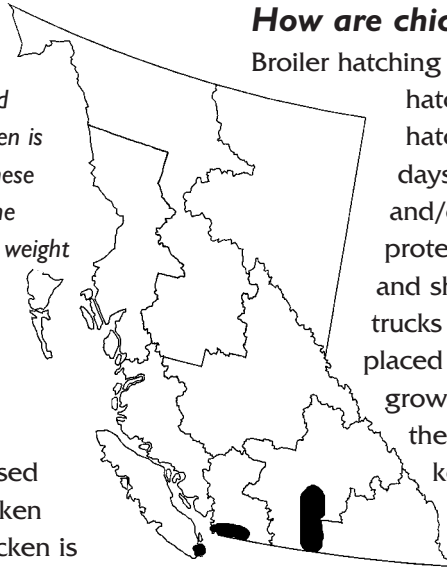
Broiler hatching eggs are produced on broiler hatching farms. The eggs are sent to hatcheries. The eggs hatch after 21 days of incubation. The hatching eggs and/or chicks are vaccinated for disease protection, sometimes sorted into sexes, and shipped in temperature-controlled trucks to production farms. They are placed on litter (usually sawdust) and grown to 2.2kg in 39 to 42 days. During the first few weeks of growth, they are kept under brooders, devices that are used to keep the chicks warm. The temperature is lowered each week until the birds are adequately feathered to maintain their own body heat. These birds consume approximately 1.85kg of feed per kg of body weight produced over the 42-day period (industry average).

How is chicken used?

Chicken meat is sold either fresh or frozen, whole or half birds, or cut into various pieces such as breast, thighs, drumsticks or wings. Chicken can be fried, roasted or broiled. It is sold in nugget form and made into other processed products. It is included in soups and stews.

What happens after the chickens leave the farm?

The chickens are loaded into cages on a truck and taken to the processing plant. At the processing plant they are placed on shackles which move through the plant. The birds are electrically stunned prior to slaughter to minimize suffering. The feathers and internal viscera are removed and the birds are



inspected to ensure that they are healthy and safe for human consumption. Qualified federal inspection staff carry out the inspection.

What challenges do chicken producers face?

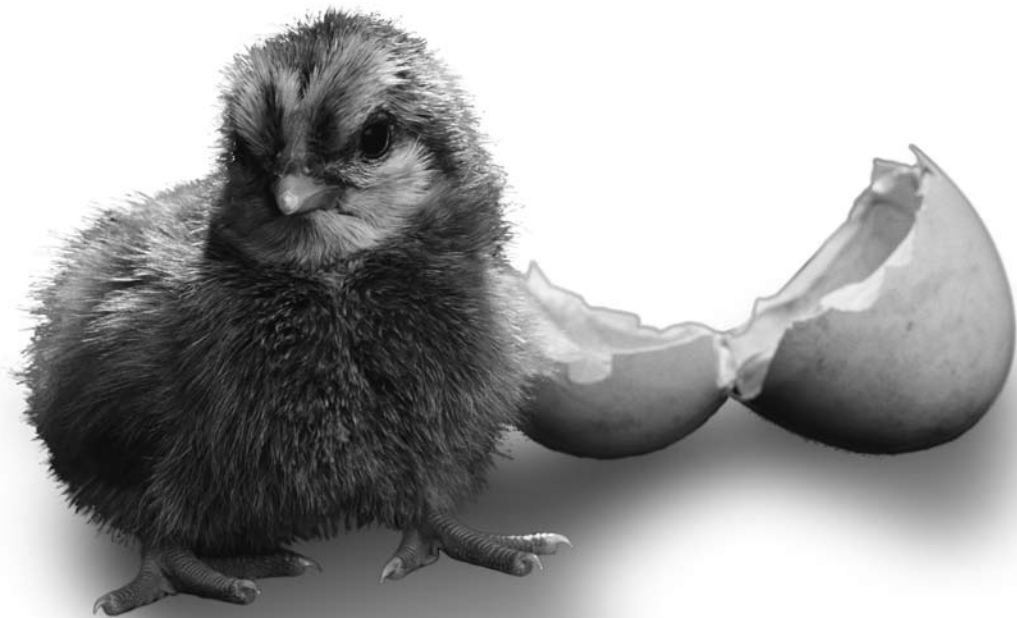
BC chicken producers have faced declining prices and competition from eastern Canada. To maximize production efficiency they have applied sophisticated computer technology to control the environment in the barns, and to assist them in managing their operations. Major investment in new buildings and equipment is required in order to meet market demand.

Who's involved in producing chickens?

- Broiler breeder producers
- Hatchers
- Veterinarians
- Chicken producers
- Equipment suppliers
- Trucking companies
- Processors
- Government inspectors
- Restaurants, hotels, institutions, retailers, fast food outlets
- Pharmaceutical companies
- Feed company nutritionists and fieldworkers
- BC Avian Monitoring Laboratory

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Chicken Marketing Board
BC Chicken Growers' Association
BC Broiler Hatching Egg Commission
BC Sustainable Poultry Farming Group





Dairy (Milk)

Interesting Facts

The udder of the dairy cow is divided into four compartments and thus the need for four teats. Goats and sheep have just 2 compartments. Dairy cows use the energy from their feed to make milk rather than excessive body fat.

What makes up a dairy herd?

Herds of dairy cows (females) are raised for the production of milk. As mammals they produce milk for their young. Fortunately for us a dairy cow produces more than her calf requires. Dairy bulls (males) may be housed in separate facilities or occasionally with the cows, however breeding is usually done artificially. The most common dairy breed is the Holstein, the black and white cows often seen in pastures. Other breeds are the Ayrshire (red and white), Jersey (tan and black), Brown Swiss (brown and black) and Guernsey (golden white). Recently there has been an increase in goat and sheep milk production in BC.

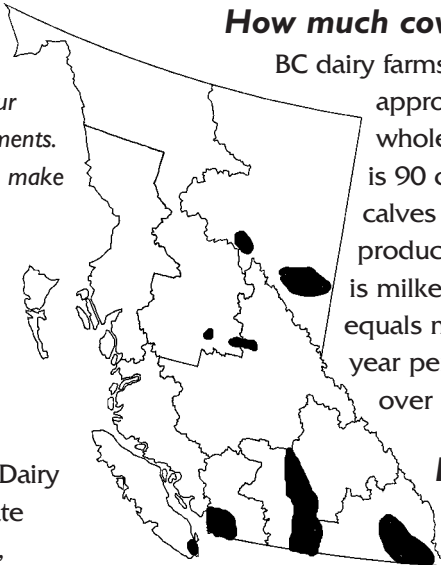
Where is milk produced in BC?

Location	Number and Type of Dairy Farm		
	Goat	Sheep	Cattle
Fraser Valley	9		397
Thompson-Okanagan	5	6	99
Kootenay			10
Cariboo			7
Vancouver Island	1	1	57
Nechako			11
Peace River			3
Total (BC)	15	7	584

*2006 data

How much cow's milk do we produce?

BC dairy farms produce an annual volume of approximately 640 million litres of fresh wholesome milk. The average herd size is 90 cows plus additional replacement calves and heifers. The average cow produces 30 litres of milk each day and is milked for 10 months each year. This equals more than 9,432 litres of milk per year per cow. That's an average of just over 100 glasses of milk per day.



How is milk produced?

Before any cow produces milk, she must first become a mother.

When a dairy cow reaches about 15 months in age she is bred, usually by artificial insemination. After 9 months she has a calf and produces milk. The cow can produce milk for the next 10 months.

A cow that is being milked can eat up to 40kg of grass, forage and hay a day and drink up to 170L of water a day. That's almost a bathtub full. A cow's diet is supplemented with feed, such as barley, wheat, soybean and canola meal. These are formulated and fed according to the energy, protein and other nutritional needs of the animal.

At milking time the cows go into a milking barn. When a cow is standing ready to be milked, her udder and four teats are rubbed and cleaned. An extension of the milking machine is attached to each teat. The action of the machine simulates the suckling action of a nursing calf. The milking machine draws the milk from the cow and collects the milk in a holding tank. The milk is then quickly cooled.

Cows are milked twice and sometimes three times a day, usually at the same times each day.

All equipment used for milking is thoroughly cleaned and sanitized before and after each use.

Dairy farmers use computers to keep track of how much each cow eats, how much milk each cow produces, and even to match a particular cow with a particular bull for breeding. They also use computers for financial accounting and to find information on the Internet.

Quality Checks on Every BC Dairy Farm

From the farm to the store there are a number of quality checks that milk must pass before it reaches your table.

- The farm is inspected and certified before it can produce milk.
- Farms are inspected regularly to ensure they meet the provincial standards for quality milk production and premises. Everywhere the cows go and all of the equipment used in the handling and storage of milk must be kept clean and well maintained.
- Cows are monitored and tested regularly to ensure good health.
- Growth hormones (used to increase milk production) such as BST or rBGH are not legal in Canada and therefore not permitted for use with dairy cows.
- As soon as milk leaves the cow it is cooled and is kept cold at all times.
- Before milk can be picked up it must be inspected and graded by a licensed bulk milk tank grader. It is the grader's responsibility to ensure the milk is cold (below 4°C), smells fresh and looks clean.
- A milk sample is taken from every farm tank when milk is picked up. This milk sample is then taken to a certified lab where it is tested.
- Milk is transported to the dairy in stainless steel tanker trucks. These trucks are also certified before they can carry milk.

What does milk look like when I use it?

We drink fresh milk (whole, 2%, 1%, skim and chocolate) and use milk products such as cheese, yogurt, sour cream, whipping cream, cottage cheese, evaporated milk, sweetened condensed milk and skim milk powder.

BC produces many types of cheese from cow's milk, including: cheddar, mozzarella, parmesan, blue and white mold varieties, colby, gouda, edam, monterey jack, feta, cottage cheese, paneer, fresh curds and ricotta cheese. There are many new small businesses in BC hand-crafting cheeses from BC milk.

Milk is made of 89% water and 11% solids. Key nutrients in milk are: calcium, riboflavin, vitamin A and protein. Milk, cheese and yogurt are easy ways for most people to get the amount of dietary calcium recommended by Health Canada.

A 250 ml glass of milk provides most of the recommended daily allowance of vitamins and minerals: 25% vitamin D, 15% vitamin B-12, 17% protein, 29% calcium, 23% phosphorus and 23% riboflavin.

What happens after the milk leaves the farm?

Milk is picked up at the farm by a certified tanker truck, which delivers it to a dairy plant. At the dairy plant, the fat is separated from the milk so that skim, 1% and 2% milk can be made. Homogenized milk contains 3.25% butterfat. After separation, milk is pasteurized and homogenized. Pasteurization is the process of quickly heating milk to 72°C and rapidly cooling it to 4°C. This kills any harmful bacteria and keeps milk fresher longer. Homogenization is the process of breaking the fat into tiny globules so that it doesn't separate out from the milk. During all these steps, quality control ensures milk is safe and clean.

The majority of milk produced in BC is sold as fluid milk, while the rest is manufactured into semi-fluid products and sold as cheese, ice cream, yogurt and cottage cheese.

Quality Checks At Every BC Dairy Processing Plant

There are a number of quality checks that are done at the processing plant.

- Before the truckload of milk is unloaded at the dairy it is tested for antibiotics. This ensures that all products meet the strict standards of no antibiotics in milk. If antibiotics are found, the farmer who contaminated the load may be held responsible for the entire load.
- The milk is also tested for temperature, acidity

and odour before it is accepted.

- Other tests are done regularly for bacteria, water contamination and somatic cell counts. Somatic cells are an indicator of animal health and milk quality.
- Milk is natural—nothing is added except Vitamins A and D, which is required by law.
- All dairies are inspected regularly for cleanliness, handling procedures and equipment standards. All milk equipment is cleaned and sanitized on a daily basis.
- All fluid milk sold in Canada must be pasteurized. This is the law. It is necessary to kill any harmful bacteria that may find its way into milk. Pasteurization also destroys spoilage organisms.
- Milk is packaged quickly—usually within 24 hours of arriving at a dairy plant.
- Packaged dairy products are also required to be regularly tested by a certified lab to ensure they meet the strict standards for composition and potential contaminants such as bacteria and antibiotics.

Quality Checks At Every BC Grocery Store

- Dairy products must be held at 4°C during transport and display to ensure their safety and quality.
- All dairy products are code dated to ensure they are purchased at their highest quality. Dairy products not sold before their “Best Before Date” are removed from sale.

Quality Checks at Home

As food safety is a responsibility of everyone, there are some Quality Checks to do at home.

- Keep milk cold—pick it up last when shopping and avoid leaving it exposed to warm temperatures or sunlight in your car.
- Check the temperature of your refrigerator to ensure it is below 4°C.
- Keep milk containers out of the fridge just long enough to serve. Return the milk to the fridge as soon as possible.
- Rotate milk and other products: use older products first.
- Leave dairy products in original containers. They

can pick up the odours and flavours from other foods in the fridge if left open.

BC has some of the highest standards for milk production, transport and processing found anywhere in the world. Extensive quality checks and testing unique to the dairy industry ensure that BC consumers can always purchase high quality, safe and nutritious dairy products.

What challenges do dairy producers face?

Dairy farmers must meet many challenges in order to remain sustainable—both environmentally and economically.

Dairy farms are truly environmentally sustainable. The majority of feed that cows eat is produced on BC farms and the cows’ manure is recycled by incorporating it back into the fields where the feed is grown. Manure is very useful to farmers because it adds nutrients and organic matter, which help sustain and build the quality of the soil.

Canadian dairy producers work hard to ensure consumers receive quality dairy products at reasonable prices. What many people don’t realize is what a small share of the consumer dollar dairy producers actually receive for their products. For example, take a look at the cost of a glass of milk and a pizza at a restaurant. An 8 ounce glass of milk in a restaurant will typically cost \$1.50. Of that \$1.50, 16.3 cents goes to the milk producer (who feeds the cows, milks the cows, transports the milk, etc.); 8.9 cents goes to the processor (who pasteurizes, processes and packages the milk); and \$1.25 goes to the restaurant, where the milk is simply poured into a glass and carried to a table. Similarly, surveys indicate that a medium pizza (with three toppings) in a restaurant is typically \$11.46. The dairy producer receives only 54 cents for the cheese on that pizza.

Further challenges facing today's dairy producers include:

- Meeting evolving environmental, food safety, and animal welfare requirements.
- Surviving a market that is increasingly competitive on a global scale.
- Increasing input costs for such things as feed (grain), equipment and labour, with decreasing revenue.
- Dealing with increasing competition for land use (i.e., urban push, increasing land values.)

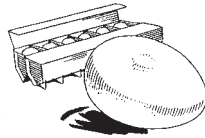
Who's involved in getting the milk from the farm to the table?

- Dairy farm owners, managers and staff (milkers, herdsman, field personnel)
- Breed associations
- Artificial insemination technicians
- Dairy herd improvement advisors
- Veterinarians
- Milking equipment, farm equipment, building and facility suppliers
- Feed producers and nutritionists
- Dairy processor field representatives
- Government inspectors and advisors
- Government and university researchers
- Milk tank truck drivers
- Milk product deliverers
- Store employees

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Dairy Foundation
BC Agricultural Council
BC Milk Producers' Association
BC Milk Marketing Board
BC Dairy Council





Eggs

Interesting Facts

The egg contains its own immune system to guard it against bacterial infection. The shell of the egg is a complex structure composed mainly of calcium carbonate. The shell is able to breathe yet is covered by a thin wax coat called a cuticle. The composition of the egg can be altered when the hen is fed different feeds.

What are eggs?

A “layer,” or female chicken, produces shell eggs. These eggs have white or brown shells, depending upon the breed of chicken that laid them. The most popular breed for the production of white eggs is the White Leghorn. Several breeds of layers have been developed for commercial brown egg production. The colour of the shell does not affect the nutritional value of the egg. BC egg producers also supply eggs from hens raised in various flock management systems that specify housing and feed requirements. These eggs are called BC Fresh Specialty Eggs and are as follows:

- Omega 3 Enhanced: Eggs from layers that are fed an all-vegetarian based diet that includes significant amounts of flax seed. As a result, these eggs are a source of Omega 3 fatty acids.
- Vitamin E Enhanced: Eggs from layers that are fed an all-vegetarian based diet that has been enhanced with extra Vitamin E. As a result, these eggs are an excellent source of Vitamin E.
- Free Run: Brown eggs from layers that are housed on litter and/or slotted floors. The hens are free to move around the floor of the barn.
- Free Range: Brown eggs from layers that are housed on litter and/or slotted floors and have free movement on the floor of the barn.

The hens also have access (weather permitting) to an outdoor area with vegetation.

- Organic: Brown eggs from layers that are fed organic feed and raised in accordance with guidelines issued by certifying organizations.

Where are eggs produced in BC?

There are 2.45 million commercial laying birds in BC, 1.7 million of those are located in the Fraser Valley, 304,000 in the Interior and 245,000 on Vancouver Island. There are approximately 4,500 small flocks located throughout BC, most of which contain under 200 birds, with a few containing up to 500 birds.

How many eggs do we produce?

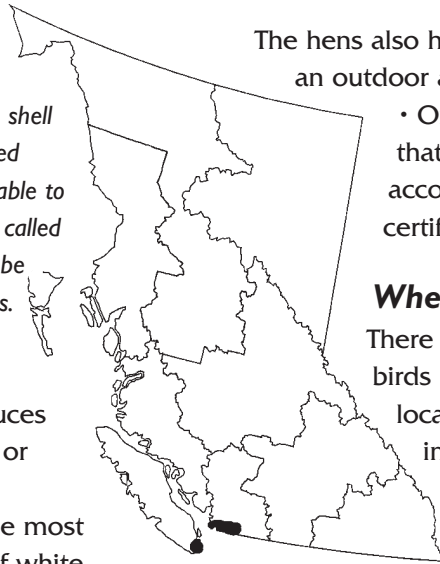
The 51 commercial egg producers in BC produce 55 million dozen eggs annually valued at the farm gate at \$78 million. The industry imports an additional 3.6 million dozen and exports 580,000 dozen annually. These producers are responsible for 95 to 98% of BC egg production, with the balance coming from the small backyard flocks.

The average flock size for the commercial producers is 15,000, with the largest flock having 55,000 birds.

How are eggs produced?

Layers start to produce eggs when they are 18 to 21 weeks of age. A layer lays approximately 290 eggs per year.

Most of the laying birds in BC are kept in cages indoors, to ensure proper nutrition, temperature control, protection from disease, freedom from predation, and for maximization of production.





The hen house is lighted artificially because layers lay more eggs with increased hours of daylight. Eggs that are laid in the cage roll down a sloped floor onto a conveyer belt and are automatically collected and immediately cooled.

After 12 to 14 months of production, the hen's egg production and egg quality declines. The hens are sold to a processing plant as "spent fowl," for use in production of soups and boneless canned meats or as chicken meat additives for several oriental foods, such as chicken chow mein.

How are eggs used?

Table eggs can be eaten by themselves—fried, boiled, poached or scrambled. They can be used in drinks such as eggnog, or added to baking. Eggs are an excellent source of protein, vitamins, iron and minerals.

Eggs are also decorated at Easter time. Ukrainian Easter eggs, some of the most elaborately decorated eggs, are called pysanky.

What happens after the eggs leave the farm?

From the farm, a refrigerated truck takes the eggs to a grading station where they are cleaned, graded and packed. The eggs are washed and sanitized in a tunnel washer and given a light oil coating to replace the natural oil coating that is removed. They are passed over a bright light, which reveals the interior. This process is called candling because originally the light used was a candle. The eggs are graded according to size and quality. Eggs that do not meet Grade A requirements are removed from the grading line and sorted for other uses. A Grade

A large egg weights 56g or more. They are packed into 15 dozen cartons or cases of 30 dozen, and trucked to grocery stores or restaurants.

Eggs should be stored in a cool place and used within 3 weeks of being laid. Eggs generally reach the retail market within 4 to 7 days of being laid.

About 86% of the BC egg production goes to the table egg market. The remaining 14% go to a "breaker plant" where the eggs are broken to make liquid whole egg, or separated into component parts.

Common products of this further processing of eggs are liquid, frozen or dried egg. An enzyme called lysozyme is separated from the egg during the breaking process. Lysozyme is used for medicines and as a food preservative. It is a very valuable by-product of egg processing. Hotels, restaurants, bakeries and institutions, such as hospitals and homes for seniors, use the processed egg products.

What challenges do egg producers face?

The egg industry needs to satisfy the growing demand for eggs from chickens that are reared on the floor or outside on range. Many people are becoming concerned about the cruelty of keeping the layers in cages. The egg industry needs to educate the public as to the positive animal welfare benefits that cage rearing provides the birds. They need to inform the public of the advantages of producing eggs under intensive cage production in order to keep the costs down and to meet the demand for inexpensive, good-quality food.

Who's involved in producing eggs?

- Egg producers
- Hatchery operators
- Equipment suppliers
- Trucking companies
- Grading stations
- Breaker stations
- Avian Monitoring Laboratories
- Federal government inspectors

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Egg Marketing Board



Fallow Deer

Interesting Facts

In 1990, the bulk of venison sold in BC was imported from New Zealand. Today, BC fallow deer producers are serving approximately 80% of the market. There has been an increase in the number of restaurants and stores serving or selling venison.

What are fallow deer?

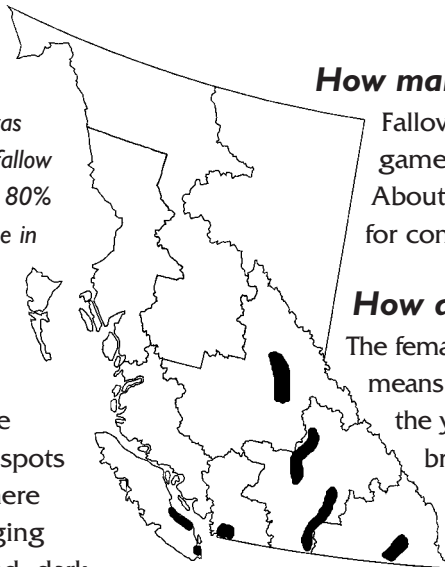
Fallow deer are mammals that have longer tails than other deer, white spots and a prominent Adam's apple. There are up to 14 colour variations, ranging from white to butterscotch, light red, dark red, reddish brown, brown, dark brown and black. They are all born with white spots which, along with the colour of their coat, they retain for life.

Females (does), look light, smooth and fragile. They tend to be about 6cm higher at the hips than at the shoulders. Their height at the shoulders (withers) is between 50 to 100cm. Their body length is 130 to 175cm.

Males, or bucks, have a heavy, or stocky, appearance. Bucks have "pot bellies," and at maturity they stand about 90cm, weighing 73 to 90kg. Only males grow antlers. These antlers are shed and regrown annually.

Where are fallow deer produced in BC?

Fallow deer are very adaptable to most conditions, except for those found in very high mountain regions. In BC, there are about 35 fallow deer farms that have approximately 6,000 animals. These animals are found throughout the province, with a higher concentration in the Thompson-Okanagan region.



How many fallow deer do we produce?

Fallow deer farms make up 35% of the game farm industry in British Columbia. About 1000 deer are processed each year for consumption.

How are fallow deer produced?

The females, are seasonally polyestrous, which means they will cycle only at a certain time of the year. They are referred to as short day breeders, as breeding occurs in the fall, triggered by environmental factors, mainly fewer daylight hours in a 24-hour period. During the rut, or breeding season, the bucks spend more time establishing their territories than they do feeding. This combined with the physical demands of courtship and breeding can cause dramatic weight loss.

The gestation period is between seven and a half and eight months. Fawns are born during June or July when climate and feed normally favour survival. The average birthweights for farmed fallow deer are 3.9 to 4.8kg for males and 3.5 to 4.0kg for females.

How are fallow deer used?

Final products include meat (venison), antler velvet and shavings, and deer fur and hide. The skin is used for rugs and clothing. Consumers are demanding more game-farmed venison than ever before. Farmed venison has significantly lower fat and cholesterol content than most other red meat.

Antler velvet and shavings are exported to various countries. Asian countries purchase antler shavings for medicinal purposes to increase vitality, energy and the overall health of a person. Some people take it as a health tonic.

What happens after the fallow deer leave the farm?

Fallow deer are transported to processing facilities where the animals are slaughtered and processed. Producers or wholesalers distribute the product to retail stores, restaurants and novelty shops.

What challenges do fallow deer producers face?

One challenge that fallow deer farmers face is the perception that venison should be eaten only in autumn and winter. Some restaurants, for example, remove venison from their menus when the weather warms. To counter this, there is a need for increased promotion and education to improve the year-round market for venison.

Who's involved in producing fallow deer?

- Game farmers
- Slaughterhouses (processors)
- Transporters/truckers
- Meat packers
- Butchers

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Fallow Deer Association





Game Birds

Interesting Facts

A quail egg can be 1/3 the weight of the laying hen's body.

What are game birds?

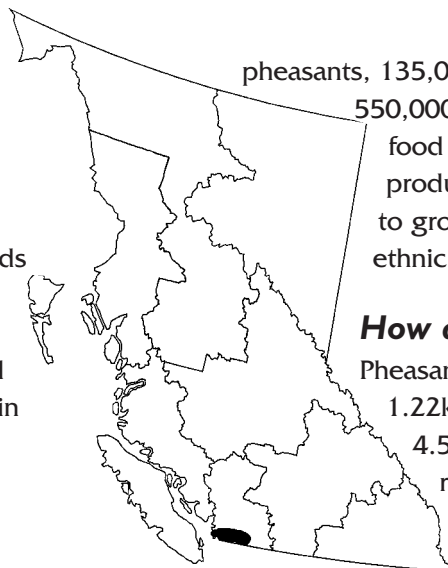
Game birds are traditionally wild birds that are raised in captivity for food consumption. Pheasants, quail, partridge, squab (baby pigeons) and silkies (bantam chickens) are raised in BC.

Where are game birds produced in BC?

Most game birds for commercial sale are raised in the Fraser Valley close to the only processing plant in the province.

How many game birds do we produce?

Annually, BC produces approximately 19,000

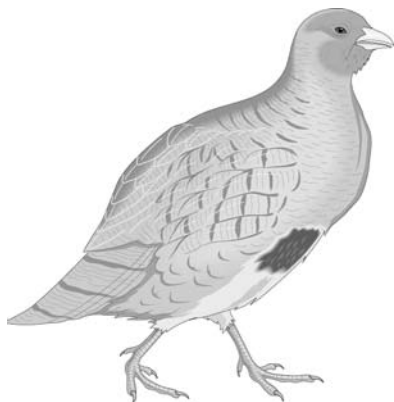


pheasants, 135,000 quail, 9,000 partridge, 550,000 squab and 500,000 silkies for food consumption. Squab and silkie production and consumption continue to grow rapidly, reflecting demand from ethnic markets.

How are game birds produced?

Pheasants have a dressed weight of 1.22kg. They convert feed at a rate of 4.5kg per kg of body weight and reach market weight at 20 weeks.

The birds are fed high-quality rations to ensure good quality meat. Partridge and quail are raised in conditions similar to broiler chickens. They are small birds that require little floor space. They consume 3.5kg of feed per kg of body weight gain. Quail are ready for market in seven to seven and a half weeks. At maturity the birds weigh 0.2kg eviscerated.



Partridge



Quail

Squab are the young offspring of pigeons. Pigeons produce 10 squab per breeding pair per year. Each squab weighs 0.45kg dressed weight. The pigeons eat high quality grain and when raising their young they only partially digest it. They then regurgitate it as “pigeon milk”. Squab production is labour intensive.

Silkies are bantam chickens. Silkies have a dressed weight of 0.74kg and convert 3.5kg feed per kg of body weight gain. They lay only 120 eggs a year when mature compared to 290 for a commercial laying chicken.

How are game birds used?

Game birds are produced for their meat. They look like small roasters when they are cooked. In restaurants, the larger game birds, such as pheasants, may be served as quarters or halves. Sometimes only the breast meat is served, particularly in the case of quail and partridge. Quail eggs are boiled and pickled.

Some pheasants are produced for use on non-agricultural hunting reserves. Some quail are raised for feeding falcons and other hunting birds.

Meat of silkies is used as a medicine in Asian communities.

What happens to the game bird after it leaves the farm?

The farmer can sell the product to a processing plant that wholesales it to hotels, restaurants, institutions

and retail outlets. Some farmers may have access to a processing plant where birds are killed. They pay the processing plant to process the birds, then take the birds back and sell them themselves. It is important with these new niche markets (direct farm marketing) to maintain a constant supply and consistent quality.

What challenges does the game bird producer face?

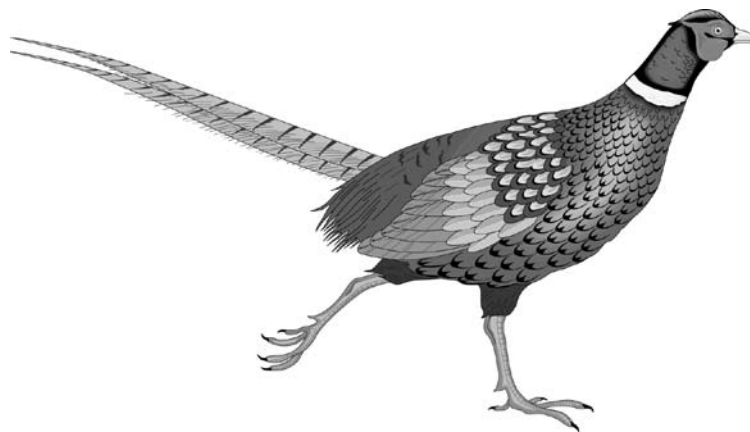
All game bird producers are faced with competition from low-cost imported product from the United States. There are no supply management systems or border controls on the amount of product that can be imported, so markets tend to be cyclical. As a result, most producers are hesitant to expand their operations using borrowed capital. Competition among producers for existing markets in BC is intense.

Who is involved in the game bird industry?

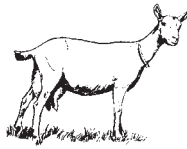
- Game bird producers
- Feed companies
- Equipment suppliers
- Processing plants
- Provincial and federal meat inspectors
- Specialty market distributors

Contacts and other resources:

BC Specialty Birds Association



Pheasant



Goats

Interesting Facts

Goats were domesticated as early as 7000 BC. Settlers in New France brought them to North America, with sheep, in the early 1600s.

What are goats?

A goat is a frisky, shorthaired domesticated mammal. A female goat is called a doe, a male goat is called a buck and a young goat is called a kid. A common name for a milk goat is a nanny. Some goats are naturally hornless, or polled. Dairy goats and pet goats usually have their horn buds removed at a few days old for safety reasons. Horns, which are used for protection against predators, are left on goats that live on pasture (i.e., meat and Angora goats).

Where are goats produced in BC?

Goats are raised throughout much of BC. Dairy goat farms are found in the Lower Mainland, the Thompson Okanagan, and Vancouver Island. There are 12 licensed dairy goat farms in BC.

How many goats do we produce?

Most goats are kept as pets, however, goats are also kept for the production of milk, meat or fibre. Since the arrival of the Boer goat in Canada, there has been an increased interest in meat production.

How are goats produced?

Goats are relatively clean animals. They eat a wide variety of plants, including types that sheep and cattle won't eat. However, production animals feed on silage, hay and grain and are housed just like dairy cattle.

Special 1.2m fencing may be required to keep goats in. As goats like to go around obstacles, electric fencing is sometimes used. Many producers provide "play areas" with things to climb to amuse goats and to prevent damaging behaviour. Goats need protection from coyotes or roving dogs if on pasture. Some producers use Pyrenees dogs to keep predators at bay. It is important to provide extra feed for the doe during breeding, pregnancy and nursing. An underfed doe will have problems. The gestation period is 150 days. Kids are born between early January and late

May, except in a production herd, where they are born year-round. Goats can have from 1 to 4 kids (very rarely 5 or 6) in one gestation. Twins are most common (about 70% of kiddings).

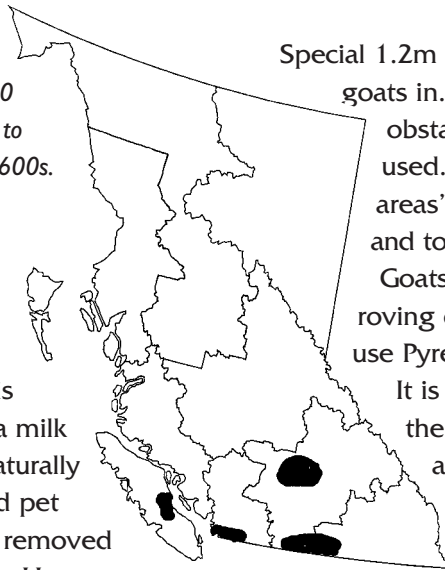
It usually takes from 4 to 6 months to raise a meat goat for market. There is also a market for smaller kids (milk-fed, about 10kg in weight) at Christmas and Easter. Some ethnic groups prefer adult goats.

Goats that are raised for their fleece can live up to 15 years. They are sheared twice a year. The adults produce 4 to 7kg of mohair or cashmere a year. The goats may require shelter after being sheared.

How are goats used?

There are three main uses for goats and their products: milk, meat and wool. Many goats are milked. The milk is used for drinking or for making cheeses. Common types of goat cheese include camembert, chevre, feta, shepherd's, tomme and capriano.

Goat meat, called cabrito or chevron, has little fat. Some people say that it tastes better than venison. Goats also provide leather and fibre for clothing.





Goats are shorn and spinners and weavers use their fleece. Cashmere is the soft downy undercoat most goats produce for winter insulation. The fleece of an Angora goat is called mohair.

What happens after the goat leaves the farm?

Meat goats are slaughtered, cured and butchered. The fleece can be sold raw to spinners and weavers, or the producer can add value to the product by washing and carding the wool.

To ensure a safe and wholesome product, milk must be marketed quickly. Only licensed processors do this. Some producers are processors themselves and make their own cheeses.

What challenges do goat producers face?

Currently, there is limited support for goat producers. Producers are responsible for ensuring their own processing contract and sometimes are even required to do marketing and delivery to stores.

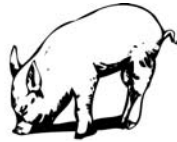
Commercial goat producers must be self-reliant, innovative and business oriented in order to make a profit from goat farming.

Who's involved in the goat industry?

- Goat owners
- Artificial insemination workers
- Breed association workers
- Dairy Herd Improvement advisors
- Feed industry representatives
- Veterinarians
- Animal health product suppliers
- Milk processors
- Livestock and milk haulers
- Cheesemakers
- Shearers
- Milking and farm equipment suppliers

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Goat Breeders' Association
BC Goat Milk Producers Association



Hogs

Interesting Facts

Pigs have a fast rate of growth. At birth they weigh 1.5kg. After 16 weeks, they weigh 60kg. Compare this to the average person who weighs 3.5kg at birth and 7kg after 16 weeks.

What are hogs?

Pigs, hogs and swine are different names for the same animal. Baby pigs are called piglets. A boar is a male pig used for breeding. A boar can start mating at 5 to 8 months of age. It will mate with 20 to 30 females a year. Hog production today utilizes artificial insemination to reproduce hogs. This method improves the quality of pork because it gets better use from more desirable boars. A female pig is called a gilt before she has a first litter, and a sow after she has a litter. A castrated male pig is called a barrow.

Where are hogs produced in BC?

Ninety per cent of BC's production comes from the Fraser Valley. The remainder is produced in the North Okanagan, on Vancouver Island and the rest in the Peace River.

How many hogs do we produce?

British Columbia has 50 registered growers producing 200,000 market hogs per year and 45,000 Round (Bar-B-Que) hogs. Ninety per cent of this pork is bought in BC and the other 10% exported. BC produces about 15% of the pork consumed in BC.

How are hogs produced?

There are a number of steps in raising hogs for meat. Often one producer will raise hogs from farrow to finish, which means from birth until they are ready to go to market. Some producers just raise the piglets after they are weaned from the sow.

The gestation period of a sow is about 112 days. When the sow farrows (gives birth) the average litter contains 10 piglets. When the piglets are small, they nurse from their mother. The mother is kept in a farrowing crate. This is a pen that allows the sow to nurse her young, but protects the young from the mother rolling on them. After 3 to 5 weeks, the young

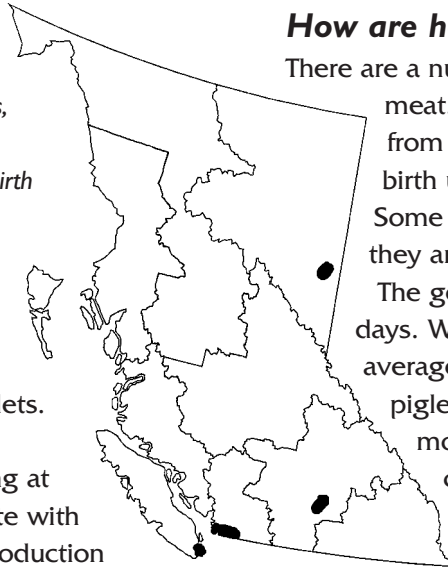
are weaned off their mother's milk and put in a nursery for 4 to 8 weeks. Nurseries are kept warm and the piglets start to eat solid food.

Pigs are then separated into similar sized categories and given a high energy feed. This is the growing-finishing stage.

Pigs are kept in large barns where the producer carefully controls feed, temperature and ventilation. This ensures healthy animals and maximum weight gain. It takes a total of 5 to 6 months to raise a pig from farrow to finish.

What happens after the hog leaves the farm?

When pigs weigh about 95 to 105kg, they are sent to market to be used as fresh pork. The slaughtered and cleaned pig carcasses, which weigh 75 to 85kg, are sold to grocery stores or butcher shops where they are butchered for fresh meat, or to meat processing plants where they are processed into products such as smoked sausages, bacon or ham.



To make products from the pig skin, the skin must first be tanned.

How are hogs used?

A hog is sent to market as meat, called pork.

BC pork is quite lean because of the quality of the breeding stock. Over the years, breeding programs have reduced the level of fat in the animals.

Pork can be eaten fresh as pork chops, roasts or spareribs. Pork is also often preserved, salted or smoked. We eat this as bacon, ham or sausages.

Pork is an excellent source of protein and vitamins, especially vitamin B1. BC pork is renowned as a high quality product.

The list of other products made from hogs is long. Fatty acids are used in the production of weed killers, rubber, floor wax, crayons, make-up, plastics, chalk and antifreeze. The blood is used to make glue, protein for animal feed, and in leather making. The glands and organs supply insulin for diabetics and ventricles for special heart surgery. The skin of the pig is used for gloves, shoes and garments. The hair is used in artists' brushes, as insulation and in upholstery. The bones are crushed into bonemeal that adds minerals to animal feed, is used in water filters and in glass making.

What challenges do hog producers face?

In recent years, consumers have demanded meat that is leaner and contains less fat. To satisfy this demand, swine producers have bred pigs that produce meat that is 25% leaner than 20 years ago.

Hog production is an intensive farming operation. Problems with waste management and disposal, and with unpleasant odours can arise—especially if the swine operation is near residential areas. There are strict environmental guidelines that address these issues.

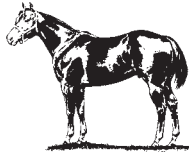
Who's involved in producing hogs?

- Swine producers
- Feed and veterinary suppliers
- Agri-business and extension representatives
- Meat processors
- Butchers and meat cutters
- Meat brokers
- Veterinarians
- Meat inspectors

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Hog Marketing Commission





Horses

Interesting Facts

The horse has played an important role in human progress—more so than any other animal. The horse has been a source of food, a hunting partner, a willing worker, a source of sport and entertainment and for many centuries, the most reliable means of transportation. Horses are again gaining a place in the workforce through selective logging procedures, ranching, guiding and outfitters, the film industry and law enforcement. The horse industry is a growing segment of BC agriculture, with a significant increase in the 1990s. It is labour intensive and contributes over 10,500 full-time jobs to British Columbia's economy.

What are horses?

A horse is a solid-hoofed, four-legged, plant-eating mammal with a flowing mane and tail. A female horse is called a mare and a male a stallion. The young are called foals. A filly is a young female horse and a gelding is a castrated male horse. In BC, horses can be divided into four main groups: race horses, sport horses, recreational horses and workhorses.

Where are horses located in BC?

Horses can be found throughout the province. There are higher horse populations in the Lower Mainland (20%), Peace River North East area (19%) and Okanagan (16%).

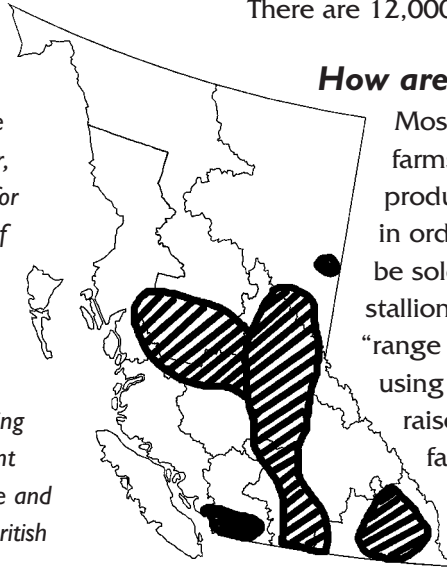
How many horses are there?

In BC, there are 37,000 horse owners, and 90,000 horses—roughly 37,000 recreational horses, 15,000 in race, 20,000 in sport and 18,000 workhorses.

There are 12,000 agricultural properties with horses.

How are horses produced?

Most horses are located on small farms that are 5 to 15 ha in size. Horse producers maintain breeding stock in order to produce young horses to be sold. Some large ranches still have stallions that roam free with mares and “range breed,” but most breeding is done using pre-arranged mating. Farmers who raise horses will maintain the necessary facilities to feed and properly care for their animals. When young animals are old enough, the farmer sells them, often for recreation or show



purposes.

Individual horse owners generally supply their animals with proper stabling, feed and grooming. In many instances, these owners may not have these facilities on their own property and, therefore, board their horses at local stables.

How are horses used?

Horses can be used as companions or for endurance or pleasure riding. There is a growing guide and packing industry in BC. Horses are used to perform work on ranches, and in selective forestry. They also perform at equestrian shows, such as dressage, jumping or three-day events, or at the racetrack.

What happens after the horses leave the farm?

People who want to buy horses can directly contact a breeder or attend an auction. There are local live horse markets in BC, Alberta and Washington State. Fresh meat from old animals is sold in European or

Japanese markets or used domestically as fox feed.

What challenges do horse producers face?

The market for horses is driven by the end use. A lack of access to safe riding areas and adequate facilities for show and racehorses can reduce the market value of horses. The horse producer, like other livestock producers, faces high input costs and uncertain markets. The value of an animal also depends on the horse's conformation (looks) and its athletic performance.

Who's involved in producing horses?

- Horse farmers
- Ranchers
- Horse jockeys
- Farriers (horseshoers)
- Grooms
- Auctioneers
- Veterinarians
- Stable owners and workers
- Horse trainers
- Trail guides

Contacts and other resources:

BC Ministry of Agriculture and Land
Horse Council of BC





Llamas

Interesting Facts

Llamas are the oldest domesticated animals in the world. Llamas originated in North America. With the coming of The Ice Age the herds split. Those in the north headed across the top of the continent to Siberia. Needing to adapt to a changing environment, llamas took on a new look—the camel. Those that stayed in North America headed south through Central America and on to South America. Conditions were favourable for llamas and they remained similar to those we see today.

What are llamas?

Llamas are a South American beast of burden with a soft woolly fleece. They stand 1 to 1.2m at the withers and 1.5 to 2m at the head; weigh 135 to 200kg and live 25-30 years. Llamas have a long graceful neck, erect ears, large doe-like eyes and a keen sense of hearing and smell. The upper lip is cleft with only lower teeth in the front, and upper and lower grinding molars in the back. Llamas can be white, silver, black, beige, brown or any combination of these. Llamas are ruminants with three chambered stomachs. They have padded feet with two toes covered by hard nails. Relatives of the llama include guanacos, vicunia, and alpacas.

Where are llamas produced in BC?

Llamas can be found throughout BC. They are mainly kept in the Okanagan and the Lower Mainland. Their ancestors are from the Andean highlands, so llamas are well suited to colder climates and are able to adapt to any climate or altitude. By evolving at higher altitudes, llamas have a large lung capacity and an ability to use blood oxygen more efficiently than other animals.

How many llamas do we produce?

There are an estimated 5,750 llamas on about 700 farms in BC. Because llamas are often kept as pets, exact figures are difficult to estimate.

Many llamas are being raised as breeding stock, fibre stock, and working stock for stress management therapy.

How are llamas produced?

Llamas are intelligent, social animals.

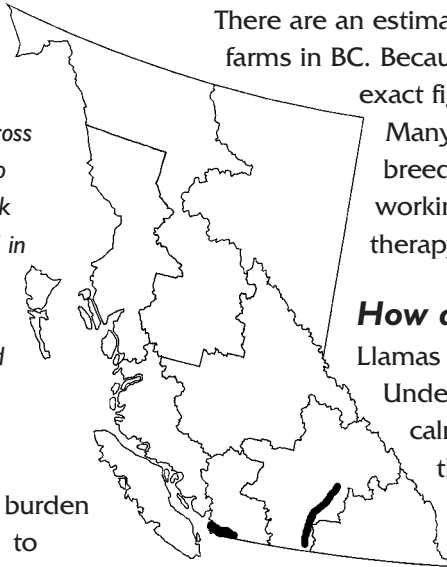
Under normal conditions, llamas are calm and stable, but if provoked

they may bite, kick or spit. They are generally disease free. Their diet consists of good pasture or hay with some supplemental

grain, mineral and salt. Commercial producers will breed llamas April through December to avoid winter births. The gestation period is 350 days. The Chia (offspring) weigh 8 to 16 kg at birth.

How are llamas used?

Llamas are used as pack animals, kept as pets, or sheared for their fibre. As pack animals, llamas are easier on trails than either horses or mules, and are capable of carrying 30 to 55kg. Llamas are used as show animals, as part of 4-H clubs, and can be trained to pull carts and wagons. Llamas, with their calm and gentle dispositions, can also provide therapy when they visit seniors, nursing homes or community centres. Handspinners and weavers seek their fibre, called camelid fibre, because it is oil free, lightweight, warm and will repel water if woven tightly. The hollow fibres make it a natural insulator. Llamas can have 10 to 30cm of wool at 2 years of age.



What happens after the llamas leave the farm?

The llama industry in BC is growing rapidly. The llama producers do much of the marketing of llamas. The market for llama fibre is quite diverse in BC.

What challenges do llama producers face?

It is difficult to import llamas from around the world. Hoof and mouth disease, a contagious viral disease in cattle, is virtually eliminated in North America, but still present in South America. Strict quarantine laws are in place for the import of animals from areas where this disease still exists.

Who's involved in producing llamas?

- Llama producers
- Llama outfitters
- Diversifying farm operators
- Feed producers
- Spinners/weavers

Contacts and other resources:

BC Llama and Alpaca Association





Ostrich and Emu

Interesting Facts

Ostrich is a low-fat, low cholesterol red meat similar in taste to beef. A full grown male ostrich can easily reach heights exceeding 2.4m (8 feet) and weigh in excess of 135kg (300 lbs). Emu adult females boom like a drum and males grunt. In the wild the male emu sits on the eggs and raises the chicks.

What are ostrich and emu?

Ostrich and emu are both large, swift-running, flightless birds. Ostrich are native to Africa and emu come from Australia. Ostrich are 2.5m tall, weigh 160 to 200kg and can run 65km/h. Adult emu stands 1.8m and weighs 70kg.

Where are ostrich and emu produced in BC?

Ostrich and emu farms in BC are in the Okanagan Valley, the Lower Mainland and on Vancouver Island.

How much ostrich and emu do we produce?

Production is low, as this is a new enterprise. In Canada, ostrich and emu are raised for therapeutic oil, leather and meat. Secondary products are feathers and eggs. An average emu can yield approximately 14kg of meat and 6 to 10 litres of oil. The fat on the bird is stored in a pad on it's back which is rendered into oil. The meat itself is very low in fat and high in iron. Hides are shipped to the United States. Secondary products are feathers and eggs.

How are ostrich and emu produced?

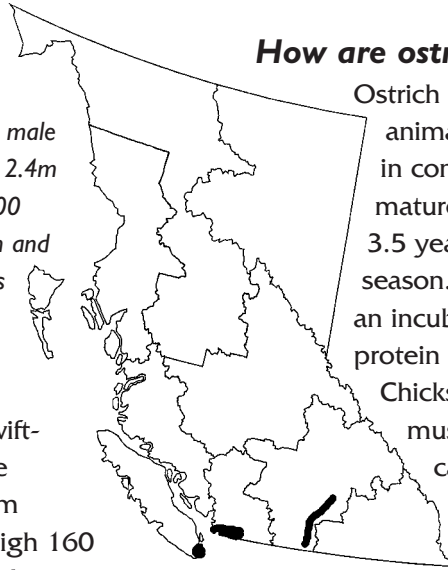
Ostrich and emu are both specialty livestock animals. They can, however, be raised in conventional barns. An ostrich hen is mature at 2.5 years and a male at 3 to 3.5 years. A hen will lay about 50 eggs a season. It takes 42 days to hatch an egg in an incubator. Young ostrich are fed a high-protein feed. They can grow 30cm a month. Chicks are susceptible to pneumonia and must be kept warm, fed and dry. Birds can live up to 70 years and produce eggs for 40 of those years.

Hens lay the eggs while the male makes the nest, incubates the eggs and raises the chicks after they hatch. Each egg weighs about 700g and are dark green in colour with a pebbled surface. By comparison, a large chicken egg weighs about 56g. Eggs are incubated for 48 to 54 days.

Each ostrich requires 0.12ha of relatively flat land. The area needs to be flat to minimize the risk of the birds tripping and injuring themselves.

These birds will eat anything shiny, like nails or buttons on clothing. Fencing should be made with a woven wire, approximately 1.6m high. Adults are capable of protecting themselves from coyotes or stray dogs by executing a strong forward kick.

Ostrich can eat approximately 3kg of feed per day. Their feed is one-half chopped alfalfa and one-half grain. Where pasture lands permit, ostrich are grazed as well.



How are ostrich and emu used?

Ostrich meat is eaten in upscale restaurants and is exported to Europe, where it is considered a delicacy. Ostrich feathers are used in feather dusters and as decorations on hats. Ostrich hides can be sold either raw (green) or tanned and are used for shoes, clothing, handbags and luggage. Ostrich eggs are decorated by artists as collectibles. Emu oil, from the thick layer of fat on the back of the emu, is used for skin care products.

What happens to the ostrich or emu after it leaves the farm?

Ostrich and emu are sold to other farms as breeding animals, but as the breeder market is limited most are sold for meat and hides. Ostrich and emu meat is sold through restaurants and retailers. Emu oil is sold for cosmetics and rubbing oils. Feather sales are quite profitable in some regions.

What challenges do ostrich and emu producers face?

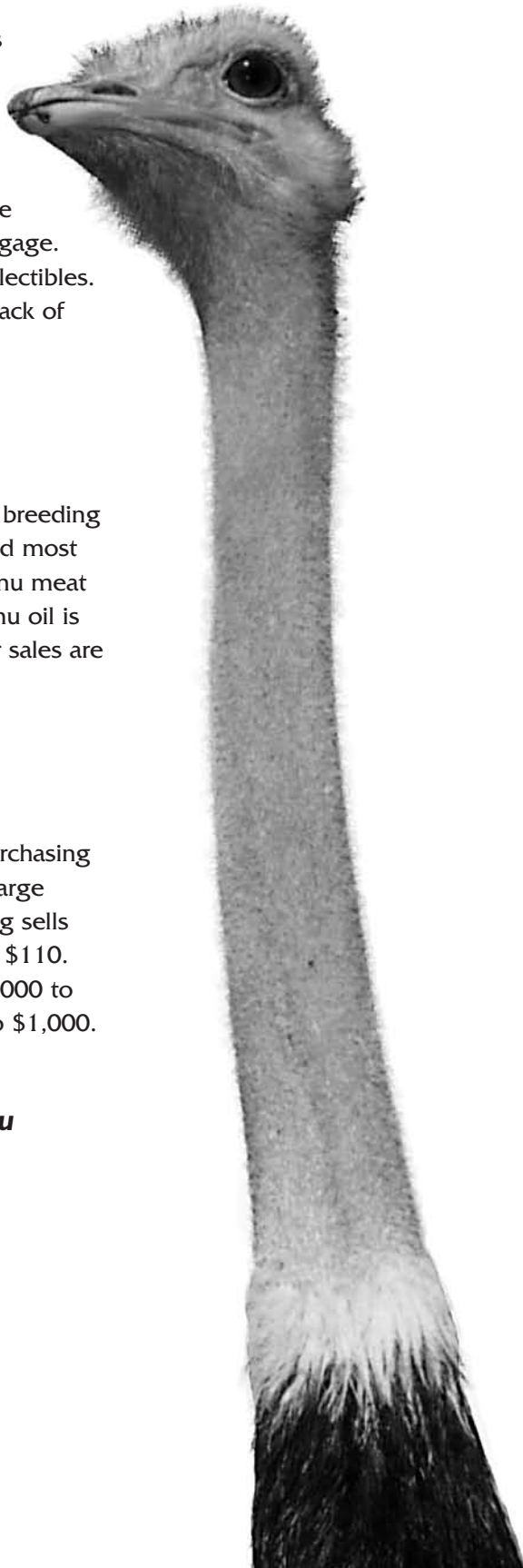
There are very few ostrich in Canada, so purchasing breeding stock can be quite expensive. A large initial investment is required. An ostrich egg sells for \$20 and a day old chick sells for \$50 to \$110. An adult proven-breeding pair can cost \$1,000 to \$5,000. Emu pairs currently sell for \$500 to \$1,000.

Who are the stakeholders in ostrich and emu production?

- Ostrich and emu producers
- Feed suppliers
- Equipment suppliers
- Veterinarians

Contacts and other resources:

BC Ministry of Agriculture and Lands
Canadian Ostrich Association





Reindeer

Interesting Facts

A male reindeer or bull can lose up to 15 to 20% of its body weight during the mating season when it will eat very little.

What are reindeer?

Reindeer are mammals that usually live from 10 to 15 years. On average, adult bucks measure 180cm long, stand 110cm at the shoulder and weigh 81 to 153kg. Average adult cows are 166cm long, stand 104cm at the shoulder, and weigh 63 to 94kg. A mature pelt is 4 to 5cm thick and has a throat fringe, which is most developed during the fall in larger bulls.

Common colours are gray with some brown and a dash of yellow. Domestic reindeer tend to be more “salt and pepper” coloured. Colour variation ranges from white to black or dark brown. Most calves are born black to brownish-red and later develop their adult colouring. White calves remain white throughout their lives.

Both males and females have antlers that mature quickly. The period from prime to calcification can be as little as four days. Bull velvet is prime starting in May; cow velvet is prime by June. Velvet is removed before it palmates (the tip flattens out).

Where are reindeer produced in BC?

The majority of the reindeer farms in BC are located in the Peace River North East area. There are about 8 reindeer farms in the province. These reindeer are recognized as being among the healthiest in the world.

How many reindeer do we produce?

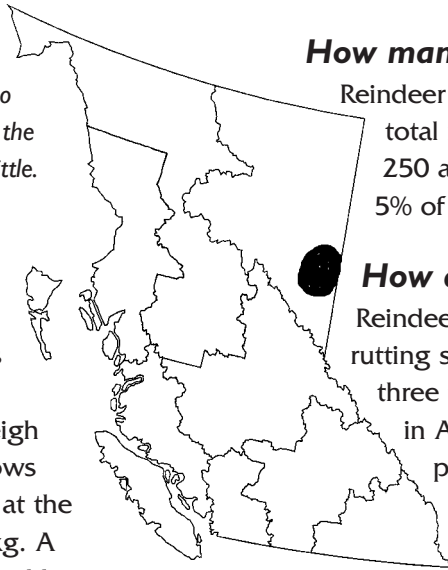
Reindeer farming is in its infancy stage in BC. The total inventory count for BC is approximately 250 animals. Reindeer game farms constitute 5% of the game farming industry in BC.

How are reindeer produced?

Reindeer are seasonal breeders. Their natural rutting season is September to October, lasting three to four weeks. Fawning generally occurs in April and May after a 7 month gestation period.

Reindeer start breeding around 1.5 years of age and remain fertile up to 10 years or more. Bulls tend to separate into smaller herds to forage. They return to the main herd in preparation for the rut. Prior to the rut, they rub the velvet from their antlers, their necks thicken, their bellies draw in and they grow manes. They do not eat much during the rut and as a result become dull and skinny. The highest sexual activity of a bull lasts only 10 to 22 days. Total rut period is 25 to 30 days.

The onset of heat depends on the condition of the cow. Well-nourished, content cows will come into



heat early, while weak, starved and underdeveloped cows won't come into heat at all. A reindeer cow's heat is less obvious than that of other farm animals. Each heat lasts 12 to 24 hours and if the cow isn't impregnated during the first cycle, the heat will return after 11 to 20 days and another breeding can take place.

A cow becomes restless in the 24 hours before calving occurs. She will leave the herd and hide, looking for a protected place out of the wind. The birth can take a few minutes to a 1/2 hour. The cow will lick the calf dry.

How is reindeer used?

Final products include venison (meat) and antlers. Game-farmed venison has been proven to have a lower fat and cholesterol content than most red meat. Antler velvet and shavings are exported to various countries, primarily in Asia.

What happens after the reindeer leave the farm?

Reindeer are transported to processing facilities where they are slaughtered and processed. The product is distributed by various means to retail stores, restaurants and novelty shops. There are few established markets willing to take reindeer. Individual producers are often involved in marketing. There is also a market for live animals in the United States, Alberta, Saskatchewan and Quebec.

What challenges do reindeer producers face?

In BC, the challenge is to develop a local market. Reindeer growers are considering ways to get their product to the public.

Who's involved in producing reindeer?

- Game farmers
- Crafters
- Antler buyers/sellers
- Slaughterhouses
- Transporters/truckers
- Meat packers
- Butchers
- Restaurant chefs

Contacts and other resources:

BC Ministry of Agriculture and Lands



Sheep

Interesting Facts

Sheep are ruminant animals that have several stomachs and chew their cud. This method of digestion was essential in the early stages of evolution. Being able to eat grass without chewing well, sheep could graze quickly and get out of sight of predators. The “cuds” of grass are brought up from the first stomach and chewed. The chewed cud then passes through the other three stomachs to finish being digested. There are over 200 sheep breeds worldwide. Ewes can have single lambs, twins, triplets or sometimes even more. Meat from sheep is the most commonly eaten meat in the entire world.

What are sheep?

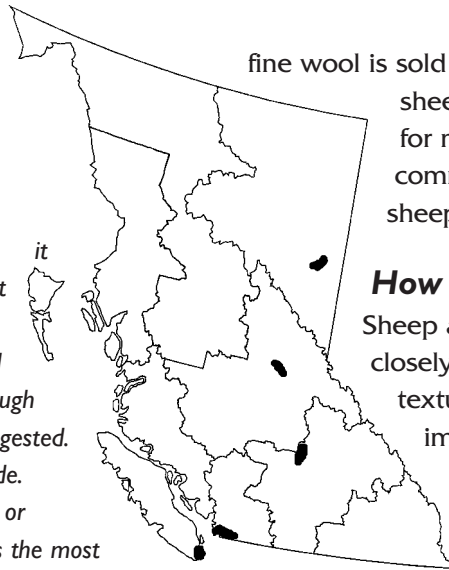
Sheep are mammals. Temperate breeds have a woolly coat and some breeds from the tropics have a hairy coat like cattle—they are called hair sheep. Sheep are kept in flocks and raised for meat, wool or milk. They are ruminants, which means that like cattle and goats, they chew their cud. Adult female sheep are called ewes, adult males are called rams, and young sheep are called lambs.

Where are sheep produced in BC?

There are about 60,000 sheep and lambs in BC. 39% of the sheep are raised on Vancouver Island and the Mainland-South Coast, 26% in the Thompson-Okanagan region, 15% in the Cariboo-Central region, 10% in the Peace River North East region and the remainder throughout the province.

How many sheep do we produce?

BC produces about 85 tonnes of shorn wool annually. Coarse wool is sold to countries in Europe;



fine wool is sold to Japan. There are about 45,000 sheep and lambs slaughtered each year for meat. In BC, sheep's milk is a minor commodity. There are about 20 different sheep breeds in BC.

How are sheep produced?

Sheep and lambs are able to graze more closely than cattle on short grasses, fine textured plants and various shrubs. It is important to protect grazing sheep from predators such as coyotes or roving dogs.

Sheep can be raised on a small piece of land. One-half hectare of pasture can support 6 to 8 ewes in areas that are good for pasture growth. For this reason, many producers farm on a small, part-time scale. Sheep need to be well fed before and during breeding to ensure a good conception rate and a high incidence of twins. Besides grass or hay, ewes need a supplement of barley, protein concentrate and minerals. Breeding usually occurs in the fall. Ewes are first bred as yearlings. Gestation is between 142-154 days (or 5 months) depending on breed, so lambs are born in early spring. While most ewes are bred once per year, there are some breeds, like Dorsets or some hair breeds, that produce a 3-lamb crop over a 2-year period. Ideal market weight is 45 to 50kg. Some spring lambs are marketed at 20 to 25kg.

Typically, sheep are shorn for their wool once a year, although there are some breeds that can be shorn twice a year, usually in the late winter or early spring. Sheep grow another fleece of wool by the fall, when it is needed to keep the animal warm. Sheep can withstand severe cold with their full fleece.

How are sheep used?

Lamb is eaten as fresh meat. Lamb chops, ribs, or rack of lamb are all popular cuts. Mutton, which is the meat from mature sheep, is not as tender as lamb. It is often used as filler in sausages.

Sheep wool is spun and is used in clothing such as sweaters, mitts and suits. The average weight of wool from a mature meat sheep is about 2.3kg, and from a wool breed, about 5kg. The wool is used for a huge variety of products, from carpeting to the finest cloth for suits. Wool is also used for airplane seats and hotel carpet, as it is fire resistant. Other by-products include soap, candles and lanolin for hand cream. Hides are used as throw rugs. There is a specialty market for different colours of natural wool. Sheep wool can be blond, red, beige, brown, silver, black, cream or gray. This wool is often used



for weaving and by fibre-industry artists. Sheep milk is used for yogurt and for cheeses such as roquefort, feta or ricotta.

A relatively new development in BC is the use of sheep for weed control in replanted forest clearcuts. Large flocks are needed for this, so many sheep are transported from Alberta to do the job.

What happens after the sheep leave the farm?

Fresh lamb is slaughtered, butchered and packaged for sale. Wool fleece is collected on farms and marketed through the Canadian Cooperative Wool Growers. BC fleece is sent to the Gulf Island Spinning Mill located on Salt Spring Island or to a similar processing plant in Lethbridge, Alberta. Some custom carding of wool is carried out at Monashee Woolen Mills in Cherryville, BC.

What challenges do sheep producers face?

BC produces only 15% of its lamb requirement, the rest is imported mainly from Australia and New Zealand. There is an opportunity to replace this imported meat with locally grown production. The Canadian sheep industry has to develop ways of lowering production costs and becoming more efficient. The BC Sheep Federation has been working on improving the marketing of BC lamb through education and promotions.

Who's involved in the sheep industry?

- Lamb farmers
- Processors and meat cutters
- Shearers
- Weavers
- Spinners
- Cheesemakers
- Meat inspectors
- Retailers
- Veterinarians
- Animal nutritionists

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Purebred Sheep Breeders Association



Turkeys

Interesting Facts

An average turkey farm in BC produces 47,000 turkeys every year.

What are turkeys?

Turkeys are large domesticated birds with white plumage. The male turkey is called a tom, the female turkey is called a hen and the young are called poults.

Where are turkeys produced in BC?

While turkeys are grown throughout BC in small flocks, commercial production is largely concentrated in the Fraser Valley. The only turkey breeder operation in BC is located in the central Fraser Valley.

How many turkeys do we produce?

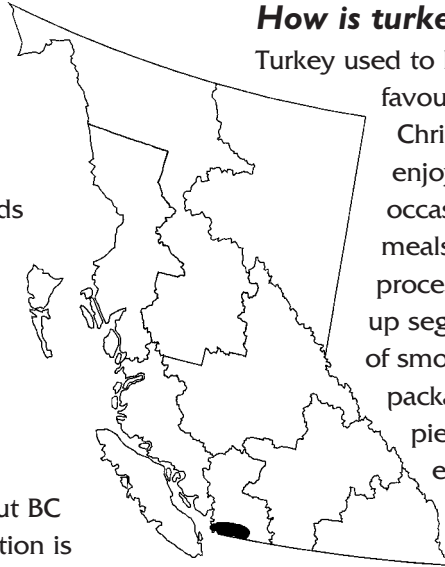
BC's 60 turkey producers raise about 24 million kilograms of turkey annually, or about 2.8 million turkeys per year.

How are turkeys produced?

Hens are artificially inseminated to produce fertilized eggs. The eggs are incubated for 26 days then moved to a hatcher for 2 days where they hatch. They are sold to producers as day-old poults and shipped to farms in temperature-controlled trucks. In the barn they are placed on litter made up of wood shavings. At a day old, they weigh 65g. Tom turkeys are grown to 13.4kg by 16 weeks while hens are grown to 8kg by 13 to 13.5 weeks. Some turkeys are sold at 5.5kg at 11 weeks. These are known as broiler turkeys. Tom turkeys require 2.3kg of feed per kilogram of weight gain.

How is turkey used?

Turkey used to be consumed largely as a seasonal favourite at Easter, Thanksgiving and Christmas. Today, not only do people enjoy the whole turkey on these occasions, but year-round for everyday meals. Turkey is now offered in further processed products such as fresh cut up segments as well as many varieties of smoked deli meats and convenience packaged frozen products such as meat pies, schnitzel, burgers, cordon blue etc. These new further processed products have resulted in a more even distribution of demand for turkey throughout the year, so that turkey is becoming less of a seasonal commodity. Turkey meat is low in cholesterol and fat.



What happens after the turkey leaves the farm?

When turkeys are ready for market they are trucked to a primary processing plant. Once processed they are packaged or sent to be further processed into turkey products. Federal inspectors inspect each bird that moves through the processing plant to ensure it is safe for human consumption. The turkey products are then sent to retail outlets, hotels or restaurants. Some are shipped to institutions such as old age homes and hospitals.

What challenges do turkey producers face?

Keeping a healthy and disease free environment for turkeys is a challenge that is becoming more and more important.

Due to better breeding and a higher degree of

nutrition turkeys grow much faster than they did in the past. Today's farmer must make sure that bedding, feed, water and air quality are all managed properly to accommodate the large numbers of fast growing turkeys.

As a farm's production increases to meet greater demand, bio security issues also increase. A farm safety program must be implemented to:

- control salmonella and other pathogens
- ensure that turkeys grown in BC/Canada meet or surpass the standards of international competitors
- to ensure that, when marketed, turkeys are free of residues that may adversely affect food safety and the consuming public.

Turkey products in BC are always in competition with other meat products such as beef, chicken or pork. While turkey is a healthy protein source it must be priced competitively or consumers may choose a less expensive alternative.

BC turkey is almost all grown in the Fraser Valley and the pressures from having "urban and country" so close together are more challenging now than ever before. Dust or smells that are a accepted part of farm life are not always appreciated in the neighbouring subdivisions.

Who's involved in producing turkeys?

- Turkey breeders
- Hatcheries
- Turkey producers
- Equipment suppliers
- Feed company nutritionists
- Field workers
- Turkey-hauling companies
- Processing and further-processing companies
- Retail groceries
- Hotels and restaurants
- Pharmaceutical companies
- Provincial animal health veterinarians
- Federal government inspectors
- BC Avian Monitoring Laboratory

Contacts and other resources:

BC Ministry of Agriculture and Lands
BC Turkey Marketing Board
BC Turkey Association



Nutritional Facts

One 90-gram (3 ounce) serving of skinless, roasted turkey breast contains only 3 grams of fat and provides 141 calories. Equal amounts of dark meat contain 6 grams of fat and 168 calories. Turkey is an excellent source of protein providing the essential amino acids necessary for the renewal and maintenance of body tissues and providing food energy. Turkey is an excellent source of niacin, a factor in the maintenance of good health. Turkey is a good source of phosphorus, a factor in the normal development of bones and teeth.



Veal

Interesting Facts

Meat from young animals tends to be lighter in colour and have a more delicate flavour than meat from older animals. This explains veal's characteristic flavour and colour.

What is veal?

Veal is the meat of calves raised to about 6 months of age. Many of the calves raised for veal are bull calves from dairy herds. Each milk cow must have a calf to continue producing milk. Heifer calves are virtually all raised as replacement stock to become milking cows in dairy herds.

Where is veal produced in BC?

Veal is produced across the province, with a concentration in the Lower Mainland.

How much veal do we produce?

Very few veal calves are processed in BC.

How is veal produced?

Veal calves are raised in bright, comfortable barns to ensure optimal calf growth. The calves are fed colostrum milk from their mothers for the first day or two of life, and then a milk replacement diet until they are about 6 weeks of age. Milk replacement is a balanced formula specific to the needs of young, growing calves. During this time, the calves are usually raised in individual stalls to minimized disease exposure and to ensure that they receive adequate nutrition. At about 6 weeks, the calves are weaned on to a diet of mixed grains (soya, corn, barley, etc.) and roughage. They are placed in larger pens with other animals of similar size where there

is continual access to feed and water. Veal calves are marketed at about 6 months of age or when they are about 110kg.

How is veal used?

Veal meat dishes include veal cutlets, veal parmesan and wiener schnitzel. Because of its tenderness, low fat content and ease of digestion, it is an important meat in the diet of many people, including the elderly.

Certain ethnic groups, such as Italians and Germans, often include veal dishes in their diets.

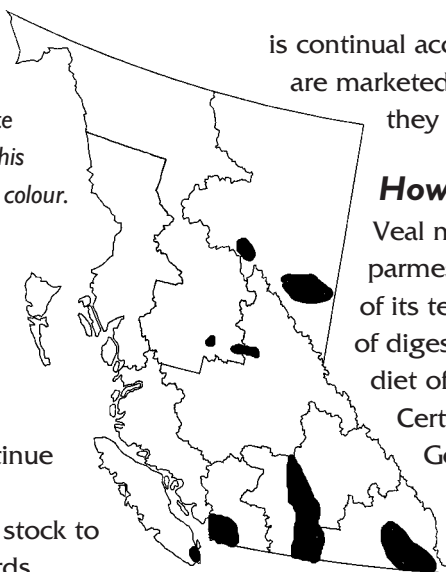
What happens after veal calves leave the farm?

Veal calves are transported to a federally or provincially-inspected plant for processing. The meat is chilled before it is cut up and sold to retail outlets or restaurants.

What challenges do veal producers face?

The veal industry in BC faces marketing challenges related to animal welfare concerns. This impression is based on a series of information campaigns that depict the conditions in which some calves in the United States are raised. BC veal producers are answering that challenge by ensuring that BC calves are raised in humane conditions, provided with a grain fed diet, and have access to all necessary minerals and vitamins.

BC veal producers grow veal calves according to standards developed by Canadian animal scientists and the Canadian Federation of Humane Societies.



Who's involved in the veal industry?

- Dairy farmers
- Veal producers
- Truckers/transporters
- Meat inspectors
- Slaughterhouse workers
- Butchers

- Supermarket clerks
- Restaurant chefs

Contacts and other resources:

BC Ministry of Agriculture and Lands

