

# Livestock on small farms



Agriculture  
Canada

Publication 1381/E



630.4  
C212  
P 1381  
1985  
c. 3

Canada

## CONTENTS

Small farm situation and income /3

Before you start ... /3

Marketing boards /3

Dairy cows /3

Dairy goats /6

Sheep /7

Hogs /8

Rabbits /9

Chickens /11

Turkeys /13

Geese /14

Ducks /14

Squabs /15

Bees /15

Horses /17

Control of small mammals /18

Sources of information /20

**PUBLICATION 1381/E**, available from  
Communications Branch, Agriculture Canada,  
Ottawa K1A 0C7

©Minister of Supply and Services Canada 1985  
Cat. No. A63-1381/1985E ISBN: 0-662-13637-3  
Printed 1972 Revised 1985 15M-5:85

Également disponible en français sous le titre  
*L'élevage sur les petites fermes.*

# Livestock on small farms

## Small farm situation and income

A small farm is a rural holding where most of the operator's income derives from a source other than agriculture. It is usually occupied by a semiretired person, part-time operator or hobbyist. According to the 1981 Census of Agriculture, there were 318 000 farms in Canada. Of these, 16 400 had only about 3.5 ha of land (5%), and 46 700 gave annual incomes of only \$250-\$2500. Farms giving incomes of less than \$26 000 produced only 4.5% of our total farm product sales.

Families engaged in small-scale or part-time farming usually want to raise some livestock for food or added income. Livestock for small farms can include a dairy cow, a pig or two, a few chickens, turkeys, ducks, geese, squabs, dairy goats, horses, sheep, rabbits and even a few colonies of bees.

Small farms and/or part-time farmers make a positive contribution to society by preserving land for agriculture and by producing food and agricultural commodities.

## Before you start ...

Before you start buying livestock, make an inventory of your property: land area, buildings, fences and equipment. Decide whether you are going to grow some of your livestock feed or buy all of it. You will cut feeding costs considerably by growing your own hay or grain, but unless you already own some farm machinery it may be better to hire someone to do the work. Remember, also, that livestock must be fed and watered every day of the year. This will restrict family outings and vacations unless you hire a responsible person. Finally, don't expect to make or save money by small-scale farming. It is a way of life — admittedly a fascinating and enjoyable one — but seldom profitable.

If you plan to produce above self-sufficiency, inquire about the tax system, the technology available and the marketing boards.

## Marketing boards

Make contact with the relevant organizations if you plan to sell a product that comes under a provincial marketing board.

For instance, four agencies established under federal legislation now operate national marketing plans for industrial milk, eggs, turkeys and chickens, in conjunction with provincial boards.

## Dairy cows

A good cow, well fed and cared for, will produce enough milk to more than pay for her feed even if it is all purchased. She will produce about 4500 kg of milk

each year, more than enough for the average-size family. Surplus milk and cream can be used to make cheese or butter.

A small-scale farmer should consider keeping a cow if sufficient pasture and hay are available; a comfortable and sanitary shelter can be provided; someone is able and willing to feed, water and milk her every day; the milk can be used in the home to full advantage; breeding service is obtainable locally; and fences are present and in good repair.

## Buying a cow

The most popular cows for small farms are Jerseys and Guernseys. They are smaller, require less feed and give milk with a higher percentage of butterfat than other breeds such as Ayrshire, or Holstein-Friesian.

A 4- to 5-year-old cow that has had her second or third calf is often a good choice. She will be young enough to have future productive years and old enough to have demonstrated her milk-producing and reproductive potentials.

The cow you select should be sound and healthy, easy to milk, gentle and free of bad habits. Examine the udder, which should be soft and flexible, and free from lumps or hardened tissues; avoid cows with meaty udders that do not shrink after milking. Also, she should have four evenly positioned teats of uniform size. Try milking her by hand and examine the milk for clots, flakes, stringiness or blood by using a "strip cup".

Finally, be sure that the cow you select is free from tuberculosis, brucellosis, leptospirosis and other diseases. Obtain a certificate from a local veterinarian.

## Feeding

A cow eats 9-11 kg of hay a day, or 3-3.5 t a year, if no pasture is available. In addition, she needs 1-1.25 t of concentrate-grain mix. For bedding, a cow will use 500-700 kg of straw.

If some of the feed can be grown on the farm, the cost of keeping a cow will be much less. Generally, 1 ha of pasture will provide most of her feed during 5 months of the year. A permanent pasture of grass and clover (such as timothy, red clover, and alsike or brome grass and alfalfa) should be supplemented with a block of salt and a good supply of water. Other suitable grasses are orchardgrass and reed canarygrass. For maximum use of available pasture during the summer, practice rotational grazing and fertilize every year.

For winter feed, get the best hay possible. Give the milking cow all the hay she will eat without waste, and about 3 kg of grain mixture containing supplements (minerals and vitamins).

## Housing

The shelter or stable for the family cow need not be very large or elaborate, but should be ventilated, free of drafts, and let the sun shine in.

The cow may be left untied in a box stall of about 3 × 3 m or confined to a smaller area and held with a stanchion, chain, or rope. If she is confined to a narrow stall, give her a manger and put a water pail within easy reach.



Allow 1.2-1.5 m of space beyond the gutter and, if possible, leave enough space in front of the manger to bring in the feed rather than have to carry it in from the rear.

Always handle the cow gently and quietly. If she is confined to a stall, regular grooming is particularly important. A daily brushing will keep her clean.

## Milking

Cows are normally milked twice a day. Before milking, be sure that her udder and flanks are clean; always wash them with a warm sanitizing solution and dry with a paper towel. Milk the first stream or two from each quarter into a strip cup to check for abnormal milk. Use a pail with a small top and milk the cow quickly and completely.

Strain the milk through a clean cloth immediately after milking. Single-use strainer cloths are best. Pasteurize all raw milk by heating it to 63°C for 30 minutes.

After the milk is pasteurized, cool it as rapidly as possible to below 10°C — preferably to 4°C or slightly lower. Remember that milk is a highly perishable food, which must be handled in a clean and sanitary manner to prevent contamination and spoilage.

## Breeding

Cows are usually bred to calve at 12-month intervals. Consult your local agricultural representative about breeding service in your area. Instead of taking your cow to a neighbor's bull, you may wish to take advantage of commercial artificial insemination services to obtain the best possible sire.

Usually, farmers dry a cow up a month or two before calving. The rest period is necessary to regenerate mammary tissues and build up her reserves of calcium, phosphorus and other nutrients. To dry her off fairly abruptly — usually within a week — reduce water and grain intake for 3-4 days, then miss a milking before stopping altogether. Once she is dry, return her to the regular feeding program. Cows that have been dried produce a higher volume of milk after giving birth than if they are milked continuously to calving time.

Cows seldom have much difficulty calving, but if labor is prolonged, call a veterinarian. Let the cow lick the newborn calf dry and keep them both in a well-bedded, heated pen. If the placenta is not expelled within 24 hours after calving, consult your veterinarian.

Shortly after birth, the calf will try to feed. Before letting it do so, clean the cow's udder with a sanitizing solution. It is important that the calf receive the first milk, or colostrum, as it is rich in vitamins and antibodies and is necessary to build up resistance to diseases. Remove the calf from its mother within 12 hours after birth and place it in a disinfected, well-bedded pen. An overhead heat lamp, aimed at one corner of the stall, can be used to keep it warm. Let the calf feed three times a day during the first 3 days; after that twice a day is sufficient.

After 3 days on colostrum the young calf can be pail-fed either with commercial milk replacer or warm whole milk. When 2 weeks old, it can be introduced to calf starter meal, good quality green hay and ample fresh water.

Calves can be sold when less than a week old but the returns are rather small.

You may find it more profitable to keep a calf for 3 or 4 months, especially if your family does not need all the milk produced by the freshened cow.

## Dairy goats

Goats are raised for milk, cheese and meat. Part-time farmers on small holdings may find dairy goats more convenient and economical than cows. Their milk is good, wholesome and nutritious, particularly for infants and invalids, since its minute fat globules are easy to digest. Also, persons allergic to cow's milk can often tolerate goat's milk.

A good dairy goat can produce about 2-3 L of milk daily, with a 4% fat content, for 8-10 months, and can be fed for about a sixth of the cost of feeding a cow.

The Saanen and Toggenburg breeds seem to be the most popular. However, in some regions Nubians and Alpines are favored; others such as La Mancha and Angora can also be found.

## Feeding

In general, feeds for dairy cows are suitable for goats. A goat needs about 1 kg of clover, alfalfa or mixed hay daily. It will also appreciate about 500 g of corn silage or root crops, such as turnips, carrots, beets or parsnips, and about 1 kg of concentrates made up of 50 kg oats, 22 kg wheat bran and 5 kg oilcake or other protein supplement. Keep rock salt (cobalt-iodine) before the goat at all times and see that the animal has plenty of fresh water.

Goats love to browse the bark, buds and leaves of trees and bushes and, as a result, have ruined many hedges or ornamental shrubs. For this reason, they are usually tethered on a 6 m chain attached to a stake or peg.

## Housing

Goats need shelter and housing to protect them from rain, snow and cold. The shelter should be free of drafts, well insulated and properly ventilated. A building the size of a car garage can house four to six goats and a 2 × 3 m lean-to can shelter two, or possibly three.

Dairy goats can be kept tethered in stalls, confined to small pens or left free in loose housing. Stalls should have a 60 × 75 cm manger and a watering system. Bedding material for loose housing or pens can be dry leaves, cut straw, wood shavings or sawdust.

## Milking

As cleanliness is essential in keeping dairy goats, a small milking parlor offers a number of advantages. A raised milking stand about 60-75 cm high with stanchion and a manger at one end is a real convenience.

A high-producing doe may need to be milked three times a day for the first month or two after giving birth but twice a day is normal. Before milking, wash the

udders with a warm sanitizing solution and dry with a clean cloth or paper towel. Goats can be milked from the side or from the rear. However, complete milking is essential for continued high production.

The milk should be filtered, pasteurized and chilled as described in the section on dairy cows. Surplus milk can be processed into butter or cheese in the same way as cow's milk.

Keep bucks away from the does at all times to avoid tainting the milk.

## Breeding

Does should be bred only at 18 months of age or older. They usually come into heat 1 or 2 days every 3 weeks between August and the following March. Does are generally mated in late fall so that they will kid 5 months later in early spring. They normally give birth to two kids but sometimes have three or even four.

If your family needs the milk, you will probably want to dispose of the kids, particularly if they are from non-registered stock. However, kids are not hard to raise. Feed them their mother's milk from a bottle with nipple (or from a pail) from the very first day; if you leave them with the mother for 3 or 4 days, it will be very difficult to get them to feed later from the bottle. For the first week, give them each a full baby-bottle of milk every 3 or 4 hours, gradually decreasing the number of feedings and increasing the amount. After 3 weeks, feed calf meal or oatmeal, and dilute the milk gradually with water. Kids are usually weaned when 7-8 weeks old. If they are to be raised for meat, feed them surplus milk continuously and have bucks castrated at 2 or 3 weeks of age.

## Sheep

A small flock of sheep can be profitable to operators of small farms if there are good fences and sufficient pasture. About 1 ha of good pasture will feed five or six ewes and their lambs during the summer. Additional land is required to produce winter feed. All pastures must be enclosed by a dog-proof, woven-wire fence topped with a strand or two of barbed wire. Recent developments in electric fencing have proven to be a very effective alternative to traditional fencing, while at the same time providing a degree of flexibility.

Sheep production does not require much labor, expensive shelter or equipment. An open-front shed is usually adequate as protection against rain or snow. However, at lambing time, a small enclosed shelter with pens and provision for heat is desirable.

There are almost 20 different breeds of sheep available to Canadian farmers. The most popular are Dorset, Suffolk, North Country Cheviot, Hampshire and Leicester. However, fine wool sheep such as Rambouillet, Romnelet and the dual-purpose Corriedale are gaining in favor. A beginner will probably find the last two satisfactory for small farming.

## Feeding

Sheep on good pastures seldom need grain. For maximum benefit and control of internal parasites, rotate sheep on three different pastures during the summer.



Avoid overgrazing and undergrazing.

In winter, sheep require 1.5-2 kg of good quality alfalfa hay daily. Supplement this roughage with 250 g of grain such as oats, cracked corn or rolled barley, plus a mineral mixture. Gradually increase this to 700 g a month before lambing. Sheep also appreciate corn or grass silage, and occasionally, root vegetables if available. Keep salt and fresh water available at all times.

## Breeding

One ram is sufficient for breeding 40-50 ewes. If you start with less than 10 or 15 ewes, see if you can get service from a neighbor's ram rather than buying one.

Buy young ewes, and breed them to give birth to their first lambs at about 2 years of age (growthy ewe lambs could be bred at 1 year). The gestation period is about 145 days. Ewes normally come into heat every 16-18 days in late summer or fall, at which times they can be bred to lamb in late winter — usually in February or March.

Newborn lambs should have their tails docked within 10 days. Also, castrate male lambs within the first 2 weeks if they aren't to be used as rams.

Teach lambs to eat as soon as possible. Normally, they will nibble at feed when 2 weeks old. A small pen or creep will keep out the ewes when feeding lambs ground grains such as rolled oats, bran and calf starter. The lambs are usually weaned when 3-4 months old.

## Shearing

Mid-May to early June is the best time to shear sheep. An inexperienced owner of a small flock will probably find it best to hire a custom shearer for the job, as the fleece must be removed quickly and in one piece. The average sheep yields 3.5 kg of raw wool annually; however, because of wool grease, sweat, salts, manure, dirt and chaff, 50 to 60% shrinkage may result once it is scoured. The wool is then cleaned of debris, rolled, tied, and packed in large bags for sale to merchants. A good shepherd will make sure his 'naked' sheep do not become chilled in the days immediately following shearing.

## Hogs

Pigs can be a problem on a small holding. Local ordinances may forbid them and your family and neighbors may object to the smell. Furthermore, they may be unprofitable, especially if most of the feed must be bought. However, where surplus milk and garden produce are available, pigs can be raised economically, particularly if 0.5 ha of legume pasture can be reserved for them.

## Buying

The best time to buy pigs is in the spring after they have been weaned, that is, when they are about 8 weeks old. Choose a female (a gilt) or a male that has been castrated (a barrow), and make sure that it has been vaccinated against erysipelas.



## Feeding and management

Pigs will eat 270-320 kg of commercial hog rations from weaning until they reach 90 kg market weight. Commercial rations consist mainly of alfalfa meal, grains (barley, corn, wheat, oats) and a complete protein-vitamin-mineral supplement.

Hogs on a good legume pasture need about 10% less feed than those kept in pens. Temporary pastures of rye, oats, wheat, rape and soybean also provide nutritive feed at low cost.

Water should be available to pigs at all times and a self-watering device is recommended. Pigs must have shelter from the sun in summer and the cold in late fall and winter. A simple shed or an A-frame colony house is cheap to build and will be quite satisfactory.

## Disease control

Pigs, because of their nature, are subject to many diseases and parasites. Deworm weanlings early and keep them away from adult pigs. Rotate pasture area yearly to help avoid parasites and diseases. When disease is suspected, seek the advice of a veterinarian without delay.

## Rabbits

Rabbits are ideally suited to small farms. They need little space, and the cash outlay for stock, feed, housing and equipment is modest. Commercial rabbit production can also be attractive since the demand for meat and fur is steadily increasing.

As a beginner, you will find that four does and a buck will provide all the meat required for home use, plus a few animals for sale to neighbors. Rabbit meat is all white, fine grained, highly nutritious and very low in cholesterol. Only 20% of the dressed carcass is bone.

All rabbit skins have some market value, especially those from white rabbits because they can be dyed any color.

## Buying

Medium and heavy breeds are best suited for home or commercial meat production. The most popular are the New Zealand White, Californian, Flemish Giant and Florida White.

Buy your rabbits from a reliable breeder who guarantees the stock to be healthy and productive. Recently weaned does that are 4 months old are good buys since they will soon be ready for their first mating.

## Feeding

Rabbits can be maintained on good alfalfa hay plus a few grams of grain daily. However, many small-scale and commercial rabbitries now feed commercial pellets to their stock. Where time and labor are not the most important considera-

tions, legume hay, whole grains, root crops and green feed can be economically fed. Do not overfeed greens or root vegetables; remove any that remain after 5 or 10 minutes.

Keep rabbits supplied with fresh water at all times. Also, put out a small block of iodized or mineralized salt for rabbits fed hay and grains. Be sure that any home-grown feeds have not been exposed to chemicals, especially insecticides.

## Housing

Rabbits are kept in cages (hutches) measuring 60 cm high, 75 cm wide, and 120 cm long. Smaller hutches measuring  $45 \times 60 \times 90$  cm have also been used successfully. In either case, the floor should be self-cleaning, that is, of 14-gauge wire screening with a  $2.5 \times 1.25$  cm mesh. Use 16-gauge screening with a  $2.5 \times 2.5$  cm wire mesh for the sides and a  $2.5 \times 5$  cm mesh for the top. For good sanitation and air circulation, support the hutches about 1 m off the ground.

A wooden nest box 30 cm deep by 30 cm wide by 45 cm long with a removable top and a 15 cm front opening can easily be built to fit inside the hutch. In winter, insulate the box to keep the rabbits warm.

## Breeding

Early morning or late evening are the best times for mating. Always take the doe to the buck's hutch for breeding and return her immediately afterwards to her own cage. Otherwise, the two may fight and do considerable injury to each other. Carry her back with her vagina upward, to retain the semen.

The rabbit's gestation period is only 30-33 days and a good doe will raise six to eight young in a litter. Palpate her abdomen at 12-14 days to determine pregnancy; this skill is perfected only with experience. When the young are 5 or 6 weeks old, the doe can be bred again. This schedule will produce four to six litters per year (about 34-45 kg of meat a year from each doe). Recent advances in nutrition and management indicate that eight litters are possible each year if the does are bred within 15 days of kindling (giving birth).

A few days before the young are due, place a nest box two-thirds full of straw in the hutch. The doe will arrange the straw to form a nest and will line it with fur plucked from her body.

On the day following kindling, entice the mother away with food and quickly inspect the litter to remove any dead or deformed young. Do not leave more than seven or eight young with the doe. The doe's milk production reaches its peak by the third week and then declines.

At about 3 weeks old, the young rabbits come out of the nest box and begin to take solid food. When they weigh about 2 kg (at 8-10 weeks of age), they can be sold as fryers.

## Disease control

Rabbits are subject to many diseases, parasites and ailments. The most common are coccidiosis, snuffles, colds and pneumonia, enteritis, peritonitis, septicemia, eye problems, venereal disease, ear mange and worms.

Sanitation is very important to prevent and control diseases. Wash and dry all

feed and water dishes regularly. Remove manure and all excess or surplus feed daily, and dispose of it. At least twice a year, disinfect hutches and nest boxes. Good ventilation is important for disease control but avoid drafts, sudden temperature changes and dampness or condensation.

## Chickens

Operators of small farms can easily care for a small flock of chickens that will give them both eggs and meat.

### Buying

Several breeds are suitable for small farms. If egg production is your chief aim, select White Leghorns, as they are very prolific layers. If you want both eggs and meat, dual-purpose breeds are better; Plymouth Rock, New Hampshire, Rhode Island Red, Light Sussex and their crosses are excellent choices.

You can buy day-old chicks from a hatchery or pullets from a reliable breeder or poultryman. Day-old chicks require special equipment and a heated brooder house, and because the operator needs considerable experience, are not really suited to beginners. However, if you decide to go this route, allow for losses from disease, misadventure and accidental death by ordering 50 chicks. On the other hand, 3 dozen pullets will provide about the same number of laying birds and are much easier to raise.

### Feeding

On arrival, place newly hatched chicks in a preheated brooder house. Immediately provide them with a starting mash in chick feeders, and plenty of water in drinking fountains. Allow 2.5 cm of space for each chick at feeders and 1.25 cm at fountains. As the birds grow, increase the feeding and drinking space.

Until the chicks are 4-6 weeks old, starting mash is the usual diet, mixed with finely cracked corn or some fine grit.

When the chicks are 6-8 weeks old, gradually replace the starting mash with an all-mash growing ration, or a combination of growing mash and cracked grain. At about 15 weeks of age, gradually start feeding the birds equal parts of mash and grain. Always include grit when the diet contains whole grain.

Grains fed to poultry include wheat, oats, barley and corn. Most poultrymen now use commercially prepared feeds because quality and nutritional values are carefully controlled. If you want to mix your own feed using home-grown grains, get formulas and directions from your local agricultural representative or nearest agricultural college.

Chicks can be put on range as early as 6 weeks of age. Make sure that there are no predators about, such as hawks, owls, coyotes, foxes, skunks or rats.

When the pullets are 20-22 weeks old, gradually change the ration to an all-mash laying diet.



## Housing

For newly hatched chicks you need a well-built, draft-free brooder house that allows 0.1 m<sup>2</sup> of floor space per chick. It should be equipped with an electric brooder regulated by thermostat, feeders and watering founts. An enclosure ring of cardboard, hardware cloth or chick netting must be placed about 45 cm from the heat reflector shield. This will keep the chicks from piling up in dark, cold corners. Gradually increase the ring diameter and remove it entirely after the first 20 days.

Always make sure of adequate ventilation, particularly if a gas or wood heater is used as a brooder. Instead of electric, gas, or wood-burning brooders, infrared heat lamps can be used to keep the young birds warm and dry.

You can avoid the expense and care of housing day-old chicks by purchasing older or started chicks. These may be raised in any building that permits easy management, provides ample ventilation in hot weather and keeps them dry, warm and free from drafts. The building can be inexpensive but must allow 0.3-0.4 m<sup>2</sup> of floor space per bird.

When the chicks are 3-4 weeks old, set up narrow 2.5 × 5 cm strips of wood for roosts. Place these 15 cm off the floor at first, then gradually raise them to about 60 or 90 cm. Put 2.5 cm mesh wire under and around the roosts so that the chicks or pullets can't get into the droppings. Clean the droppings pit frequently or sprinkle with hydrated lime.

Cover the floor of the chicken coop with 15-20 cm of absorbent litter (cut straw, wood shavings or ground corn cobs) for the chickens to scratch into. Replace the litter whenever it gets damp as it can be a source of diseases and parasites.

When the birds are about 5-6 months old, give every four or five hens a nest in a convenient part of the chicken house. Gather the eggs twice daily, clean immediately and cool to about 10°C.

Many poultrymen keep laying hens confined to the laying house at all times. Artificial lights with an automatic timer lengthen daylight hours in the fall and winter to stimulate egg production.

## Disease control

Many diseases and parasites common to poultry can be avoided if the birds are kept in roomy, clean and well-ventilated buildings.

Watch your flock for signs of diseases — coughing, sneezing, watery eyes, a sudden drop in feed consumption, droopiness and abnormal droppings. If such symptoms are present, act quickly. Isolate sick birds from the flock, get a reliable diagnosis and start treatment at once. Very sick birds should be killed, diagnosed as to the disease, and buried deep or burned in an incinerator.

Clean and disinfect the entire building once a year (or more often) if diseases are present, and refurbish with new litter containing hydrated lime. Clean waterers daily and feeders once or twice a week.

## Turkeys

Many things can go wrong in turkey raising and, since the profit from each bird is very small, you can ill afford to lose birds through disease, predators or mismanagement. Young turkeys need special care, equipment and feed. Never raise them in buildings or on premises where chickens were kept within the past 3 years, because of possible diseases or parasites.

Popular varieties are the Broad-Breasted Bronze and the Large White. Smaller turkeys such as the Beltsville White, a strain developed within recent years to meet consumer demand, are increasing in popularity — particularly as broilers.

## Feeding

Turkeys need a very precise and highly nutritious diet for maximum growth in the shortest possible time. For the first 2 months, poults are usually fed a starting mash containing 28% protein. This is followed by a growing mash, either loose or pelleted, fed free-choice.

Beginners should buy commercially prepared turkey rations rather than to mix their own feed. Commercial feeds are scientifically blended to provide all the proteins, fiber, energy, vitamins and minerals required for rapid growth and efficiency.

When the turkey are almost 3 months old, place them on pasture until ready for slaughter. While they are on range, feed them whole grains (wheat, barley and corn mixtures) and about 10-15% commercial turkey grower. The latter usually contains antibiotics, vitamins and minerals.

## Housing

As soon as the poults arrive, place them in a preheated brooder house and feed and water them immediately. To prevent young poults from piling up in corners and possibly smothering themselves, place a ring of 30 cm cardboard or screen guard around the brooder stove, or heat source, to contain them during the first week. The recommended temperature, 5 cm above the floor, is 35°C. Reduce this temperature by 3°C each week until heat is no longer required.

Young turkey poults are notoriously stupid and will eat almost anything small enough to be swallowed. For this reason, cover litter (cut straw, wood shavings or coarse sawdust) with burlap or sacking. Do not use paper as it is too slippery and will cause spraddle legs. For each poult in the brooder house, allow 0.2 m<sup>2</sup> of floor space. Also, have at least one watering fountain and one feeding station for every 25 poults.

When 2-3 months old, the birds can be transferred to portable range shelters. A 2 × 3.5 m shed (preferably equipped with roosts) will protect young turkeys against high winds, rain or early snow.

## Geese

Geese generally need much less care, feed and attention than turkeys. They can be put on pasture when only 3-4 weeks old and will need little food so long as the grass is green. As a matter of fact, geese are useful for weeding some garden and orchard crops, such as strawberries.

The most popular breeds are the large Embden, Toulouse and African, the medium-size Pilgrim and the small Chinese. If you're only raising a few as a hobby, the choice of breed is a matter of personal choice and local availability. If you are raising them for the market, keep in mind that the size and plumage color (white is preferred) are most important.

### Feeding and management

On arrival, goslings should be watered, fed and placed in a warm brooder house. Handle them in much the same manner as chicks. Feed goslings a duck- or non-medicated chick-starter mash for the first 2 weeks, then pelleted feed and fresh grass clippings for about 1 week. Finally, when they are 3-4 weeks old, put them out to pasture. Half a hectare of good grass and clover pasture provides forage for 20-30 young geese. A nearby stream or pond is desirable but not essential, as portable fountains can be used for drinking.

Young geese are usually ready for the market in 12-15 weeks. If they are not marketed at this time, they must be reared to about 21 weeks old so that all pinfeathers are fully developed, to permit easier defeathering.

Geese are stunned by a blow at the base of the skull, bled and plucked. If properly handled, goose feathers can be sold to pillow and mattress manufacturers as an added source of income.

## Ducks

Ducks are easy to raise on a small farm or in confinement. They are hardy birds and easy to handle. They grow rapidly, are seldom infested with parasites and are subject to few diseases. Although it would be advantageous, it is not necessary to have a small pond or be near a body of water to raise ducks.

The most popular breeds for meat production are the White Pekin, the Aylesbury and the Muscovy. If you believe you can develop a market for duck eggs, then Khaki Campbell and Indian Runners are the best breeds. Other breeds raised in Canada are Rouen and Cayuga.

### Feeding and management

Special commercial rations are made for ducks. If these are not available, use a chicken broiler starter that doesn't contain antibiotics. Given proper care and feed, ducks grow surprisingly fast. Usually, they reach a market weight of about 3 kg in 7-10 weeks. Very little equipment is needed. As housing, a barn or shed is usually satisfactory. Newly hatched ducklings are handled in a similar manner to chicks or goslings.



During the first 2 weeks after hatching, ducks are fed a wet crumbly mash four or five times a day. Remove surplus feed after they have eaten their fill. Keep fresh water in front of them at all times but don't let them get wet. Keep founts clean. You can let young ducks out on grass runs or pasture when 10 days old, weather permitting. Older ducks may be fed duck pellets and chopped green feed.

Lights are commonly used at night to keep the ducklings contented and to increase feed consumption. It also helps prevent them from becoming frightened.

Protect ducklings against cold and wet weather until they have completed their feathering. If young ducks are outside on pasture, make sure they have shade and ample water during hot summer days; ducklings cannot tolerate the sun after eating. Also, keep predators away.

Ducks for the market are killed, plucked and dressed in the same way as chickens and geese. The sale of feathers is important to duck producers. Usually, you can get 500 g of down and soft feathers from about six or seven ducks.

## **Squabs**

Squabs are young pigeons 25-30 days old. Small farms not suited to chickens or turkeys can often be used to raise pigeons successfully. However, squab production is usually a hobby rather than a farming venture designed to pay for itself or be profitable.

Pigeon raising is a fascinating hobby for adults and children alike. There are hundreds of breeds and varieties. Fanciers and breeders raise them for show, racing or homing performance, or for squab production as a hobby or commercial enterprise. Breeds recommended for squab production are: White King, Carneau, Mondaine and Giant Homer.

## **Feeding and management**

A pair of pigeons will eat more than 45 kg of grain during the year, making the 10-12 squabs produced rather expensive — particularly if all the feed is bought.

Pigeons can be raised in simple, inexpensive houses, lofts, or unused parts of a barn or shed. They feed their young a substance called pigeon's milk, produced in the adult's crop. When about 4 weeks old, the young squabs (or squealers) are either weaned or slaughtered for the table or market. Those killed are plucked and dressed like poultry. They can then be packaged individually and quick frozen until enough have been accumulated for a meal or for the market.

## **Bees**

No small farm is complete or self-sufficient without a few colonies of bees to put honey on the table. Beekeeping is a fascinating and productive hobby and gives a product that will delight your family, neighbors and friends. Colonies are relatively inexpensive, easy to manage and, with proper knowledge, safe and enjoyable.

Study a couple of good books on beekeeping before starting with two or three colonies. As you gain experience, you may expand the number to become a part-time beekeeper (25 to 300 colonies) and, finally, a commercial honey producer (500 or more colonies). If you decide to keep bees, remember that you must register your apiary with the provincial government each year for disease control.

## How to start

After you have learned the fundamentals of beekeeping, visit a neighboring beekeeper and, if possible, work with him. He will appreciate your help and interest, and you will gain valuable experience and courage. You can start your own apiary by buying two or three colonies from your neighbor, or better still, start fresh. Early in the year (preferably in February), order the necessary equipment and bees from a honey producers' cooperative or a bee supply house. While waiting delivery, assemble the equipment, buy the necessary feed (white sugar) plus drugs for disease control, and select a sheltered site for your apiary.

## Equipment

A complete beehive consists of a cover, a bottom board and about five supers, each with nine or 10 frames or combs. Before you buy used equipment, have it inspected for disease and get a permit to move it to your property.

A hobbyist with a colony or two can possibly use the kitchen for honey extraction. One with a greater number of colonies will need a sanitary, insect- and vermin-proof building, preferably with a concrete floor, running water and electricity.

Finally, for your personal safety, you will need a bee veil, smoker, hive tool, gloves and coveralls.

## Management

For most parts of Canada, package bees should arrive in mid-April to early May. Usually, they are shipped in by truck or express from producers in the southern United States. Each screened package contains 1-1.5 kg of worker bees, a caged queen and possibly a few drones.

On a cool, cloudy day, or just before dusk, install the bees in their new home. Remove the screen on one side of the package and dump the bees into the hive after removing three or four combs. Liberate the queen from her cage and drop her among the swarm. As soon as the bees have climbed up on the combs, replace those that were removed and close the hive. Feed the new colony ample sugar syrup and reduce the entrance to 1 cm.

Three or 4 days later, quietly inspect the hive to see if all is normal. If the queen is missing or not laying, obtain a new queen immediately. Examine your colonies at 10-day intervals during May and June and add supers well in advance of population and storage requirements.

In late summer or early fall, or as soon as possible after a killing frost, kill off your colonies and extract the honey. Or, if you wish to overwinter your bees, give them no less than 30 kg of honey or syrup and protect the hive from the cold and wind.

## Diseases

The most dangerous diseases are American and European foulbrood, commonly known as AFB and EFB; another brood disease is sacbrood. Adult bees are also subject to nosema, dysentery and paralysis. You must report any abnormal condition immediately to a provincial bee inspector, then treat or destroy diseased colonies as directed.

## Honey

You will be extremely proud of that first jar of honey you place on the table. Honey can be stored in a cool, dry place for many months. All good honey will granulate into a solid mass, but can be reliquefied by gentle heat. If sold through retail outlets, it must be graded, classified and identified by the name and address of the producer or packer.

## Horses

If you own a horse you must not only give it feed and shelter but also a place to exercise. You'll need a veterinarian's eye for the first symptoms of disorder or signs of indisposition, and will have to maintain the tack; if you want your equipment to last, give it proper care after every use.

## Breeds

Horses are generally divided into types according to their use, size and weight. The heaviest and largest are the draft horses, which include the Belgians, Clydesdales and Percherons. Light breeds are the American Saddle Horse, Arabian, Palomino, Pinto, Quarter Horse, Standardbred and Thoroughbred. Ponies are small horses such as the Shetland, Hackney and Welsh .

## Feeding and management

A horse eats hay and grain (feed). Give it the hay free-choice and the grain at a regular feeding time.

Hay must be high quality — light green, leafy and free of mold and dust. A mix of alfalfa, timothy, brome and orchardgrass is good. You'll need enough hay storage to cover a 7-month feeding period.

Oats, wheat bran and corn are the best feed grains for horses. An animal doing heavy work needs more feed than one doing nothing. Also, start young horses on feed gradually.

Remember that a foal continues to nurse from its mother until about 6 months old, even though it eats hay and feed.

Be sure to provide minerals and salt for your horse.

See that the horse gets all the water it needs — about 40-60 L every 24 hours. However, it may founder if given too much at once when it's hot after a hard workout.

If the horse is shod, trim the hooves every 5 weeks and reset the shoes.



## Diseases

Watch your horse for general signs of illness: its posture, skin, hair, digestion, and respiration. Check its heartbeat and body temperature regularly.

Horses are subject to many diseases and parasites, and are also prone to injury. Pay close attention to a limp and guard the animal from environmental dangers such as exposed nails, barbed wire, etc.

Horses that are running outside should receive an annual rabies shot and be treated for internal parasites 3 to 4 times a year. Inoculations against tetanus and flu are also recommended.

## Control of small mammals

### Warning

If you use pesticides to kill small mammals, ALWAYS follow label instructions carefully. If you do not succeed in eliminating the pests, contact a licensed pest control operator.

Check with your provincial agricultural representative to see if you need a permit to handle the pesticides or to fumigate. You may also need a permit to shoot, trap or transport these animals. Bear in mind that the animals may carry diseases that could be transmitted to humans.

Keep all poisons out of the reach of children and pets.

### Bats

To keep bats out of buildings, screen all louvers and vents. Cover chimneys and other large openings with 6 mm wire mesh. Close small cracks with oakum, caulking compound, wood, cement or metal.

Electric lights left on 24 hours a day will effectively drive bats out of a site they are using as a diurnal roost or nursery colony.

### Mice and rats

Chemicals recommended are: single-dose poisons such as zinc phosphide; and multiple-dose poisons (anticoagulants), such as diphacinone, warfarin, calciferol (Vitamin D2), fumarin, chlorphacinone, pindone, brodifacoum and bromadiolone

Place a guard around young trees, particularly fruit trees. Use woven wire screening with a 1 cm mesh, and set it into the soil to a depth of about 5 cm.

Eliminate unneeded sources of water (rats need water daily while mice can live for several months on the water in their food). Good sanitary conditions that eliminate harborages and food sources will make control much easier.

### Moles

Although moles are generally beneficial, you may have reason to rid your farm of them. Use specially designed mole traps or cartridges, such as the Giant Destroyer, which release poisonous fumes as they burn.

Cartridges must be lit before being inserted as far as possible into the mole's burrow, which should be closed immediately with a clod of dirt.

## Groundhogs

Since the young are weaned in June, control measures taken before this time are most effective.

The Sanex Wood Chuck Bomb and the Giant Destroyer, when placed in a groundhog hole and ignited, emit poisonous sulfur oxide fumes. Running a hose from a tractor or car exhaust down a burrow to asphyxiate the groundhogs is also effective.

## Rabbits and deer

Place guard-screens around your trees and shrubs.

Spray repellents such as thiram, B.G.R. or Hinder in late fall before a major snowfall. The animals are repelled either by a bitter taste (thiram) or by an offensive smell.

## Sources of information

Communications Branch, Agriculture Canada, Ottawa K1A 0C7, has additional information on the subjects presented in this publication. Ask for our publications list or other literature related to your specific interests.

You can get other publications from the extension services of the provincial departments of agriculture, agricultural colleges and universities, and from a variety of industry sources, such as feed companies, producer organizations and consultants.



