SUCCESSFUL GOOSE FARMING

Geese are popular backyard companions. Geese are good breeders and therefore their numbers can increase drastically. They are popular for meat. This makes them ideal for the meat market. Eggs are utilised, whilst the down and feathers business is booming worldwide. Goose farming requires dedication as well as knowledge about geese. To start a goose farm requires, among other things, water, space and infrastructure. Fences, additional food, housing and facilities for breeders and goslings are essential.

Water is essential in mating, bathing, cleaning and the prevention of various diseases for geese. Clean drinking water is essential. Geese must not be able to climb into drinking water containers, but it must be deep enough and big enough for both geese and goslings to immerse their heads. This keeps their eyes clean and free from bacteria.

Feeding areas must be kept clean and dry. Remove wet feed from feeders, as this might cause bacterial growth.

Fencing is required, not only to keep geese in, but also to keep predators out. For precaution, close the geese off during evening.

Nesting boxes should be available to geese at least two months before the breeding season starts. Provide each housing area and/or paddock with nests. Some geese will make their nests in the shavings on the floor or under bushes whilst others prefer nesting boxes. Nests must be accessible to pasture, dams and housing. When the geese are breeding, ensure that they are safe during the evening.
Geese must have a supply of enough green feed. This can include kikuyu, lucerne, oats or any other vegetation suitable for geese. Provide them with additional feed on a daily basis, to increase the protein levels required for breeding and growing geese. Increase the ration in winter when green feed is not regularly available. Geese are well developed for grazing purposes, and graze grass shorter than sheep do. Goslings can start grazing at a few days of age. If pasture is good and plentiful, then reduce the amount of prepared food given. It is however important that they do get green feed.

This article comes from Mignon Smit: 2001. Goose farming

METHODS FOR THE PRESERVATION OF FRUIT AND VEGETABLES

For daily food people are dependent on products of plant and animal origin. When preserved, food can be eaten long after the fresh products would normally have gone off. Preservation is the process by which the shelf life of food is increased. It is a means to store food which is abundant at certain times and to provide food in times of scarcity.

The choice of a preservation method depends on the product, the desired properties of the stored product, the availability of energy sources, the storage facilities, possible packing materials, and the costs involved for each method. A number of advantages and disadvantages of several methods are summarized here:
**Heat treatment:**
- fairly expensive
- labour intensive
- requires much energy and water
- jars or tins with lids are needed
- sterilisers and canning machines are needed
- packing is expensive
- ✓ storage is easy (below 25°C) and for long periods
- ✓ the quality of the product and the nutritional value is good.

**Low temperatures (Freezing)**
- ❌ very expensive technique, using much energy
- ❌ high investments are needed
- ✓ the quality, nutritional value and length of storage are good.

**Drying**
- ❌ dry and/or airtight storage required
- ✓ inexpensive, no energy (sun drying) or only relatively little energy needed
- ✓ little equipment needed
- ✓ quality and nutritional value reasonable with good storage

**High osmotic pressure**
- ❌ nutritional value low (excess sugar)
- ✓ inexpensive when sugar or salt are cheap
- ✓ no energy required
- ✓ storage at room temperature
- ✓ salting gives a reasonable quality and food value with meat but poor quality with vegetables
- ✓ sugar gives good quality for fruit
- ✓ long storage possible
Fermentation and pickling

❌ Taste and odour often radically changed
❌ Length of storage in general rather short (a few weeks)
✔️ Often cheap (local techniques)
✔️ No energy needed
✔️ Food value often good


EFFECTIVE SOIL MANAGEMENT THROUGH CROP ROTATION

Crop rotations are the principal means for controlling weeds, pests and diseases in an organic system. Rotations cure “soil sickness” by alternating weed-susceptible crops with weed-suppressing ones; crops that are hosts to pests with those that aren’t; crops that deplete nutrients from the soil with those that add nutrients and by planting crops that help maintain soil structure. Any successful rotation practice needs a fine balance between improving and maintaining soil fertility and structure. At the same time it needs to produce sufficient food for livestock and maintain the farm’s output. Rotation must also consider the suitability of particular crops to the farm’s climate and soil type, the availability of labour and the market for which the farm produces. Some guidelines when designing a crop rotation are:
Deep-rooting crops – such as sunflowers – should follow shallow-rooting crops such as soya, wheat and maize because they help keep the soil structure open and assist with drainage.

Alternate low root-biomass crops such as maize, with high root-biomass crops, such as dry beans, canola or leys of grass and clover. High root-biomass crops feed soil organisms – particularly earthworms.

Nitrogen-fixing crops include legumes such as soya, dry beans and lupins. These should follow plantings of nitrogen-demanding crops like wheat.

Autumn-sown crops should alternate with spring-sown crops and vice versa as different weed species target these.

Weed-suppressing crops, such as lucerne and rye, should follow plantings of slow-developing crops such as wheat, oil seeds and sunflowers, which are more susceptible to weeds.

This article comes from Farmer’s Weekly Grow: 3
KEEPING RABBITS

Rabbits do not cost much to keep, and they breed quickly. One male and two females will breed enough to give your family meat throughout the year. Rabbit manure is high in nitrogen and very useful in a vegetable garden.

Try to give your rabbits different foods, such as root crops; fresh green grass, green maize leaves, cabbage leaves, lettuce, lucerne and weeds; starchy foods, and plenty of water. Rabbit pellets are sold by milling companies, but they are very expensive.

If you build cages on the ground, the rabbits will dig their way out. So build the cages off the ground, standing on poles. Build them out of wire mesh or wood. Make a cage of one cubic metre for one rabbit, and 1,5m by 1, by 1, for a female with babies. The cages should have a roof over them – you can make a thatch roof supported by wooden poles. The mother rabbit needs a warm place for her babies, because the baby rabbits are born without fur. So you will also need to make nesting boxes. Make the nesting boxes about 50cm by 50cm by 1m high.

If you want to mate your rabbits, make sure that you take the females to the males. If you take the male to the female, she may fight with him. Leave them together for two days to make sure they mate properly, then take the female back to her cage. After twelve days take the female back to the male, again. If she
refuses to mate this time, it means that she is probably pregnant. The babies will be born about 31 days after a successful mating. Leave the female with her babies for six weeks. She can be mated again two weeks later. If you follow this advice, a female can give birth four times a year. The best time to kill rabbits for meat is when they weigh about 2 kg. They normally reach this weight after about four months.

This article comes from: People’s farming workbook by the Environmental and Development Agency Trust: 70-72

CONTROLLING MASTITIS

All animals that produce milk can get mastitis. Mastitis is an infection in the udder. Sometimes it is very mild and just slightly changes the milk. Sometimes it is severe, it happens very fast, the animal is very sick and may die. Sheep and goats sometimes get very severe mastitis called contagious agalactia. Signs of mastitis are:

- Mastitis infection is often in the udder for some time before signs appear. Sometimes animals give less milk.
- The milk looks different. It is watery, discoloured or has lumps in it. Sometimes it is stained with blood and looks pink.
- The teats are swollen and tender. Sometimes there are wounds or cracks on the teats.
- The animal resists being milked.
- The udder is hot. It looks reddened. It sometimes becomes swollen or hard.
- Often only one teat has signs of disease.
The udder sometimes has hard lumps in it that are painful to the animal when you touch them.

Some types of very severe mastitis make the udder become dark blue/black. It feels cool when you touch it. These are very bad signs and when they happen the animal stops eating and becomes very sick.

Treatment of mastitis:

Treat the animal as soon as possible

If an animal has signs of mastitis milk her until the udder is empty. Do this as often as you can. Keep the udder as empty as possible. Infected milk can spread infection to another animal. Be careful not to spread mastitis to other animals.

Put an antibiotic directly into the udder. Many antibiotics work well. If the disease is severe, also give an antibiotic by injection.

Prevention of mastitis:

Keep everything as clean as possible around the time of milking.

Clean the udder before and after milking.

Keep the place where the animal is milked clean.

Milk animals with mastitis last to avoid spreading infection to others.

After milking, keep the animal in a clean place at least for an hour. Feed animals after milking them. Then they stand up to eat and do not lie down where it is dirty. It is especially easy for infection to get into the udder after milking. The teat does not close completely until about one hour after milking.

This article comes from: Where there is no vet, by Bill Forse: 244-245
FARMER VISITS

Farmer visits involve a group of farmers visiting other farmers within the same locality (or farther away) in order to share information about specific technologies or ideas. If done after a training course (as described below), the main aim of the visit may be to enable farmers to see the items taught during the course actually being used. The method is particularly useful to build farmers' confidence and to establish farmer networks. The saying that "One who doesn't travel thinks his mother is the best cook" best captures the purpose. Farmer visits are often part of a broader extension programme. They are useful in community-based extension efforts or as part of regular extension activities. Farmer visits may be organized by an outside group such as the extension service or an NGO, or by the farmers themselves.
**Advantages**
- Farmers learn by seeing and doing.
- The farmers will see the technology being used, and may adopt it easily.
- Farmers tend to believe other farmers, so the spread of skills and ideas is much faster than through conventional extension.
- Seeing successful examples motivates the visiting farmers to try to do better themselves.
- Visits help build relationships and networking among farmers.
- The visits build the confidence of the farmers hosting the demonstration.
- The visitors can see and learn many things other than the specific technology they came to see.

**Disadvantages**
- The costs for training (training materials, resource persons and venue) and transport for the field visit may be high.
- Farmers may be unable to bear some of the costs.
- Farmers may hesitate to share their experiences with others.

In the next edition of Agri-Outreach we will have a look at how to organise a field visit.

This article, and picture comes from: *Sustainable Agriculture Extension Manual*, by Miguel A. Altieri General Coordinator UNDP SANE (Sustainable Agriculture Networking and Extension) Program ([http://www.iirr-africa.org/saem/page34-36.htm#page-35a](http://www.iirr-africa.org/saem/page34-36.htm#page-35a))
Fertilisation: Nitrogen

What role does nitrogen play in plant growth and yield?
Nitrogen occurs in the chlorophyll of plants and is responsible for vegetative growth. The leaves of plants that receive sufficient nitrogen have a dark, blue-green colour which promotes photosynthesis.

Photosynthesis is the process by which light energy is intercepted by plants and stored in the form of starches and sugars. This process is essential to sustain normal plant growth.

What are the symptoms of a nitrogen deficiency?
The leaves have a pale green appearance and could even be yellow in extreme cases. Plant growth is suppressed because of insufficient photosynthesis.

In the case of maize and grain sorghum an inverted V-shaped pattern on the leaf tips is an indication of a nitrogen deficiency. The leaf edges die off, inhibiting plant growth.

In what form is nitrogen available to the farmer?

- Nitrogen occurs in the soil and in the atmosphere.
-Legumes fix atmospheric nitrogen in symbiosis with bacteria and make it available to the plant.
- Nitrogen is usually provided to the plant in the form of fertiliser. Fertilisers that contain only nitrogen are known as single nitrogen carriers.

The following single nitrogen carriers are available:

- LAN (28): limestone ammonium nitrate
- ASN (27): ammonium sulphate nitrate
- Urea (46): urea
- (NH₄)₂SO₄ (21): ammonium sulphate
- UAN (32): urea ammonium nitrate
- ANS (19) and (21): ammonium nitrate solution
- NH₃ gas: anhydrous ammonia

- Nitrogen is also chemically mixed or blended with phosphate (P) and potassium (K) in various ratios to meet nutrient requirements of plants. Examples are:
  4.3.4 (33) + 0,5 % Zn: 12 % N, 9 % P, 12 % K + 0,5 % Zn
  3.2.1 (25) + 0,5 % Zn: 12,5 % N, 8,3 % P, 4,2 % K + 0,5 % Zn
2.3.2 (22) + 0.5% Zn: 6.3% N, 9.4% P, 6.3% K + 0.5% Zn
2.3.4 (30) + 0.5% Zn: 6.7% N, 10% P, 13.3% K + 0.5% Zn
2.1.0 (30) + 0.5% Zn: 20% N, 10% P, 0% K + 0.5% Zn

Nitrogen can be blended in any combination with phosphorus and potassium in fertiliser mixtures, provided it meets the required stipulation of the Fertilizer Act (Act No. 36 of 1947).

How is nitrogen applied?

Nitrogen is usually applied to summer crops in two instalments.

- At planting, nitrogen, in a mixture with other nutrients (phosphorus and potassium), is band-placed in the plant row, 5 cm below the seed and 5 cm away from the seed.
- Depending on the type of plant, nitrogen is applied as topdressing after the plant has emerged.

Which nitrogen sources acidify the soil the most?

Nitrogen-containing fertilisers which contain large quantities of ammonium and amine nitrogen have a greater acidifying effect on soil than nitrate-containing fertilisers. LAN (28), for example, has the least acidifying effect because of its nitrate content and the 20% lime which it contains.

Ammonium sulphate contains only ammonium nitrogen and sulphur which accelerates the process of soil acidification. It is used especially in irrigation areas where the pH is high and the acidifying effect therefore has a neutralising effect.

The table shows the classification of nitrogen carriers from the most acidifying source to that with the least acidifying effect.

<table>
<thead>
<tr>
<th>Rank order</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (most acidifying)</td>
<td>Ammonium sulphate (21)</td>
</tr>
<tr>
<td>2</td>
<td>ASN (27)</td>
</tr>
<tr>
<td>3</td>
<td>Urea, UAN (32), ANS (19), ANS (21), anhydrous ammonia and ammonium nitrate</td>
</tr>
<tr>
<td>4 (least acidifying)</td>
<td>LAN (28)</td>
</tr>
</tbody>
</table>

Contact the Fertilizer Society of South Africa for further information
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1998
The professional career that marries technical precision, with creative expression and the ability the make the world a better place is that of the Urban and Regional Planner. The Department of Urban and Regional Planning at the University of the Free State runs a Masters Degree course (M.U.R.P.) that can be taken full time (2 years), part time (3 years) or in the form of compact learning (3 to 4 years). A three-year Bachelors Degree (or in some cases a Technicon Diploma) is the prerequisite for admission to the course. The degree is accredited by the South African Council of Urban and Regional Planners. The compact learning students visit the Department of Urban and Regional Planning for four separate weeks annually and has the same amount of contact hours with the lecturers as the full time and part time students. These compact learning students are in full-time employment all over Southern Africa while completing the course. Apart from the general urban and regional planning subjects, a wide scope of alternative subjects is available ranging from economics to ethics of planning. The Department of Urban and Regional Planning has three areas of specialisation available for students and that is Sustainable Tourism Planning, Healthy Settlements and Rural Development. The Masters Degree course of the Department of Urban and Regional Planning provides the students with a sound theoretical base, but with ample opportunities in practical work which is either done in the field of interest of the student or via contract research with the lecturers. On receiving the Masters Degree in Urban and Regional Planning the students will have the knowledge and experience to be a worthy instrument in planning and sustainable development in Southern Africa. In fact many graduates are successfully employed in countries like Canada, the USA, UK, Australia, New Zealand and Ireland due to their advanced knowledge of urban and regional planning.
Snakes

Snakes belong to the class **Reptalia**. The word comes from the Latin “repere” meaning “to creep”. That is how most people think of snakes – as horrible creepy-crawlies to be avoided or destroyed. In fact, the majority of snakes are harmless to human beings. They do more good than harm as they control rats, mice, frogs, and other small animal populations, so keeping a balance on nature.

Of the 160 species and subspecies of snakes in Southern Africa, less than 16 are deadly to humans. Snakes are predators. Some kill their prey by constricting it by muscle power and squeeze their prey to death. The majority of snakes are venomous, meaning they kill their prey by injecting poisonous venom. The venom is manufactured and stored in glands behind the eyes on either side of the head. Pressure on the glands forces venom along ducts and down the hollow fangs. “Spitting” snakes not only kill by injecting venom, but protect themselves by spitting venom, some for as far as 2.5 metres, to keep predators at bay.

Most snakes have poor vision. Exceptions are the Boomslang and Twig snake that can see stationary prey. Instead of vision a snake uses smell to detect its prey. It does not smell through its nostrils but rather through its tongue.

If bitten by a snake the most recent recommendation is not to cut the wound or use a tourniquet but rather to bind the limb firmly – but not too tight – with a crepe stretch bandage to slow the blood flow, and then get the patient to the hospital as soon as possible. Venom in the eyes can be rinsed out immediately with milk or water and the patient taken to the hospital. Do NOT rub the eye.

From a pamphlet produced by the Durban Natural Science Museum