



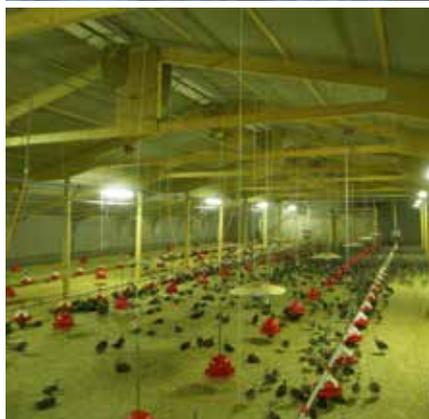
Brooding and Growing  
Guidelines for Improving  
Flock Performance





# Source Turkey Brooding and Growing Guidelines for Improving Flock Performance

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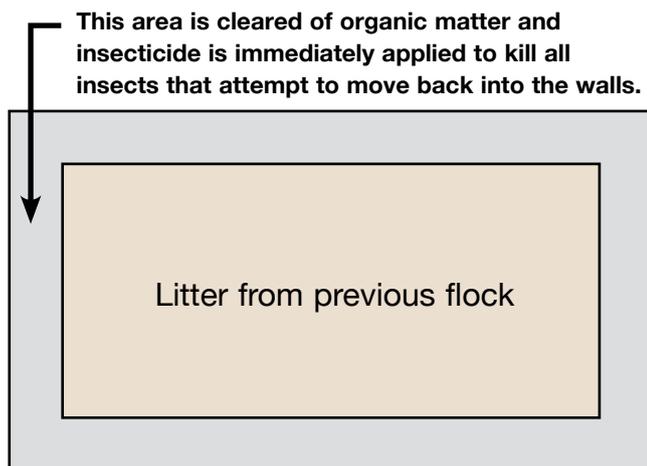
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## Barn cleaning

### Insect Control:

As soon as the previous flock leaves the barn the temperature will decrease. This quickly encourages darkling beetles to move from the litter to the walls. As such organisms can carry disease from flock to flock. The following should be carried out to eradicate them:

Immediately clear around one metre of litter from the walls (one bucket-width of your machine) and cover this floor area with an insecticide effective against darkling beetles (at present we use "Tempo" from Bayer). This will kill beetles and other insects which try to migrate into the walls following the removal of their heat source (turkeys).



The barn can then be completely cleared of all organic matter from the previous flock. Remove as much residual litter and dust as possible as this will make washing easier.

Thoroughly wash all areas of the barn and equipment. It is extremely important to ensure that all "hard-to-reach" places are also washed eg air inlets, fan housings etc.

Washing should be done with hot water with the addition of some detergent and under high pressure. Disinfection should be done under low pressure. It is good to add heat to the buildings in winter to increase the effectiveness of disinfectants.

If a disease has been present with the previous flock disinfection should be applied at 2 different stages using two different disinfectants.

Place all washed equipment which you intend to use inside the barn eg feeders, drinkers, gates etc and disinfect absolutely every part of the barn and all equipment.

During disinfection position a footdip at the barn entrance and place clean coveralls and boots inside the entrance door. Next day after disinfection place new bait in the bait stations.

Limit access to the barn and anyone entering must wear the coveralls and boots which are supplied. This is critical to avoid contamination of the clean barn.



### Water line sanitation

Many flocks become sick due the inadequate sanitation of water lines. We recommend the following procedure:

Water lines and drinker pipes should be filled with chlorine (5% sodium hypochlorite) at a rate of 1 litre of chlorine per 50 litres of water. This should be maintained for 24 hours (shock the waterlines) and then completely flushed with fresh water.



**Don't forget to "shock" all water lines with chlorine, from water tanks to drinker pipes.**

Water tanks should be emptied of all stale water, washed and disinfected, rinsed with clean water and filled close to the time of poult arrival with fresh water.



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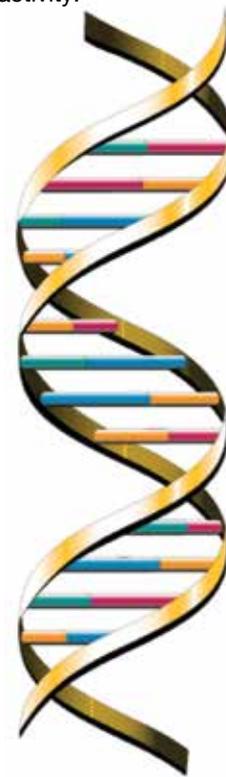
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## Rodent control

Rodent bait stations should be placed at 15 metre intervals around the barns at this stage. Don't wait until the day of placement to begin rodent control. Rodent bait should be sheltered from the weather (using plastic bait stations) and fresh bait added regularly. The type of bait should be changed 3 or 4 times per year. It should also be placed in any areas of the barn such as water tank rooms, entrance porches etc. Mice and rats carry many pathogens (bacterial and viral) which are dangerous to turkeys and expensive to the farmers eg Salmonella and Pasteurella. Every 2 weeks check bait stations for rodent activity (degree of bait consumed) and add a new bait when necessary. Keep records of rodent activity.



### KEY

- |   |  |
|---|--|
| 1 | Rodent activity is monitored on a routine basis and bait is replaced when necessary.       |
| 2 | Bait is held on a wire for ease when checking and replacing.                               |
| 3 | Plastic Stations should be used in porches, water tank rooms, attics etc.                  |
| 4 | Storage facilities for straw/shavings etc should be bird proof with strict rodent control. |

## Setting up the barn for new poults

Cover the floor with 7-10 cm of clean shavings, which should be free of dust and mould to prevent respiratory problems eg aspergillosis.

The rings should be set up, preferably with 45 cm high corrugated cardboard with a radius of no more than 1.8 metres. If rings are too big, piling may result.

There should be 1 brooder per ring hung in the centre and 250-300 poults per brooder.

A hospital ring should be made and the shavings covered with excelsior pads for weak birds and flipovers.

The shavings should be raked level and compacted down in each ring to allow easy movement by the poults.

### Water availability

The main cause of poult mortality in the first week of life is dehydration, therefore ensuring that there is sufficient water available to all poults is very important on day 1.



There should be at least 1 drinker per 50 poults. These must be set as low as possible into the shavings and filled as high as possible with water (without spilling or flooding). These should be washed and disinfected 24 hours before poult delivery and the water dumped (outside the rings) immediately prior to the poults being placed.

### Feeders

There should be at least 1 feeder per 30 poults, filled not more than 24 hours prior to poult delivery. Feeders and egg trays should not be overfilled with feed as this will result in waste and poorer litter quality.

Feed should arrive at the farm as close as possible to the arrival of the poults. If pre-starter feed is stored for long periods in warm environments the quality is reduced drastically. Vitamins may be destroyed e.g. Vitamin D3 and early rickets may result.

### Barn environment

Brooders should be turned on around 24 hours before the poults are delivered. The room temperature should be around 25 c and the shavings directly under the brooders around 35-38 c. This difference allows the poults a greater "choice" of temperatures.

Relative humidity should ideally be between 65-70% although this is difficult to achieve, therefore a more realistic target would be between 40% and 50%. Dumping drinkers outside the rings helps to raise the humidity.

Keeping barn temperatures too hot results in the poults becoming heat stressed (which could result in piling) and encourages them to become lazy and their appetite is diminished.

Heat stress can also suppress the immune system which will result in reduced resistance to any disease challenges.

#### KEY

- 1 For day old poults this drinker is too high and the water level is too low.**
- 2 When poults arrive in the barn have the water level as high as possible and the drinker as low as possible (avoid spills).**



## Managing the poults

The stocking density from day old to 6 weeks should be around 10 poults per m<sup>2</sup> for females and 8 poults per m<sup>2</sup> for males. If the stocking density is too high the flock will have poor uniformity.

During placement the poults should be emptied very gently from the boxes near the stoves but not directly under them.

After placement they should be quickly checked and then left for around 1 hour to settle in.

They should then be checked every 2-3 hours for the first 2 days, paying special attention to their positions within the rings as they will act as an accurate thermometer for you to determine their comfort.

Because the brooders are releasing many gases which are harmful for the poults eg carbon monoxide, ventilation must be carefully controlled. Good ventilation from day 1 is very important but great care must be taken to eliminate any drafts or cold areas in the barn.

**The drinkers must be washed at least once a day with soap/disinfectant and emptied into a bucket.**

Feeders should be topped up "little and often" to stimulate the poults' interest and encourage them to eat. If any shavings are lying on the feed, blow or scrape them off.

Whilst topping up the feeders and washing drinkers the litter should be turned and stirred beneath them daily, from day 2. Do not allow caked/wet rings to form in the litter. This results in footpad damage which allows bacterial infection in the bird and is a very common reason for leg problems in older birds.

**In the first 24-48 hours of placing the poults, give them uniform bright light (100 lux). See Source Turkey light programme.**

The light intensity may be decreased after 3-4 days if pecking is occurring. However, bright light in the first few days of the poults' lives is very important as it encourages them to eat, drink and exercise. On the other hand, giving them dark periods encourages them to lie under the stoves (by being attracted to the flame) and they may become lazy. This results in higher mortality due to starve-outs and dehydration.

The rings should usually be joined from 2 into 1 at 2 days, 4 into 1 at 4 days and completely removed at around 7 days old.

If feeders (egg trays) and mini-drinkers are to be removed, this must be done gradually (do not take out any drinkers until after starve out day). Do not suddenly take all extra equipment out in the one day, spread it over several days.

We do not recommend giving vitamins in the drinking water in the first 2-3 days as this often causes loose droppings in the young poults because vitamins in the water tanks, water lines etc favour the proliferation of bacteria.

**However, Vitamin D3 only (not multi-vitamins) should be given routinely at 8, 10 and 12 days of age at the rate of 1000 I.U. per poult. This will help to prevent rickets and later leg problems (see page 9 for mixing instructions).**

B.U.T. recommend that the stocking density be no more than 38kgs/m<sup>2</sup> (depending on the environment) from 8 weeks until killing.

## Good management practices for growing turkeys

Ventilation is the key to good flock performances. Many problems can occur if the turkey barns are inadequately ventilated. The barn should have good air movement but at the same time there should be sufficient heat in the barn, especially with younger flocks. Therefore it may be necessary to change the settings on a daily basis, depending on the weather conditions outside.

Never become complacent regarding biosecurity:

- 1 Replace the disinfectant in the footdips everyday.**
- 2 Always change boots and put on coveralls which are only used for that particular turkey barn.**
- 3 Never leave dead birds outside the entrance door. They should be taken away and disposed of as soon as possible.**
- 4 Always be on the lookout for signs of rodents and never let wild birds inside the barn. Run proper rodent control program.**
- 5 Limit farm visits to only necessary persons. Anyone who enters the turkey barn should not keep pet birds and should have no contact with any other avian species.**

Drinkers should be moved daily and kept at the correct height. An approximate guide is:

**1-7 days = as low as possible**

**8-28 days = breast height**

**From 29 days until killing = bottom of the drinker should be level with the top of turkey's back.**

If the drinkers are too low, water will be spilled which results in wet litter and footpad problems.

Feeders must also be raised as the birds grow to avoid unnecessary feed wastage.

Keep the litter as dry as possible especially under the drinkers. Proper moisture of litter should be between 25-30%.

When checking the barns try to move the birds around as the exercise will help develop strength in their legs. Leg problems will develop if the birds do not get a dark period which allows them to sleep and rest. This is when the bones do most of their growing and develop properly. Therefore if they are on continuous light improper bone growth occurs which inevitably leads to leg problems.

If panic attacks are feared very low light levels with the use of blue bulbs can be used during the dark period from around 16 weeks onwards.

Only use antibiotics if there is a problem with the flock. Using them on a routine basis encourages the growth of resistant strains of pathogens and if a problem does occur the antibiotics are then less effective.

Always keep a separate recovery pen for weaker birds. The sooner weak or injured birds can be moved from the main group, the better the chances of recovery.

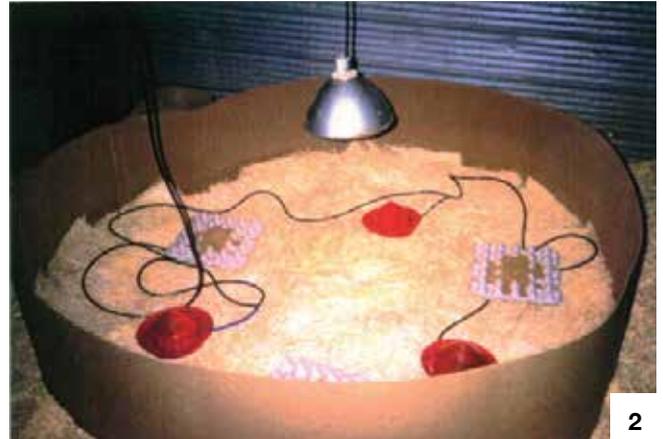
### Keeping records

The more records that can be kept on each flock the better. They will allow you and Source Turkey technical personnel to investigate any problems with the turkeys performance you may have.

- 1 Record daily mortality figures.**
- 2 Record weekly weights and plot them on standard growth graphs (which Source Turkey will supply).**
- 3 If medication is used, record product name, date, dosage etc.**
- 4 Ask the feed company for details regarding feed rations and ingredients and keep them filed.**
- 5 If possible measure feed and water consumption on a daily basis.**
- 6 When feed is delivered always keep a small sample bag of that particular feed for several weeks. If a problem does occur in the flock which may be related to feed, this sample can be analysed.**
- 7 Source Turkey will also consult on a vaccination schedule, therefore, also record date of vaccination, product name, dosage, method of vaccination ie in the drinking water, sprayed or injected etc.**
- 8 The names of everyone entering the barn should be recorded daily.**



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## Vaccination programme for turkeys

The vaccination of turkeys is a routine process in many areas, however due to the complexities of both disease challenges and vaccine protocols no vaccination programme should be instituted without consultation with local veterinarians to assess all factors. An example of a vaccination programme is as follows:

Day 1	TRT by spray in the hatchery or at arrival time on farm
Day 3	Coccidiosis vaccine - drinking water or gel "puck"
Day 14	Newcastle - Hitchner B1 - drinking water
Week 3	TRT - drinking water
Week 4	Hemorrhagic Enteritis - drinking water
Week 7	Newcastle - Hitchner B1 or Lasota strain - drinking water.
Week 9	TRT - drinking water
Week 12	Newcastle - Lasota strain - drinking water

**NOTE:** In case of high risk of exposure to TRT (multiple age farm) it is strongly recommended to vaccinate day-old poults in the hatchery or on the farm at arrival time using a coarse spray. In order to avoid post vaccination reactions make sure that all poults are covered with spray using proper equipment.

In case of high risk of Newcastle Disease, vaccination at week 7 should be done with inactivated oil-emulsion vaccine by subcutaneous injection instead of drinking water vaccination and vaccination at 12 weeks omitted.

### 1 Brooding Ring

- 250 - 300 poults per ring.
- No vitamins for first 7 days.
- Ring radius around 1.80 metres.
- No antibiotics unless turkeys are sick.
- High light intensity for first few days (100 Lux).
- 2cm of drinking space per poult (3 plasson and 3 mini-drinkers per ring).
- 2cm of feed space per poult (6 cardboard feeders and 2-4 egg trays per ring).
- Cool room temperature of 25C max and hot inner ring temperature of 38-40C - choice of temperatures.

### 2 Hospital Ring

- Ample feed and water space.
- Wood - wool to aid weak poults onto their feet.
- Used in the first few days for weak poults (flipovers)
- Not too hot, with electric lamp rather than gas heater.
- Over 70% of flipovers can be saved if placed in such a ring immediately.

## Source Turkey Light Programme

DAY	LIGHTS ON	LIGHTS OFF
1	24 hrs	0 hrs
2	23 hrs	1 hrs
3	22 hrs	2 hrs
4	21 hrs	3 hrs
5	20 hrs	4 hrs
6	18 hrs	6 hrs
7	16 hrs	8 hrs
8	16 hrs	8 hrs
9-kill	16 hrs	8 hrs

Starting after 6 weeks the lights are on for a 2 hour period from midnight till 2 AM

### Light Intensity

Day 1 and 2 around 100 lux. It is recommended that a light meter is used at drinker level to ensure 100lux is reached during early brooding. From then on it can be lowered to around 50 lux.

After 6 or 7 days lower light intensity in order to prevent cannibalism and litter eating.

Growing - natural daylight.

In the growing barn, starting at 7 weeks of age there are two hours of extra light at midnight from 12pm-2am.

Blue lights (15 watt) can be used in the dark period if panic attacks are feared. However the intensity should be very low, ie one blue bulb every 30 metres in the centre of the barn.

### Vitamin D3

Dosage: 1000 international units per poult on day 8, day 10 and day 12. Important - D3 only, i.e. not Multi-vitamins.

Supplied by Hoffman La Roche

One gram = 500,000 I.U.

$$\text{Therefore: } \frac{\text{Number Turkeys} \times 1000 \text{ I.U.}}{500,000} = \text{Dosage in grams/day}$$

Approximate water consumption per day at 10 days of age = 0.10 litres.

Dissolve in a volume of water equal to consumption.

Initial dissolving should be made in a container of warm water.



Weeks of Age	Litres @ 10C-20C	Litres @ 20C-25C	Litres @ 25C-35C	Litres @ +35C
1	38	38	38	38
2	95	114	114	114
3	132	151	170	189
4	189	227	246	265
5	227	265	341	416
6	303	360	435	549
7	379	435	511	568
8	454	549	568	700
9	568	662	738	833
10	625	719	852	1041
11	681	833	946	1136
12	795	908	1079	1211
13	833	1060	1154	1287
14	871	1098	1230	1419
15	871	1098	1230	1419
16	889	1117	1249	1438
17	889	1117	1249	1438
18	889	1117	1249	1438
19	889	1117	1249	1438
20	889	1117	1249	1438
21	889	1117	1249	1438
22	889	1117	1249	1438

**Water Consumption Table** Estimated water consumption in litres per 1,000 birds per day.

The above table was supplied by Nicholas Turkey Breeding Farms. Water consumption will vary with the sex of birds, age, temperature, diet, type of equipment, flock health and a number of other factors.

**Guidelines for Ambient Temperatures for Optimal Growth Rates**

However ventilation should never be compromised.

Age in Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Females	29.4	26.6	23.8	21.1	20.0	19.4	18.9	17.7	17.2	16.6	16.1	15.5	15.5	15.5	16.2	16.2	16.2	...	...	...	...
Males	29.4	26.6	23.8	21.1	20.0	18.3	17.2	15.5	15.5	12.7	11.6	10.5	10.5	11.1	11.6	12.2	12.2	12.2	12.2	12.2	12.2

