 MANAGEMENT ESSENTIALS for Commercial Turkeys

The premier supplier of turkey breeding stock worldwide
Nicholas Turkeys is a primary breeding company developing pedigree lines of birds for the global turkey industry. Through the application of advanced technologies and unique systems in the breeding program, Nicholas is able to utilize a balanced approach to genetic progress. This allows for continuous improvement in both commercial traits such as live weight, feed efficiency and meat yield, as well as welfare-related traits such as robustness, cardiovascular fitness and leg strength.

Achieving this increasing genetic potential depends on:

- An appropriate environment, including temperature and air quality, which meets the birds’ requirements.
- A dietary regime that provides nutrients, in both feed and water, in an appropriate profile.
- An effective biosecurity and disease control program.

All of these are interdependent. If any of these elements are sub-optimal, performance will suffer.

The aim of this booklet is to assist producers of Nicholas turkeys to achieve optimum performance from their birds. It draws attention to essential management issues which, if overlooked, may depress flock performance.

These management techniques will help maintain bird health and welfare, allowing your turkeys to perform well in both live and processing characteristics.

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knowledge, and the expertise, practical skills and experience of the Nicholas technical service team.

While every attempt has been made to ensure the accuracy and relevance of the information presented, Nicholas accepts no liability for the consequences of using this turkey management information.

**BIOSECURITY**

Maintaining a healthy flock is a challenge in the best of circumstances. There are numerous ways to introduce disease organisms into a flock – water, feed, rodents, insects, cats, dogs, raccoon, opossum, birds, equipment and especially people.

The list of diseases is numerous as well: cholera, ORT, bordetella, mycoplasmosis, ‘enteritis,’ blackhead, TRT, erysipelas, colibacilosis, avian influenza and a whole list of salmonella serotypes.

To safeguard the health of the turkeys and consumers, producers must have a strict set of rules designed to prevent poultry from being exposed to infectious diseases. This is the very definition of biosecurity.

An effective biosecurity program requires the identification of the most likely sources of disease, and the establishment of practices designed to suppress the introduction and spread of these pathogens into flock populations.

Following are a few important tips for maintaining this type of rigorous biosecurity program at your own facility.

- Educate your staff. People can be one of the most effective vectors of poultry disease.
- Avoid contact with backyard chickens, waterfowl, quail, wild turkeys, pheasants, companion birds, fighting cockerels, etc. Do not visit live bird markets (flea markets) or those people in contact with them.
- Practice an all-in / all-out policy for stocking farms. If the introduction of new birds in a flock is unavoidable, first seek information on their health status.
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- Practice an all-in / all-out policy for stocking farms. If the introduction of new birds in a flock is unavoidable, first seek information on their health status.
• Monitor mortality closely and report any suspicion of disease to production managers and/or company poultry veterinarians.
• Permit only essential staff and vehicles to enter the farm.
• Keep vehicle traffic (egg and feed trucks, farm staff transportation) to a minimum.
• Ensure any vehicle that must enter a farm is thoroughly clean. Tires should be sprayed with disinfectant before entry to the farm. The floorboard should also be disinfected if any occupant is allowed out of the vehicle on the farm.
• Do not share staff between different species farms and preferably not even between poultry farms.
• Provide clean clothing on each farm. New or freshly laundered clothes should be worn at each facility.
• Change footwear and/or wear shoe covers and use footbaths with disinfectant at the entrance to all poultry accommodations or related buildings.
• Ensure all poultry houses are wild bird proof.

SECTION I: BROODING

OBJECTIVES
To provide an environment from day one that will encourage activity, food consumption, and growth.

To minimize any stresses that negatively impact future growth potential.

PRE-PLACEMENT:

Facility
• Single-age farms will give birds the best opportunity for growth potential and reduce disease risk.
• Properly clean and disinfect barn after each flock.
• Ensure there is a rodent and pest management plan in place for the farm.
• Allow only authorized visitors with proper attire and footwear on the premises.

Shavings
• Use a clean, dry mixture of coarse and fine softwood shavings. Avoid hardwoods and wet sawdust.
• New shavings are recommended for every flock.
• Spread evenly at 3 to 4 inches (75 to 100mm) depth.
• Smooth to level within rings prior to setting up equipment.

Rings
• Use new 12- or 15-inch (300 or 400mm) solid cardboard material for ring construction. Do not reuse cardboard.
• Wire mesh may also be used for rings. They can improve ventilation, particularly in hot weather. When using wire, avoid drafts and carefully clean and disinfect before reuse.
• Ring size should be a minimum of 14 feet (4.25m) in diameter with an area of 150ft² (14m²) for a single stove.
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• Ring size should be a minimum of 14 feet (4.25m) in diameter with an area of 150ft² (14m²) for a single stove.
• One or two stoves can be incorporated into each ring depending on situation.
• Design should be round or oval and have no corners.
• Stove should be suspended level to the litter and in the center of the ring to provide a uniform “hot spot” as well as a uniform temperature at edge of ring. Remember to use safety chains in case a cable breaks.
• No more than 400 hens or 300 toms per stove.
  The fewer poultss per stove will reduce competition for resources.
• Construct one extra ring (“hospital ring”) for every 5,000 poultss housed. Raise brooder stove 12 inches (300mm) higher, and place extra feed in egg flats to create an environment sympathetic to weak or “flip-over” poultss.

**Water**
- Water lines should be shock treated with a highly concentrated chlorine solution or a commercial type of line cleaner within 72 hours of placement.
- Bleach should be applied at one ounce per gallon (30ml / 3.7 liter) of water in the system.
- Let stand for 48 hours.
- Flush lines and drinkers (dump 2-3 times) with fresh, chlorinated water prior to placement.
- Water supply should be fresh and chlorinated (3-5 PPM in the drinker furthest from the source). If using an Oxidation Reduction Potential (ORP) meter, the reading should be a minimum of 650.
- No vitamins or antibiotic should be added at placement (unless for a specific known problem).
- Provide one bell-type drinker per 100 poultss or manufacturer recommended number of poultss/nipple if using nipple drinkers.
- Position each drinker at least 12 inches (300mm) from the stove and/or brooder guard.

• Level drinkers to avoid floods while making sure poultss have good access to drinkers.
• Adjust automatic depth to 3/4 inch (20mm); hand fill to lip prior to placement.
• If using nipple drinkers, double rings are recommended.
• Allow poultss to settle down after delivery before lowering nipple lines into rings.

**Feed**
- Pre-starter crumble should be good and consistent in size with minimal fines.
- Provide one 48-inch (1.2m) trough-type feeder per 100 poultss to equal 1 linear inch (25mm) per poult; or provide a combination of 18-inch (0.5m) red feeders and bucket type - 100 poultss per one bucket and one 18-inch (0.5m) red feeder.
- Position feeders at least 12 inches (300mm) from stove and/or brooder guard.
- Fill with fresh feed immediately prior to placement.
- Consider supplementing 48-inch (1.2m) trough-type feeders with 18-inch (0.5m) red feeders while poultss are in rings for optimum feed consumption.
- Remove any wet or soiled feed from feeders daily.

**Brooder Stoves**
- Confirm that each stove is operating properly.
- Stoves should be lit 24 hours prior to poult arrival to warm room and shavings. A minimum of 12 hours prior to poult arrival, set stoves to reach starting target temperature.
- Target a 3-4 foot (1.0-1.3m) “hot spot” of 110-115°F (43-46°C) in the center of the ring.
- Adjust all stoves to desired height above the litter:
  • Conventional – 24 inches (0.6m)
  • Infrared – 40 inches (1m)
• One or two stoves can be incorporated into each ring depending on situation.
• Design should be round or oval and have no corners.
• Stove should be suspended level to the litter and in the center of the ring to provide a uniform “hot spot” as well as a uniform temperature at edge of ring. Remember to use safety chains in case a cable breaks.
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• Adjust all stoves to desired height above the litter:
  • Conventional – 24 inches (0.6m)
  • Infrared – 40 inches (1m)
- Confirm that the cycling of each stove provides a hot spot of no less than 105°F (40°C) and no more than 115°F (46°C) at any time.
- Set zone-controlled systems so that the majority of stoves are within target range. Stoves that are hotter or cooler than target should be physically raised or lowered to achieve the desired temperatures.
- Stove and ventilation adjustments should result in a temperature gradient of a maximum of 30°F (12°C) between the hot spot and the perimeter of the ring when the stove is running (measured at bird level).
- Check propane level in tank.

**Ventilation and temperature control**
- Confirm that stoves are properly set and that all ventilation equipment is operational.
- Calibrate all thermostats to enable accurate settings.
- Set fan thermostats according to target temperature. Thermostat fans should begin to come on at 2°F (0.5-1.0°C) above target temperature.
- Adjust ventilation to provide the minimum CFM’s required according to the lowest anticipated outside temperatures.
- With fan timers “off,” the minimum ventilation thermostats should not operate desired fans for more than 20% of the time. If minimum ventilation fans (stage 1) run for:
  - more than 20%, adjust target temperature up by 2°F (0.5-1.0°C) at a time.
  - less than 20%, adjust target temperature down by 2°F (0.5-1.0°C) at a time.
- Adjust all vents to the same opening. For wintertime ventilation a portion of vents may need to be closed off completely.

- Use slow speed mixing fans to reduce temperature stratification and improve heating efficiency. Small 18-24 inch / 45-60cm fans are recommended hanging close to ceiling at approximately 50-60 feet (15-18m) apart.
- Seal up cracks and areas where air can leak in, causing drafts and heat loss.
- Set background heat source(s) at 3°F (1.0-1.5°C) less than target temperature.

**Lighting**
- Use one 75-100 watt brooder light per stove to prevent shadows and draw poultts to heat source. Use only while poultts are in rings.
- Provide a minimum of 5 footcandles (50 lux) of light in house.
- Provide poultts with full light for the first 24 hours. Afterwards, poultts should have 6-8 hours of continuous darkness per night.

**PLACEMENT OF POULTTS & DAY ONE:**

**Placement**
- Place as early in the day as possible and provide poultts with full light for the first 24 hours.
- Move quickly through barn every hour (or more if needed) to check activity of poultts, confirm that all equipment is operating correctly, and make any necessary adjustments.
- Remove weak poultts and “flip-overs” from rings and place in “hospital rings.”
- Minimize excessive noise and activity in the brooding area.

**Water**
- Hand fill drinkers as needed to keep fresh and full (at least twice daily).
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- Minimize excessive noise and activity in the brooding area.

**Water**

- Hand fill drinkers as needed to keep fresh and full (at least twice daily).
• Clean as needed throughout the day to remove shavings and manure.
• Adjust height as litter settles to ensure constant accessibility.
• Empty, clean, and refill drinkers prior to the end of the day.

**Feed**
• Adjust and level as needed to ensure constant accessibility.
• Minimize shavings and manure in feeders.
• Add fresh feed by the end of the first day, or sooner if needed.

**Heat**
• Confirm each stove is working properly. Hot spot temperature should not fall below 100°F (37°C) during the hottest part of the day or rise above 115°F (46°C) during the coolest part of the day.
• Adjust individual stove settings according to poult activity and feed and water consumption.

**Ventilation**
• Maintain target background temperature and static pressure.

**Lights**
• Provide poults with full light for the first 24 hours.
• Provide a minimum of 6-8 hours light post placement.
• Allow poults to bed down with natural light (if applicable).

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## TROUBLESHOOTING POULT PROBLEMS AFTER PLACEMENT

**Poults huddling or chirping loudly**
• Excessive barn temperatures make it more difficult for poults to find the hot spot provided by the brooder stove.
• Excessive heat may be radiating up from the floor to the poults. If the floor is too hot, remove the ring and add a thick bed of shavings or expand the ring diameter.

**Poults are not drinking**
• Either they cannot drink or do not feel like drinking.
• Ensure drinkers are adjusted properly, height and depth, and that the water is fresh.
• Manually fill bell type drinkers to the top (running water will attract poults, as will the reflection on the top of the filled drinker).
• Test chlorine level in drinkers to ensure no more than 3-5 PPM.
• Ensure no residual disinfectant or other chemicals are in the system.
• Ensure that the environment in the ring provides adequate temperature, fresh air and lighting.

**Poults are not eating**
• Either they cannot eat or do not feel like eating.
• Manually fill all feeders to the top to enable poults to see feed.

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**Excessive flip-overs or weak poults**
• Can be caused by overheating in the hatching, transporting or early brooding of the poults.
• All weak or flip-over poults should be placed in “hospital rings.” (See Section 1, Rings)
• Ensure ample water and feed supply.
• Temperature should not exceed 100°F (37°C) within the ring.
• Return recovered poults to general population.
• Clean as needed throughout the day to remove shavings and manure.
• Adjust height as litter settles to ensure constant accessibility.
• Empty, clean, and refill drinkers prior to the end of the day.

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• Adjust individual stove settings according to poult activity and feed and water consumption.

**Ventilation**
• Maintain target background temperature and static pressure.

**Lights**
• Provide poultsts with full light for the first 24 hours.
• Provide a minimum of 6-8 hours light post placement.
• Allow poultsts to bed down with natural light (if applicable).

**TROUBLESHOOTING POUTL PROBLEMS AFTER PLACEMENT**

**Poults huddling or chirping loudly**
• Excessive barn temperatures make it more difficult for poultsts to find the hot spot provided by the brooder stove.
• Excessive heat may be radiating up from the floor to the poultsts. If the floor is too hot, remove the ring and add a thick bed of shavings or expand the ring diameter.

**Poults are not drinking**
• Either they cannot drink or do not feel like drinking.
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• Manually fill bell type drinkers to the top (running water will attract poultsts, as will the reflection on the top of the filled drinker).
• Test chlorine level in drinkers to ensure no more than 3-5 PPM.
• Ensure no residual disinfectant or other chemicals are in the system.
• Ensure that the environment in the ring provides adequate temperature, fresh air and lighting.

**Poults are not eating**
• Either they cannot eat or do not feel like eating.
• Manually fill all feeders to the top to enable poultsts to see feed.

• Confirm that there is at least a 10°F (5°C) variation from hottest to coolest areas of the ring when the stove is not running.
• Adjust stove height and/or thermostat and ventilation to target proper variation.
• Ensure that maximum temperature under the stove does not exceed 115°F (46°C) during the coolest time of the day.

**Excessive flip-overs or weak poultsts**
• Can be caused by overheating in the hatching, transporting or early brooding of the poultsts.
• All weak or flip-over poultsts should be placed in “hospital rings.” (See Section 1, Rings)
• Ensure ample water and feed supply.
• Temperature should not exceed 100°F (37°C) within the ring.
• Return recovered poultsts to general population.
• Stir, top off or replace feed in feeders. The smell of fresh feed will attract poults.
• Check for excessive level of salt in feed.
• Ensure that the environment in the ring provides adequate temperature, fresh air and lighting.
• Avoid attempts to stimulate poults with human activity; this may make the situation worse.

DAYS TWO THROUGH SIX

Litter
• Remove caked and wet litter daily.
• Stir litter around and underneath equipment.
• Add new shavings as needed.

Water
• Empty, clean and move drinkers at least daily.
• Adjust depth to maintain 3/4 inch (20mm).
• Adjust height to maintain lip of drinker at the average poults’ back.
• Gradually remove (25% per day) and adjust manual starter equipment as needed to keep clean and manageable.
• Minimize spillage.

Feed
• Do everything possible to encourage the consumption of feed.
• Dispose of contaminated feed daily.
• Move feeders as needed to minimize litter buildup.
• Refill and top off feeders in the morning and evening (more often if needed) to help develop eating patterns.
• Minimize spillage of feed into the litter.
• Assuming automatic feeders are accessible, gradually remove (25% per day) manual/starter feeders beginning on the 4th day.

Heat
• Maintain temperature gradient and poults’ activity.
• Make adjustments during the coolest part of the day.

Ventilation
• Maintain minimum ventilation.
• Adjust as needed to maintain background target temperature and static pressure.
• Make adjustments during the coolest part of the day.

Lights
• Provide a minimum of 14 hours of light per 24-hour period.
• Reduce intensity depending on activity, food consumption, and cannibalism.
• Dark periods of more than 4 hours at a time may limit feed consumption.

Rings
• Combine rings as appropriate (after 3 days).
• Utilize rings through minimum of 5 days.
• Make all changes in ring configuration early in the day.
• Stir, top off or replace feed in feeders. The smell of fresh feed will attract poults.
• Check for excessive level of salt in feed.
• Ensure that the environment in the ring provides adequate temperature, fresh air and lighting.
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• Utilize rings through minimum of 5 days.
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SECTION II: GROWING

Objectives
To provide an environment that can allow the bird to reach performance goals.

To minimize any stressors that negatively impact growth potential.

Litter
- If utilizing built-up litter, remove caked or crusty litter from under feeders and drinkers between every flock and add top-dress litter for a minimum total depth of 4-5 inches / 10-13cm.
- Tilling weekly or as needed during the flock will optimize foot pad and leg integrity.
- Consider using a litter amendment for ammonia control in extremely cold weather conditions.
- Utilize static pressure ventilation to control litter moisture and dust.
- Do NOT compromise litter conditions for fuel savings.

Water
- Provide one (1) bell-type drinker per 100 males and (1) bell-type drinker per 150 females.
- Change drinkers to adult bell by 5-6 weeks of age.
- Maintain depth at 1/2 to 3/4 inch (12-20mm), depending on drinker style, drinking activity and litter conditions.
- Maintain lip of drinker even with height of the average birds’ backs.
- Continue to chlorinate to target 3-5 PPM free chlorine in the drinker furthest from the source. If using an Oxidation Reduction Potential (ORP) meter, the reading should be a minimum of 650.
- Clean drinkers daily.
- During hot weather, flush overhead lines to provide fresh, cool water.

Feed
- Ensure feed is available when the birds are delivered.
- Do everything possible to encourage the consumption of feed.
- Provide one (1) feed pan per 75 birds.
- Change to adult equipment (usually by 6-8 weeks of age) and adjust based on spillage and bird activity at feed pans.
- Maintain lip of feed pan even with the height of the average birds’ backs.
- Check bins, augers, hoppers, etc. regularly for accumulation of moldy feed.
- In extreme heat conditions consider withdrawing feed during the hottest part of the day to lower metabolic temperature and allow birds to handle heat better.

Heat
- After 7 days, begin to reduce heat input by no more than 2°F (0.5-1.0°C) at a time to achieve target room temperatures.
- Use background heaters to help maintain room temperature once rings are removed; set thermostats at 3°F (1.5°C) below target room temperature.
- Utilize heat as needed to reduce litter moisture (with increased ventilation).
- Do NOT compromise air quality for fuel savings.

Ventilation
- Confirm that all ventilation equipment is operational.
- Calibrate all thermostats to enable accurate settings.
- Adjust fan thermostats according to target temperature. Thermostat fans should begin to come on 2°F (1°C) above target temperature.
SECTION II: GROWING

Objectives
To provide an environment that can allow the bird to reach performance goals.

To minimize any stressors that negatively impact growth potential.

Litter
- If utilizing built-up litter, remove caked or crusty litter from under feeders and drinkers between every flock and add top-dress litter for a minimum total depth of 4-5 inches / 10-13cm.
- Tilling weekly or as needed during the flock will optimize foot pad and leg integrity.
- Consider using a litter amendment for ammonia control in extremely cold weather conditions.
- Utilize static pressure ventilation to control litter moisture and dust.
- Do NOT compromise litter conditions for fuel savings.

Water
- Provide one (1) bell-type drinker per 100 males and (1) bell-type drinker per 150 females.
- Change drinkers to adult bell by 5-6 weeks of age.
- Maintain depth at 1/2 to 3/4 inch (12-20mm), depending on drinker style, drinking activity and litter conditions.
- Maintain lip of drinker even with height of the average birds’ backs.
- Continue to chlorinate to target 3-5 PPM free chlorine in the drinker furthest from the source. If using an Oxidation Reduction Potential (ORP) meter, the reading should be a minimum of 650.
- Clean drinkers daily.

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Ventilation
- Confirm that all ventilation equipment is operational.
- Calibrate all thermostats to enable accurate settings.
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**Lighting**

- Birds should have a minimum of 4 hours of continuous darkness in a 24-hour time period. Periods of 8-10 hours of darkness are recommended.
- Lighting can be increased to 24 hours during the week prior to market to prepare birds for loading.
- During periods of extreme heat, lighting should be monitored to make sure birds have adequate time to recover from the heat of the day.
- During periods of extreme cold, lighting should be monitored on younger flocks so that the temperature is not dropping too low in the barn.
- Light intensity and day length will influence activity, feed consumption, and cannibalism; adjust as needed.

**SECTION III: CLEANING AND DISINFECTION**

An essential element to keeping your farm free of disease is the proper cleaning and disinfection of your barns. Diseases and other pathogens can be introduced in numerous ways. Taking the time to clean and properly disinfect can help to reduce this risk and break disease cycles.

**Brooder House**

- Bait for rats and mice. Rotate types of baits used quarterly.
- Remove litter, dust and debris from barn.
- Wash house down with water and a detergent product using a pressure washer.
- After barn is dry, disinfect using an approved disinfectant. Spray to the point of run-off. Remember, cleaning, washing and disinfection are three separate steps.
- Wash and disinfect any supplemental brooding equipment before bringing it back into the barn.
- Treat for insects, e.g. flies, darkling beetles, etc., as required. Rotate insecticide products to avoid building resistance.
- Clean and disinfect waterlines and any supplemental drinkers after every flock. Flush lines and drinkers (dump 2-3 times) with fresh, chlorinated water after using any type of chemical.
- Do not enter clean building without proper biosecurity procedures. Keep doors closed and locked to keep unauthorized visitors and animals from entering barn.
- Bring shavings into the barn once it is thoroughly dry. Applying shavings to a wet floor can promote the growth of mold.
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**Growout - Total Cleanout**

- Bait for rats and mice. Rotate types of baits used quarterly.
- Empty feed pans, hoppers, and feed bins.
- Remove all litter.
- Dry clean house using backpack blower or broom paying special attention to screens, fan housing, vents, and louvers.
- Wash house with water and detergent product using a pressure washer.
- Scrape/sweep floor down to bare floor.
- After barn is dry, disinfect using an approved disinfectant. Spray to the point of run-off. Remember, cleaning, washing and disinfection are three separate steps.
- Treat for insects, e.g. flies, darkling beetles, etc., as required. Rotate insecticide products to avoid building resistance.
- Keep doors closed and locked to keep unauthorized visitors and animals from entering barn.
- Keep vegetation growth next to barn to a minimum.
- Clean and disinfect waterlines after every flock.
- (See **Section 1, Water**)
- Remove drinkers from the barn to clean and sanitize them separately from the house wash down and disinfection process.
- Consider treating dirt or clay pad with acid type of litter treatment (e.g. PLT or Poultry Guard). This type of treatment can be effective in reducing such pathogens as E.Coli, salmonella and clostridium.
- Bring all cleaned and disinfected equipment back into barn.
- Add new litter onto dry pad.

**Growout – Non-Total Cleanout**

*(not recommended for regions or farms with previous health issues)*

- Bait for rats and mice. Rotate types of baits used quarterly.
- Dry clean house using backpack blower or broom paying special attention to screens, fan housing, vents, and louvers.
- Wash and disinfect barns annually following wash-down and disinfection procedures, even if litter is not being removed.
- Remove all caked and wet litter. Litter forks work exceptionally well to remove caked litter and leave dry loose material underneath. Till up and level remaining litter. Top-dress with either new shavings or recycled brooder litter.
- Treat for insects, e.g. flies, darkling beetles, etc., as required. Rotate insecticide products to avoid building resistance.
- Clean and disinfect waterlines after every flock.
  (See **Section 1, Water**)
- Barns are ready to be re-populated.
Growout - Total Cleanout

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- Remove all litter.
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- Treat for insects, e.g. flies, darkling beetles, etc., as required. Rotate insecticide products to avoid building resistance.
- Clean and disinfect waterlines after every flock.
(See Section 1, Water)
- Barns are ready to be re-populated.
## Daily Water Consumption based on 1,000 Turkeys

(weight, diet & health may affect consumption)

### GALLONS

<table>
<thead>
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(Weight, diet & health may affect consumption)

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# Target Environment Temperatures for Nicholas Commercial Stock

**Target = Temperature at which fan thermostats should be set to maintain.**

<table>
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**Maximum** = Temperature above which all available fans should be “ON.”

**Minimum** = Temperature below which supplemental heat should be provided.

ALL TEMPERATURES MEASURED 4 inches (10cm) ABOVE FLOOR IN CENTER OF BARN
# Target Environment Temperatures for Nicholas Commercial Stock

**TARGET***

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**MINIMUM***

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</tbody>
</table>

*Target = Temperature at which fan thermostats should be set to maintain.

**Maximum = Temperature above which all available fans should be “ON.”

**Minimum = Temperature below which supplemental heat should be provided.

ALL TEMPERATURES MEASURED 4 inches (10cm) ABOVE FLOOR IN CENTER OF BARN
For further information on raising Nicholas turkeys, contact your local technical service representative or a Nicholas sales office.

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NOTES:
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