

PART 1:

INFRASTRUCTURE AND SET-UP

By Walter Hildebrandt



WHAT WE WILL BE COVERING TODAY:

- Feed Supply & Storage
- Water Supply
- Ventilation
- Lighting



FEED SUPPLY

- **Where will you get the feed from**
 - Trustworthy supplier
 - Distance from source to farm
 - Technical support/service
- **How will you get the feed to the farm**
 - Bags or Bulk
 - Own transport or delivered
- Consistency is key



FEED STORAGE

- **Bulk Storage**
 - Reputable supplier – Buying cheap could be expensive
 - Silos/Bulk bins – Size
 - Clearly marked for deliveries
 - Clean out after every cycle
 - Waterproof
- **Bag Storage**
 - Dry, clean area
 - Good ventilation
 - Not on the floor
 - Clearly marked
 - Enough space
 - Easy access



WATER SUPPLY

- **Enough clean water**
 - Source
 - Reliability
 - Quality
 - Pressure
- **Supply to the house**
 - Header tanks
 - Manual filling



WATER SUPPLY

Water to Feed ratio at different ambient temperatures

Temperature °C	Ratio Water:Feed
4	1.7:1
20	2:1
26	2.5:1
37	5:1

VENTILATION

- **To supply a good healthy environment for optimal production**
 - Providing fresh clean air
 - Removes excess moisture
 - Prevents build-up of harmful gasses/ dust
 - Control of heating in the house
- **2 Types**
 - Natural Ventilation
 - Power Ventilation
 - Controlled environment housing



VENTILATION

- **Curtain sided housing**
 - Make sure curtains close properly, no air leaks
 - Must open from top to bottom
 - Preferably open in one even line
 - Curtains must be able to open to different heights



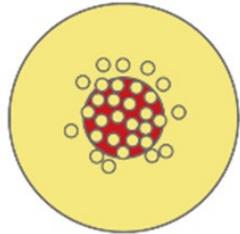
VENTILATION

- **Air quality test: (30-60s after entering the house)**
 - Is it stuffy inside
 - Is air quality acceptable
 - Is the humidity too high
 - Is it too fresh in the house
- **Bird activity test:**
 - 1/3 feeders
 - 1/3 drinkers
 - 1/3 resting
 - Overall appearance of the birds



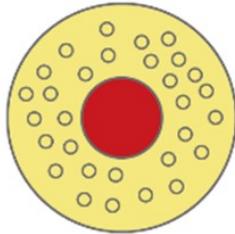
HEATING

AGE (Days)	RELATIVE HUMIDITY (%)	TEMPERATURE (°C)
0	30 - 50	32 - 38
7	40 - 60	29 - 30
14	50 - 60	27 - 28
21	50 - 60	24 - 26
28	50 - 65	21 - 23
35	50 - 70	19 - 21
42	50 - 70	18



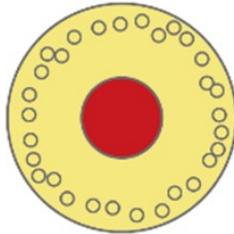
Too cold

- Chicks crowd towards brooder.
- Chicks noisy, distress-calling.



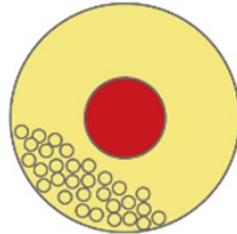
Correct temperature

- Chicks evenly spread.
- Noise level signifies contentment.



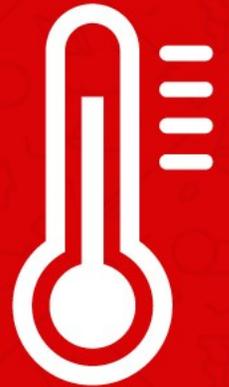
Too hot

- Chicks make no noise.
- Chicks pant, head and wings droop.
- Chicks keep away from brooder.



Requires investigation

- Check for a draught, uneven light distribution or external noise.



LIGHTING

- **Sources**
 - Incandescent (R81.17/cycle)
 - Fluorescent (R25.41/cycle)
 - LED (R11.60/cycle)
- **Intensity**
 - 0 - 7 days = 30 - 40 lux
 - 8 - slaughter = 5 - 10 lux
- **Transition from dark to light and light to dark needs to be gradual – 45min**
- **Consistency is key**



LIGHTING

AGE (Days)	HOURS (Dark)
0	0
1	1
Chicks between 100 – 160 grams	9
22	8
23	7
24	6
5 days before slaughter	5
4 days before slaughter	4
3 days before slaughter	3
2 days before slaughter	2
1 day before slaughter	1



BROILER SET-UP CHECKLIST

- Adequate space to store feed
- Water supply and pressure
- Curtains check (open/close properly)
- Before Chick delivery:
- House cleaned and disinfected
- House environment check
 - Air Temp at ground level - 32°C
 - Relative Humidity – 50%
 - Lighting works properly – dimmers put lights on slowly/gradually
- Feed in place, main feeders and additional feed on paper
- Water lines flushed and clean, fill drinkers
- Litter evenly spread



PART 2:

INFRASTRUCTURE AND SET-UP

By Sipho Mvuyana



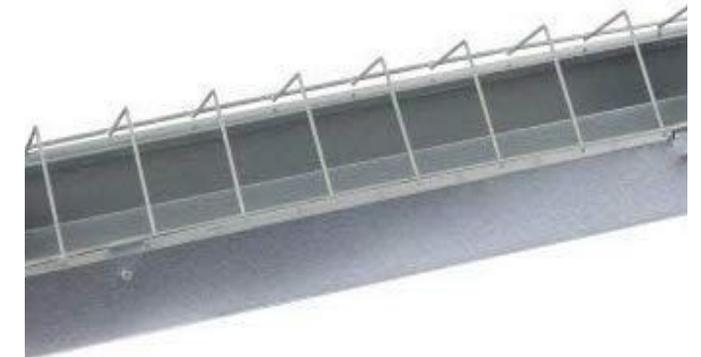
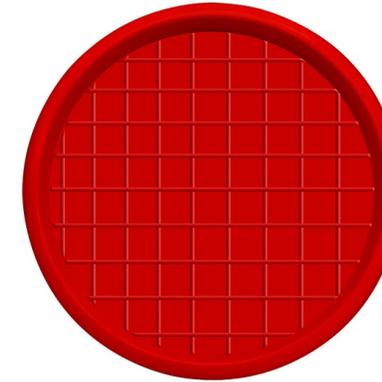
WHAT WE WILL BE COVERING TODAY:

- Feeders
- Drinkers
- Bedding
- Stocking density
- Biosecurity



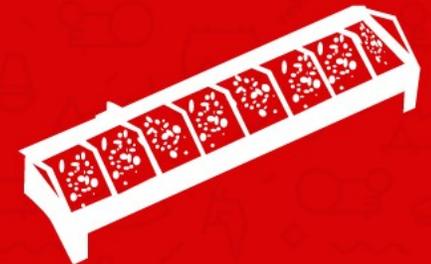
FEEDERS

- Feeders: equipment used to supply feed to chickens.
- There various types of feeders
 - Feed Pans are used for the first few days when chicks are young and can't reach on the feeders.
 - Mini feed trough are used for relatively older chicks. Anti-wastage lid minimizes feed spillages.
 - Bucket feeders are used for older birds, it makes for easy feed refiling.
 - Tube feeders are used to supply old birds. Feed dispensation can be adjusted.
 - Feed troughs are used for old birds in large farm where hand feeding would otherwise be labour intensive and time consuming.
 - Chain Feeders are automated feed troughs.



FEEDERS RECOMMENDATION

- **Insufficient feeding space will reduce growth rate and cause poor flock uniformity.**
- **Main feeding systems:**
 - Pan feeders: 45-80 birds per pan (lower ratio for bigger birds)
 - Tube feeders: 38/40 cm diameter (70 birds per tube)
 - The base of the trough or pan should be level with the birds back.
- **Space feeders and drinkers equal distance from each other.**
- **Avoid placing feeders in closer to the house corners as this limit feeding space and often leads stamped.**
- **Do not place feed directly underneath heating source.**



DRINKERS

- **Drinkers:** Used to supply chickens with water.
- There are different types of drinkers: Fountains, Bell drinkers, water lines/ nipple drinkers.



**Chick
Founts**



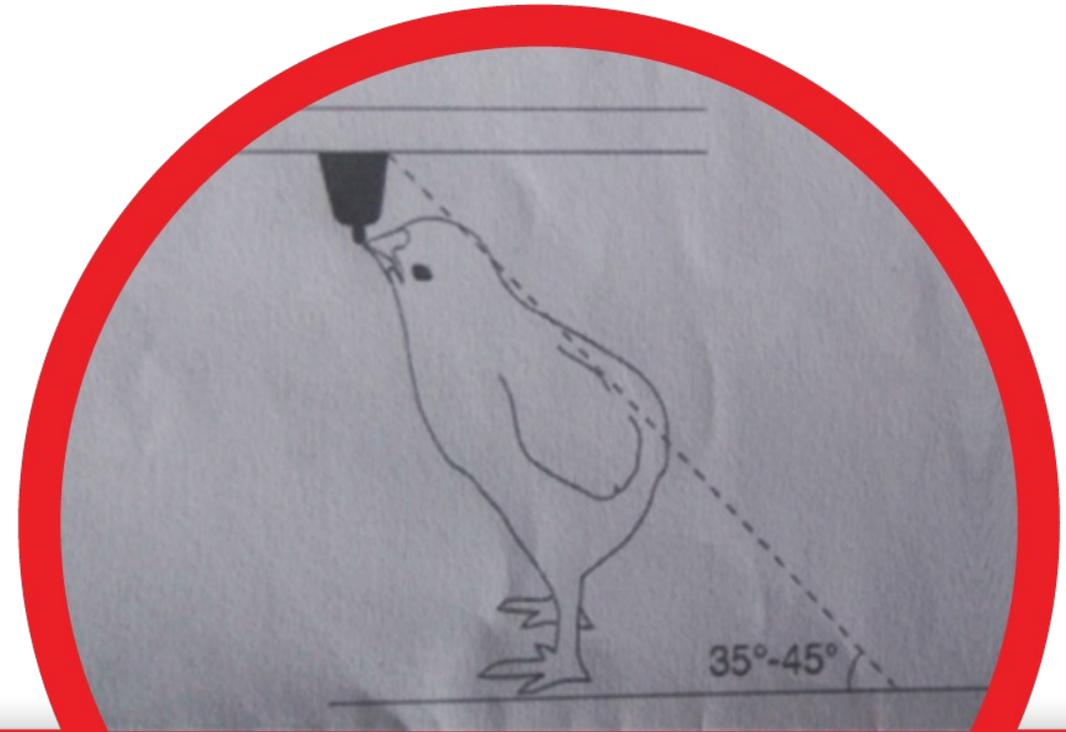
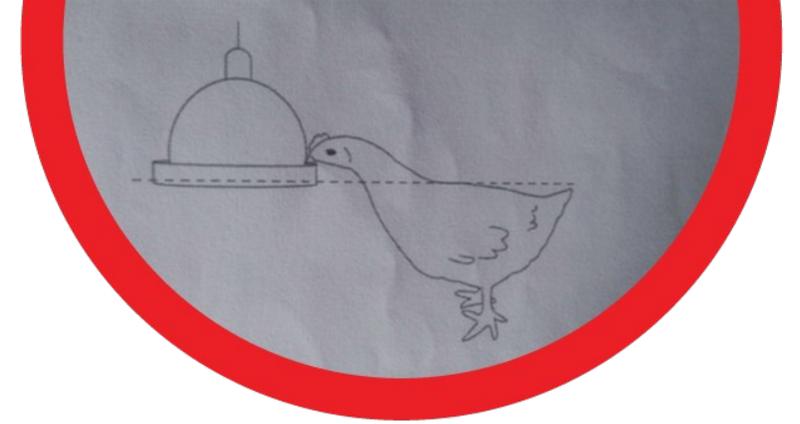
**Bell/ Ballast
Drinkers**



**Nipple
Drinkers**

DRINKER HEIGHT

- Adjust height of drinkers as chickens grow to avoid water spillages.
- Ideal drinker height is at the 'shoulders' of standing chicken for bell drinkers and at 35° – 45°.
- Chicken feet must be standing flat on the surface all the time.



DRINKER RECOMMENDATION

- Nipples or bell drinkers should be eye level the 1st three days.
- After that slowly adjust upward so that the chicks has to reach up to nipple with feet flat on the floor.
- Bell drinkers (40cm diameter), min of 6/1000 chicks, as birds become older, min 8/1000 birds OR work on 100 birds/ bell drinkers if you are not certain.
- Always check that water is clean, cool and drinkable.
- Control water pressure to avoid water spillages.



BEDDING

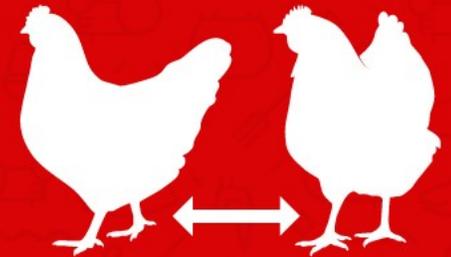
- **Bedding:**
 - Absorbs moisture
 - Dilutes excreta thus minimising bird to manure contact
 - Provide insulation from cold floor temperatures.
- **Minimum depth of litter:**
 - Wood shavings = 2.5 cm
 - Chopped straw = 1kg/m²
 - Sunflower hulls = 5 cm
- **Wood shavings are preferred, sawdust is discouraged.**
- **Wet litter/ bedding should always be turned or changed.**



STOCKING DENSITY

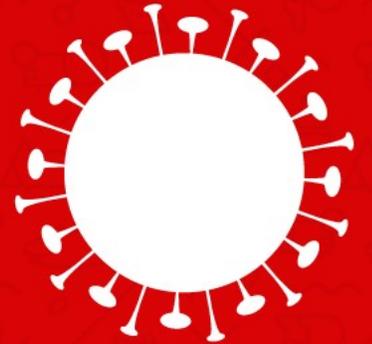
- **Stocking Density:** refers to the number of birds you can keep per square meter (m²).
- **It is a management decision and it is highly influenced by:**
 - Government regulations in that region (animal welfare).
 - Type of house used: basic houses stock less birds than automated houses.
 - Prevailing temperatures in that regions.
 - Selling weight and age
- **Stocking density is an economical factor/ decision:** The less chickens you place/ m², the less profit you will get per flock.
- **Industry Average SD is 12 - 14/m² for a standard broiler house.**
- **EPOL** Advisor can assist you with the correct SD for your region.

m²



BIO-SECURITY

- To Bio-secure – to guard against harmful biological organisms (in Poultry).
- Bio-security is, therefore a series of measures designed to protect and or to mitigate the risk of farm to farm and inter-flock virus and bacteria transfer (disease transmission).
- Good bio-security = Healthy Chickens



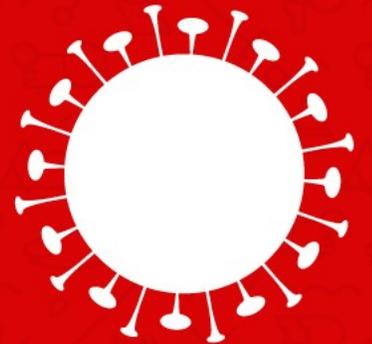
FARM BIOSECURITY MEASURES

- Farm should be fenced.
 - Beefs up farm security, mitigating stock theft.
 - Helps limit and control movement into the farm.
 - Keeps large animals and unwanted animals out of the farm.



BIOSECURITY MEASURE: LIMIT VISITS

- **Limit visitors to farm. Decline unnecessary visits.**
 - Every visit poses a biosecurity risk to you flock.
- **Ideally: 48 hours period should be observed before visiting the next poultry farm.**
- **Keep record of visitors and their previous farm visits.**
 - Keep register for reference and traceability purposes.



BIOSECURITY MEASURE: DISINFECTING

- Wheel dips or spraying facilities must be in place at the gate.
- House must be disinfected at the end of every cycle.
- Footbaths must to be provided at the door for each chicken house.
- For large scale commercial farms: a shower house is also strongly advised.



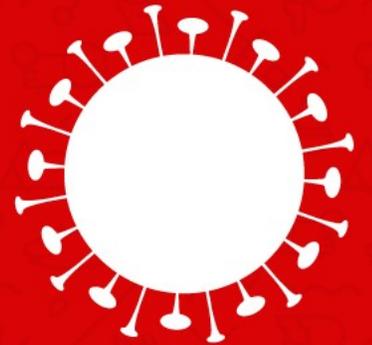
BIOSECURITY MEASURES: PPE

- Provide Farm PPE for employees and visitors alike (workwear and boots).
 - Curbs spread of diseases on the farm.
 - Protects employees from dangers on the farm.



BIOSECURITY MEASURES: MOVEMENT OF PEOPLE & ITEMS

- Equipment coming onto farm must be thoroughly cleaned and disinfected.
- Those working and or visiting the farm should visit youngest flocks first and oldest flocks last.
- Avoid contact with other poultry and poultry farms.



BIOSECURITY MEASURE: MESH WIRE

- Houses should be vermin proof (vermin control plan in place)
 - Keeps rodents and birds out of the houses.



THANK YOU

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