

Raising Poultry for Youth Market Poultry Shows in Texas

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TEXAS A&M
AGRILIFE
EXTENSION



The Secret to Success

1. Good nutrition
2. Good housing
(provides perfect environment for birds)
3. Exceptional management
(lots of time and hard work)



Good Nutrition

- There is no secret to good nutrition.
- Be careful of fancy feeding programs and additives
- There are many “experts” who have never won a show, but have most likely prevented others from winning with their “good” advice.

Things to Keep in Mind

- A bird eats to meet an energy requirement
 - As a bird ages, its energy requirement increases
 - Feeds that are high in protein are low in fat
- Make feed changes to meet the birds' needs
- Crumbles vs. Pellets
 - Crumbles for chicks, pellets for older birds

Broiler Feeding Program

- Turkey Starter – 1 lb/bird
 - 28-31% protein
 - ~7-10 days
- Broiler Starter
 - 24-26% Protein
 - Feed through 3 to 4 weeks
- Broiler Finisher
 - 21-23% Protein
 - Last couple of weeks

Turkey Feeding Program

- Turkey Starter
 - 28-31% protein
 - Until 8 to 10 weeks of age
- Turkey Grower or Show Broiler Starter
 - 22-26% protein
 - Until 12-16 weeks of age
- Turkey Finisher or Show Broiler Finisher
 - 18-22% protein
 - for remainder of feeding until the show

Wet (Mash) Feeding

- The purpose is to encourage and increase feed intake
- Recipes vary a great deal
- Main ingredients
 - Fat and Feed
- Not necessary to add milk products
- Broilers
 - Start 14-17 days before show – increase frequency as show approaches
- NOT recommended for turkeys

VFD

- ***As of January 1, 2017, all medically important antibiotics to be used in feed or water for food animal species require a Veterinary Feed Directive (VFD) or a prescription.***
- FDA requires veterinary oversight whenever medically important antibiotics are administered to any food animal species via feed or water, ***even if the animals are not intended for food production.*** From pet rabbits and pigs, to backyard poultry, to large livestock farms, the same restrictions apply.

VFD

- The government has placed medications into categories based on their importance to human medicine. Examples of drugs considered critically or highly important to humans include Excede, Draxxin, Lincomycin, Penicillin and the Tetracyclines.
- The only antibiotics considered not important are Bacitracin, Meccadox, Tiamulin (Denegard), Narasin, and Bambermycin.

Drugs Transitioning From OTC to VFD Status (from FDA website)

Established drug name	Examples of proprietary drug name(s)
chlortetracycline (CTC)	Aureomycin, CLTC, CTC, Chloratet, Chlorachel, ChlorMax, Chlortetracycline, Deracin, Inchlor, Pennchlor, Pfichlor
chlortetracycline/sulfamethazine	Aureo S, Aureomix S, Pennchlor S
chlortetracycline/sulfamethazine/ penicillin	Aureomix 500, Chlorachel/Pfichlor SP, Pennchlor SP, ChlorMax SP
hygromycin B	Hygromix
lincomycin	Lincomix
oxytetracycline (OTC)	TM, OXTC, Oxytetracycline, Pennox, Terramycin
oxytetracycline/neomycin	Neo-Oxy, Neo-Terramycin
penicillin	Penicillin, Penicillin G Procaine
sulfadimethoxine/ormetoprim	Rofenaid, Romet
tylosin	Tylan, Tylosin, Tylovet
tylosin/sulfamethazine	Tylan Sulfa G, Tylan Plus Sulfa G, Tylosin Plus Sulfamethazine
virginiamycin	Stafac, Virginiamycin, V-Max

Show Poultry Housing

- Does not need to be fancy
- Does not have to be a new, permanent or separate structure (for chickens)
- Turkeys require a more substantial structure than chickens

Housing Must Provide

- Protection from weather extremes
 - precipitation
 - Adjust to winter and summer conditions
- Protection from predators
 - particularly at night
- Provide a comfortable environment to maximize growth

Broiler pen inside another building

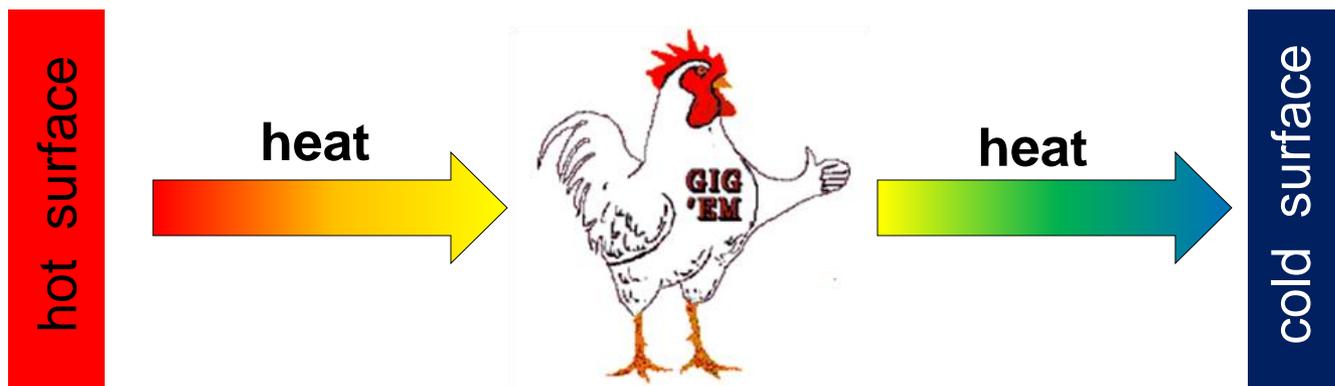


Understanding Heat Transfer

- Birds gain or lose heat in 4 ways:
 - Radiation
 - Conduction
 - Convection
 - Evaporation

Understanding Heat Transfer

- Radiation – transfer of heat from warm object to cooler object by electromagnetic waves (infrared energy)
 - cold floors, walls and roof will cool birds
 - hot floors, walls and roof will heat birds
 - combat radiant heat transfer with **insulation**



Understanding Heat Transfer

- Conduction – heat transfer through a solid medium (transfer by contact)
 - very important for chicks
 - mainly through contact with the litter or ground
- Convection – heat transfer by movement of air or fluid
 - air movement a key factor for cooling birds
 - higher air speed = more cooling (wind chill)

Understanding Heat Transfer

- Evaporation – heat transferred during the process of changing water from a liquid to a vapor
 - important cooling mechanism for birds
 - birds do not sweat
 - as air moves through lungs, evaporation occurs, and thus heat transfer occurs (accelerated during panting)
 - water lost in the process
- ★ as humidity increases, evaporation efficiency decreases

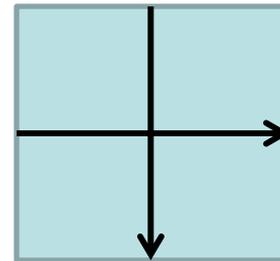
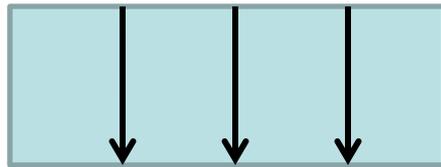
Principles of Housing Design

- **Shape of house**

- Rectangular superior to square

- Natural ventilation

- want to minimize the distance air must travel through naturally ventilated houses



- Mechanical ventilation

- holding ventilation rate constant, air speed increases as cross-sectional area decreases



Principles of Housing Design

- **Orientation**

- Long axis east-west
- Minimizes wall area directly facing sun
- For naturally ventilated houses:
 - minimizes direct sunlight shining into house
 - takes advantage of prevailing south wind in summer

Principles of Housing Design

- **Materials**

- Metal is fine for exterior walls and roof
- Metal not recommended for interior surfaces
 - metal is an excellent conductor of heat (radiant heat transfer)
 - Insulation can help
- Cleaning and disinfection should be considered for interior surfaces
 - lower porosity materials are easier to clean
 - paint can help to seal wood surfaces for easier cleaning

Principles of Housing Design

- **Roof Overhangs**

- essential to prevent rain or direct sunlight from entering the house
- provides shade for sidewalls, keeping the house cooler
- proper overhang is a function of side wall height and proximity of the side wall opening is to the ground
 - the taller the house, the longer the overhang should be
 - the closer the side wall opening is to the ground, the longer the overhang should be
- 2 ft. is a good rule of thumb to start with

Principles of Housing Design

- **Stir fans**

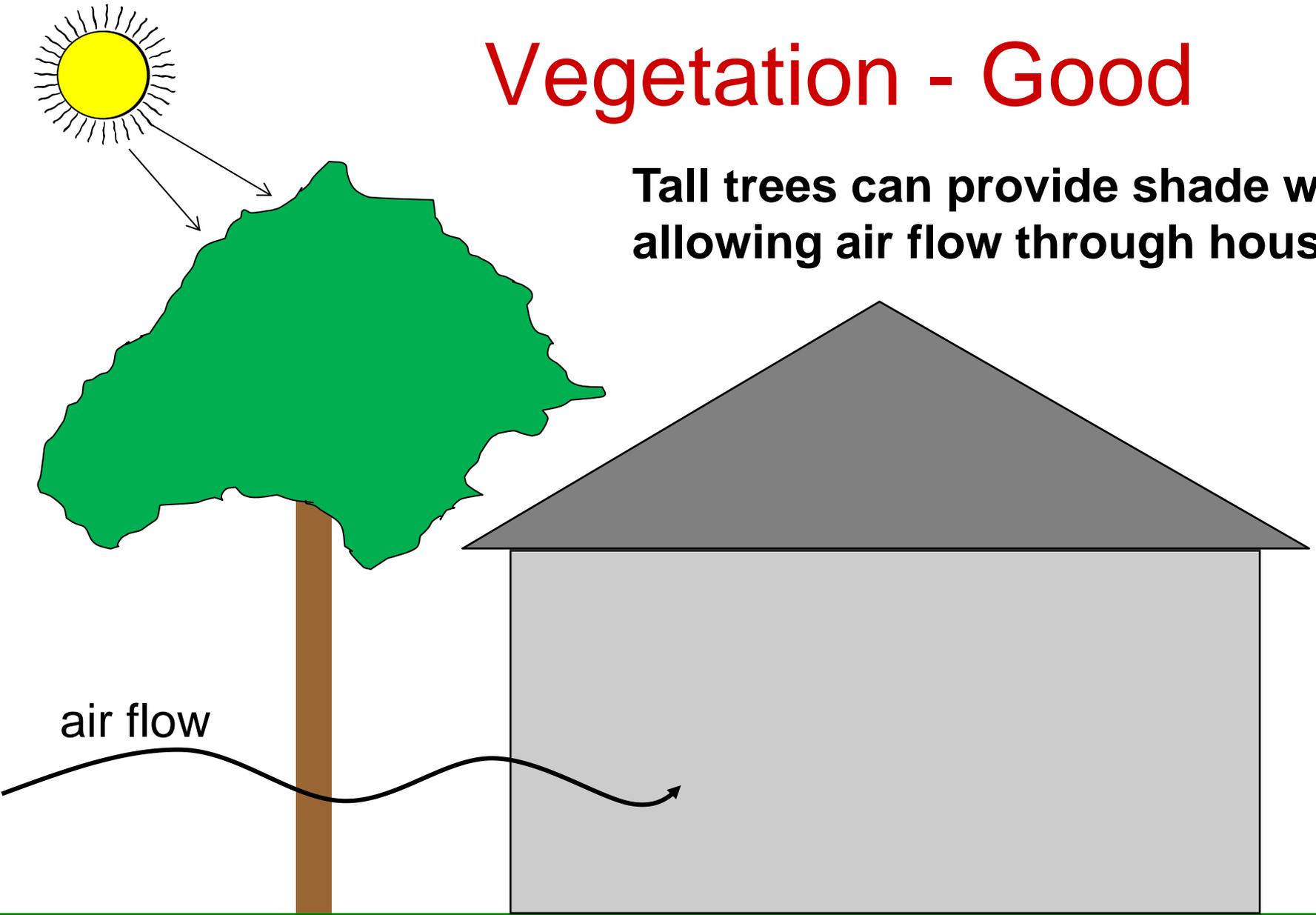
- in naturally-ventilated houses, help to move air across birds on low breeze days to increase convective cooling
- “To maximize air movement over birds circulation fans should generally be installed 3 to 5 feet above the floor and tilted downward at a 5° angle” (Mike Czarick, UGA)

Location

- Adequate drainage a must
- Reduce proximity to habitat for wild birds and predators
- Eliminate harborage for pests and rodents
 - eliminate trash and brush piles, old equipment
- Natural air flow (breeze) a plus
- Good visibility from your house
- May want to reduce visibility by neighbors

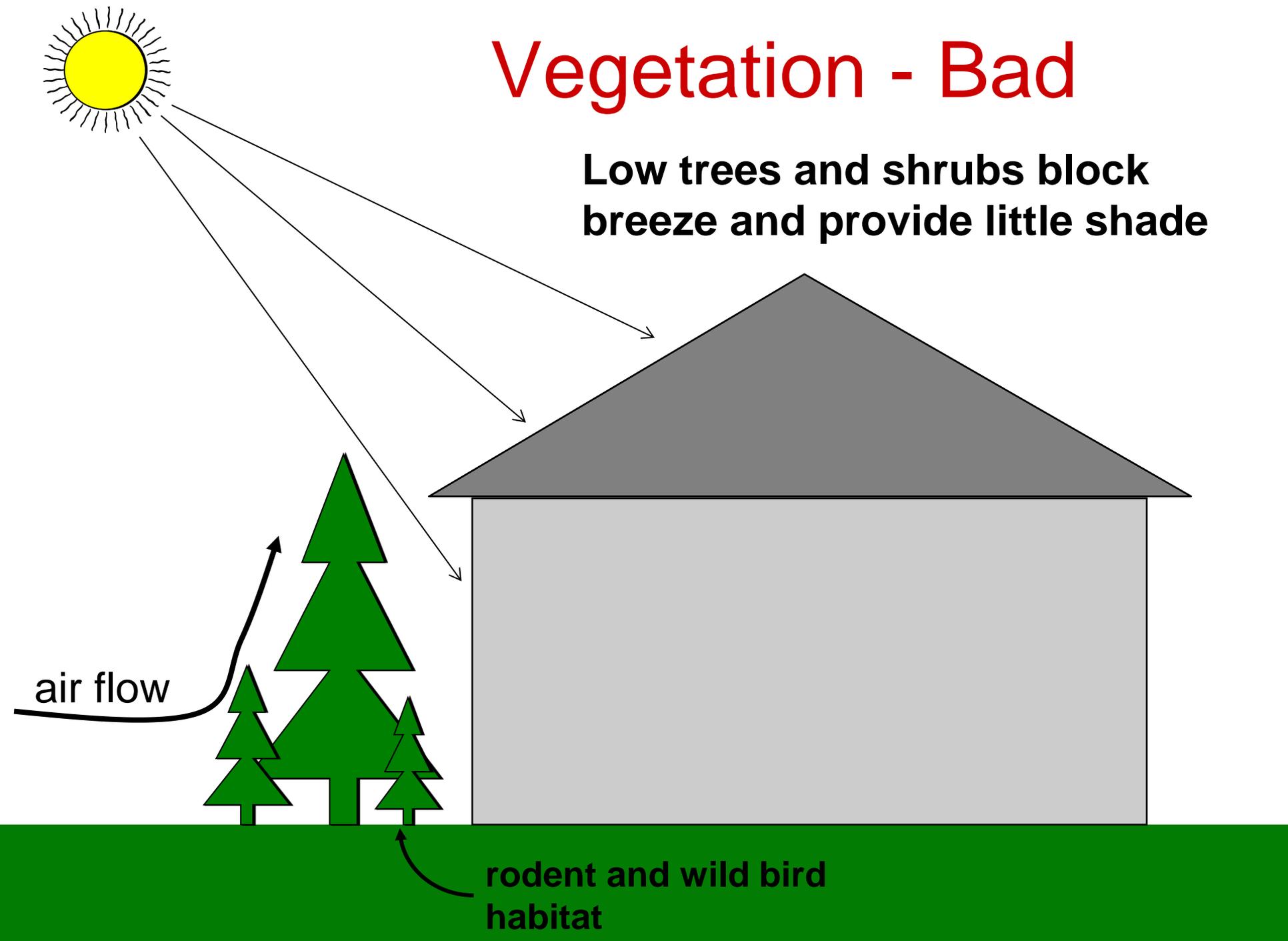
Vegetation - Good

Tall trees can provide shade while allowing air flow through house



Vegetation - Bad

Low trees and shrubs block breeze and provide little shade



air flow

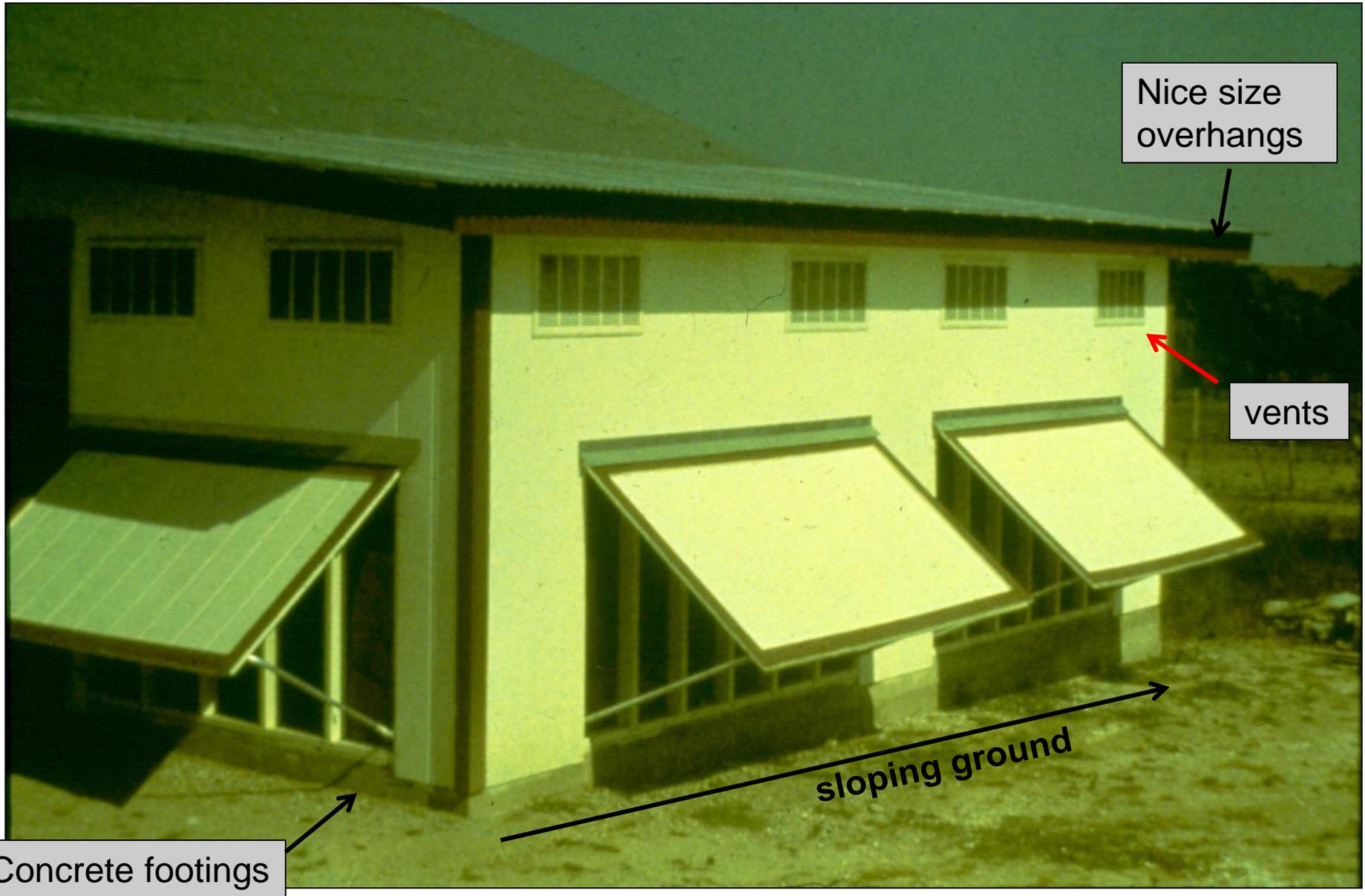
rodent and wild bird
habitat

Principles of Housing Design and Ventilation

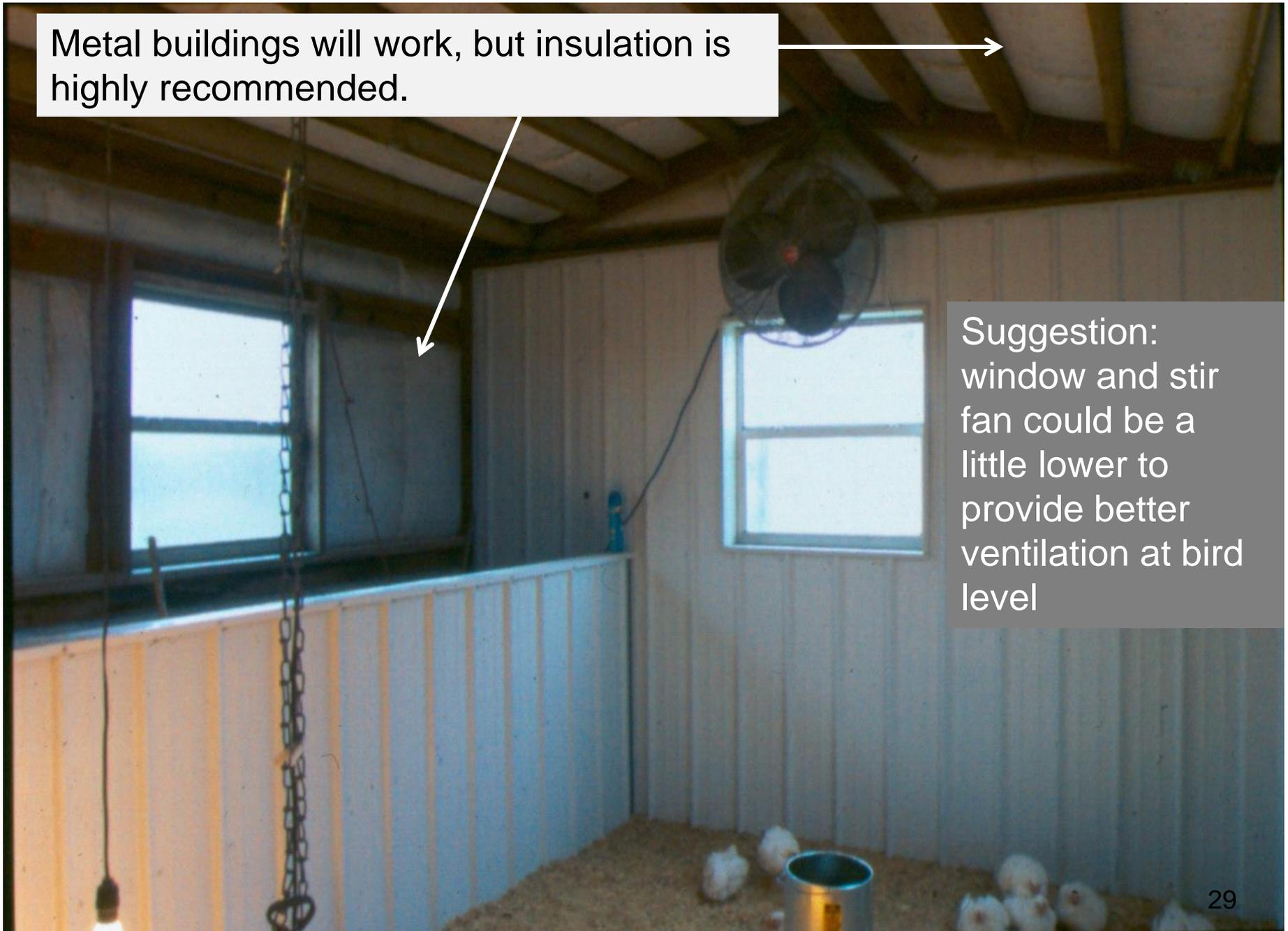
- **Key concepts**

- minimize the distance air must travel in naturally ventilated houses
- as air moves through the building, it will increase in temperature, moisture, dust and waste gas concentration
- air speed is an effective way to cool birds (wind chill effect)

Good Design with Adjustable Doors



Metal buildings will work, but insulation is highly recommended.



Suggestion:
window and stir
fan could be a
little lower to
provide better
ventilation at
bird
level

Temperature

- Evidence of appropriate temperature or deviations is easily determined by the behavior of the birds.
 - Cold birds will crowd or pile
 - Hot birds will migrate away from the heat source
 - Comfortable birds will be scattered throughout the brooding area moving in and out to feed and get water.

Birds are cold and huddled under heat source



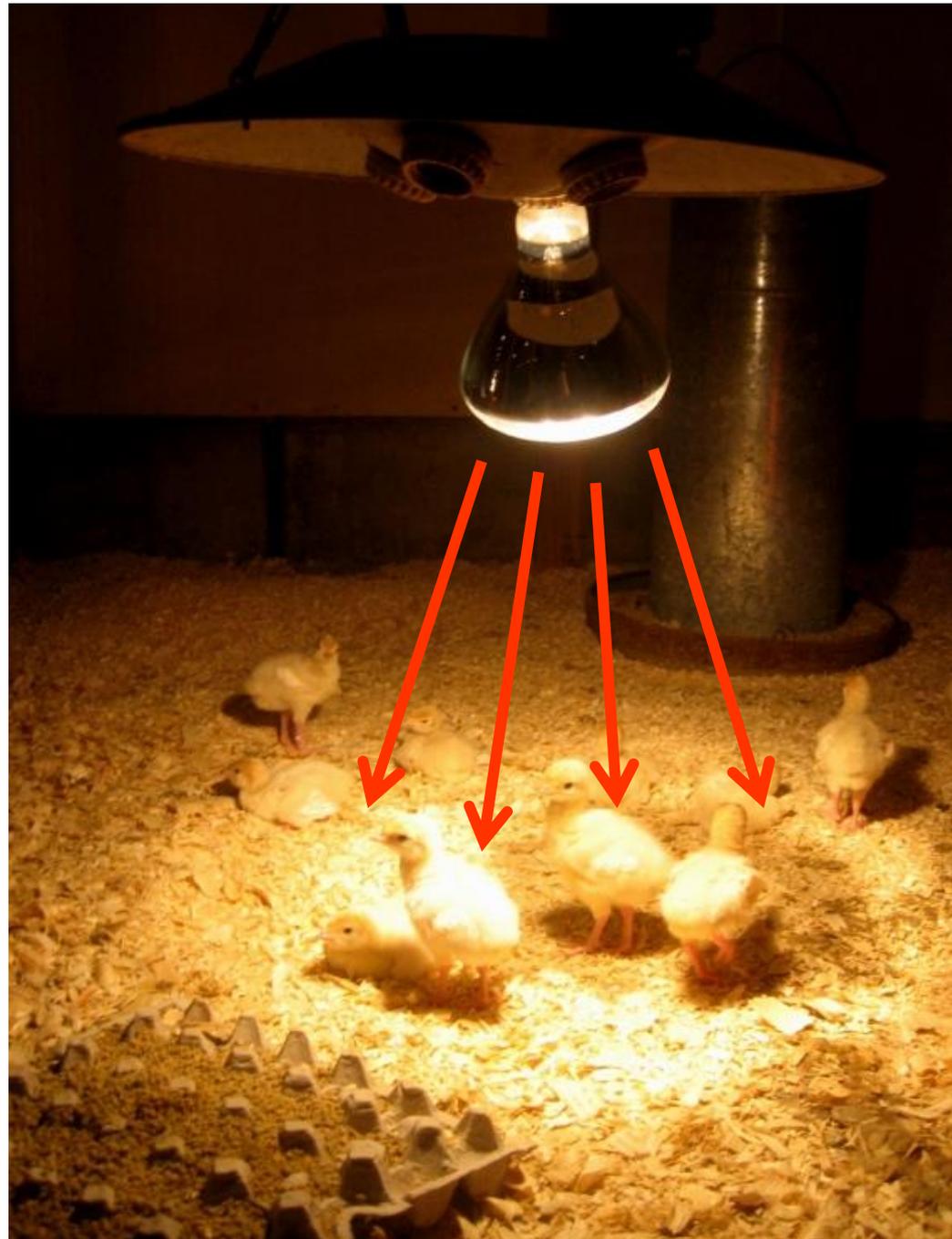
Birds are well distributed and appear to be comfortable

Notice use of brooder guard



Infrared heat lamps

- Usually adequate and most commonly used
- do not “heat” the air
- provide heat to objects through infrared energy
- Should be removed as soon as birds are well feathered



Litter

- Use 4 – 6 inches of good quality litter
 - Pine wood shavings
 - Rice hulls
 - Coarse, dry sawdust
 - Washed builder's sand
- Stir the litter daily after two weeks of age to prevent wet litter.
- Remove wet or compacted areas.

Floor Space

- Broilers
 - 2 ft² per bird up to 4 weeks of age
 - 3 – 4 ft² up to time of show
- Turkeys
 - 2 ft² per bird up to 4 weeks of age
 - 6 ft² per bird from 4 to 8 weeks of age
 - Increase so that by 12 weeks of age hens have 7 ft² and toms have 10 – 12 ft²

Lighting Programs

- Broilers
 - Continuous lighting (24 hrs. per day)
- Turkeys
 - Toms
 - Normal day length or continuous lighting
 - Hens
 - Limit day length after 10 – 12 weeks to maintain quality and prevent the onset of egg production (a.k.a. squatting)
 - Reduce day length over time to delay sexual maturity

Ventilation

- Ventilation is critical to maintain the best environment for the birds – even in cold weather
- Functions of ventilation: (listed from most important to least)
 1. Remove moisture
 2. Remove excess heat
 3. Remove waste gases (carbon dioxide and ammonia)
 4. Provide oxygen

Minimum Ventilation

- A small amount of air exchange needed to remove moisture and waste gases and replenish oxygen
- Easiest with a fan and timer
- If using natural ventilation:
 - Ventilate up high, away from birds
 - Be careful of drafts on small chicks

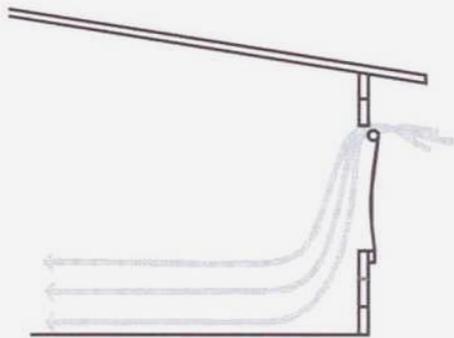
Mechanical Ventilation

- Use fans to create negative static air pressure
- Pulls or “draws” air through house
- Fans exhaust the air from the house
- Air inlet space must be controlled
 - area
 - type
 - leaks will reduce effectiveness and reduce desired air flow patterns

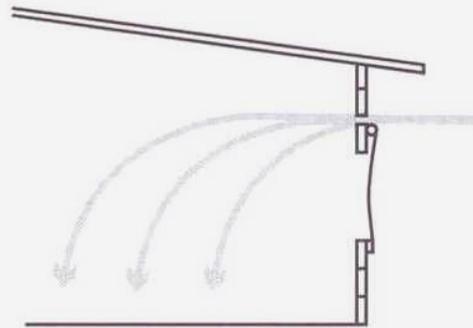
Air Inlet Style Effects Airflow Pattern

- Cool air will “fall” as it enters the house through side wall openings
- Vent boxes or boards will “throw” air to the center of house and mix with warm air

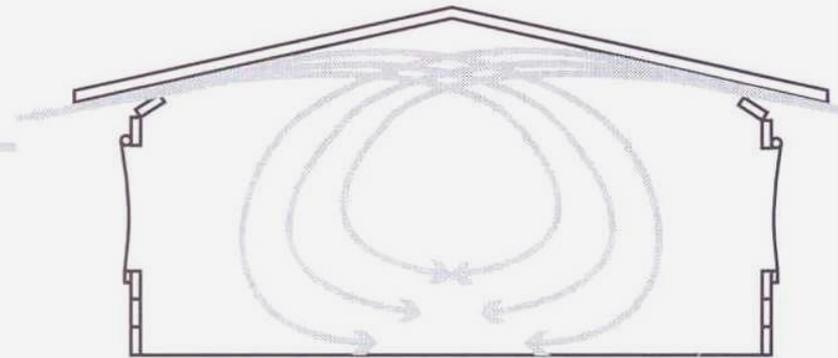
AIRFLOW PATTERNS WITH DIFFERENT SIDEWALL VENTILATION INLETS



Curtain crack



Fixed board crack



Adjustable vent boxes

Drinkers



Fountain or jug style drinkers are commonly used

Nipple drinker systems are suitable for all chickens (not turkeys)

- automated
 - reduced time and labor
- more sanitary than trough or bell drinkers
- low pressure
- less spillage = drier litter



Potential issues with automatic system:

- Leaks and pen flooding
- Water quality from source



**Garden hose
for water
supply**

Water Equipment Options

- FarmTek catalog (also online)



POULTRY WATERING

Our highest flow nipple.

- Waters your birds perfectly.
- Best-suited for use with FarmTek® single arm drip cups (WVF2225), sold separately.
- All sealing components are 100% stainless steel.

360° HI-V° NIPPLE	
STK#	EACH
WC1050	\$2.09

Waters your birds while keeping your litter dry.

- Ideal for broilers, breeders, layers, pullets, ducks and gamebirds.
- Does not require a drip cup.

360° SUPER FLOW™ NIPPLE	
STK#	EACH
WC1030	\$2.19

The ideal nipple for both broiler and layer systems.

- Perfectly waters your birds while keeping your litter dry.
- Does not require a drip cup.
- Sealing components are 100% stainless steel.

360° SUPER FLOW™ PUSH-IN NIPPLE		
STK#	ITEM	EACH
WC1045	Push-In Nipple w/Grommet	\$2.19
WC1046	Replacement Rubber Grommet	0.43

Stainless Steel

Hobby Nipple Drinkers let you water your poultry like the pros.

- Commercial poultry growers use them, why shouldn't you?
- Litter stays dry and birds stay healthier.
- 6" spacing, with 8' line. Kits come complete with end riser kit.
- Super Flow™ Drinker (103696) also includes an auto flush regulator.
- Lines can be extended up to 200' long with our 8' Extension Kit (WC3515).
- Drinkers are designed to fit in our ClearSpan™ Chick-In™ Buildings.
- Allows drinking by a large number of birds.
- Little required maintenance saves both time and money.

SALE			
HOBBY DRINKER KITS			
STK#	ITEM	EACH	SALE
110834	Flow-Tek Mini Hobby Drinker Kit	\$125.95	\$99.95 Inventory Blowout
103696	Super Flow™ Drinker Kit	138.95	-
WC3515	8' Extension Kit	66.95	-

Raise larger, healthier birds.

Unique system will provide a constant supply of clean, fresh water to your new chicks or game birds right through their maturity.

- Easily adjustable for all stages of development.
- Designed for both indoor and outdoor use, this Nipple Bucket System can be easily moved from one location to another.
- Sealed unit means bedding stays drier and water stays fresh and clean, saving time, labor and money.
- Five-gallon bucket, with snap-on lid and steel-wire handle, is constructed from high-impact polyethylene. Bucket and lid each sold separately.
- 360° Super Flow™ Push-In Nipples do not require drip cups and have stainless steel sealing components.

Boiler drain valve for easy flushing. End of the line pressure monitoring made easy.

- Constructed of durable, high-quality plumbing components.
- Flexible end riser tube eliminates accidental damage.
- Square pipe adapter and brightly colored sight tube float ball.

END RISER KIT		
STK#	ITEM	EACH
WR1080	End Riser Kit	\$23.95
WR1084	Replacement Float Ball	1.10

Creating your own Poultry Nipple Bucket Drinker is as easy as 1-2-3!

1. Drill holes in the bottom of the sealed bucket with an 11/32" drill bit (purchased locally). We suggest three holes, spaced accordingly, for maximum efficiency.
2. When installing nipples, place rubber grommet in drilled hole first, followed by the actual nipple. Grommet is included with each nipple. Wetting the nipple first eases the application.
3. Hanging or fastening your drinker will depend on the location and application. We recommend using rope, cable or chain. All are sold separately. Ask your National Account Manager for more details.

Deliver high water flow at low pressure.

- 3/4" MGH inlet, 3/4" FPT outlet.
- No O-ring seals to deteriorate.
- Constructed of ABS impact-resistant plastic.
- Impervious to rust, corrosion and medication.

0-10 LB. FLOW MASTER PRESSURE REGULATOR	
STK#	EACH
WR1280	\$63.95

Perfect for poultry and livestock watering cups.

Easily remove sediment and air in lines.

- Ideal for nipple drinking systems.
- Dependable, affordable and low maintenance.
- Molded from heavy-duty, durable plastic for long life.
- 3/4" MGH inlet, 3/4" FPT outlet.
- 0"-20" column pressure.
- Available with or without Auto Flush Kit.

SALE			
REGULATORS			
STK#	ITEM	EACH	SALE
110818	Flow-Tek Hobby Regulator	\$49.95	\$24.95 Inventory Blowout
103462	Regulator with Auto Flush Kit	78.95	-
WF2175	Square Adapter to 3/4" MPT	1.99	-
WR1084	Replacement Float Ball	1.10	-

Call and order today at 1.800.FarmTek (1.800.327.6835) or fax 1.800.457.8887

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Homemade Nipple Drinker

- 4 or 6 inch PVC pipe with cap
- Make pipe longer to increase capacity





Automated
bell drinkers
for turkeys

Culling

- Eliminate Poor Quality Birds as Detected
- Why?
 - Reduce competition and improve performance
 - Prevent cannibalism
 - Reduce disease problems and risk
 - Maintain adequate feeder and waterer space
- What?
 - Crippled, runty and unthrifty chicks
 - Deformed individuals

Sifting Defects

- Bruising – especially on the breast and at the wing joints
- Cuts, tears, and skin abnormalities
- Broken or disjointed wing
- Slab sidedness
- Insect bites and external parasites
- Extremely poor feathering
- Deformity, including skeletal abnormalities





Slab-sided



Selection and Judging

- Broilers (Pen of 3 birds)
 - Conformation 30%
 - Fleshing 45%
 - Finish 5%
 - Uniformity 20%

SEX ??



SEX ??



Fleshing

- Amount and distribution of muscle
- Breast should resemble a giant “U”

Conformation

- Refers to body shape and includes:
 - Length
 - Width
 - Depth
 - Balance & Symmetry

Uniformity

- Three birds should be similar in
 - Conformation
 - Fleshing
 - Size
- However, note that fleshing and conformation is more highly scored

Finish and Pigmentation

- Finish is the amount of fat deposited under the skin
 - Most well-fleshed entries carry more than an adequate amount of fat
- Pigmentation is the color of the skin
 - Pigmentation should receive little or no emphasis by the judge





Show Pen

bird 1



bird 2



bird 3



Show pen
bird 2



Cull bird





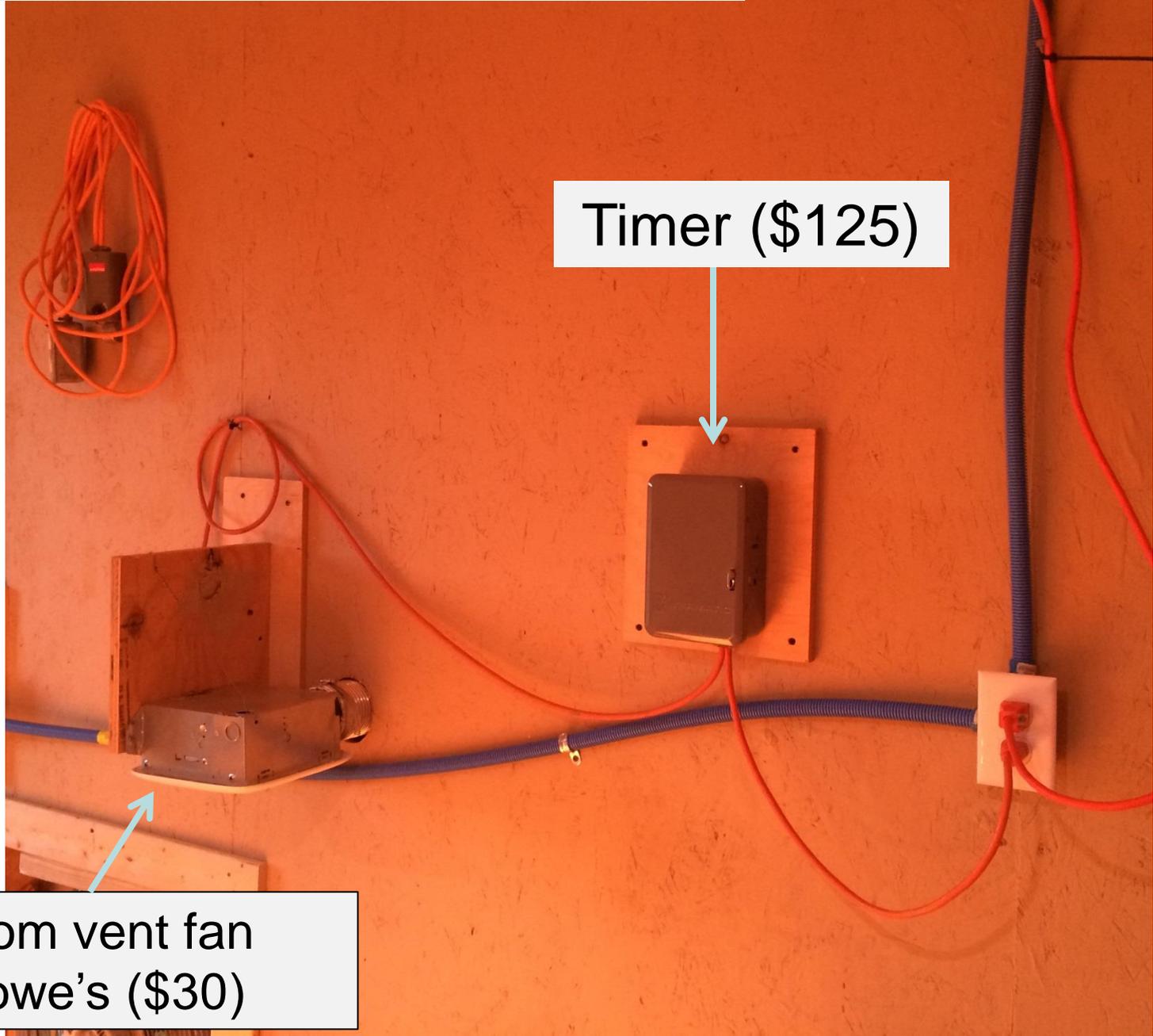
2016 Coufal Family Show Broiler Project



Good points? Bad points?



Minimum ventilation system



Timer (\$125)

Bathroom vent fan
from Lowe's (\$30)

Part No.: C8835



REPEAT CYCLE TIMER

DIAL CYCLE: 30 MINUTES
TRIPPING TIME - EACH TRIPPER, 15 SECONDS
SINGLE POLE DOUBLE THROW

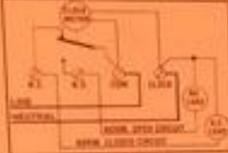
RATING: 20 AMP, 125-480 VOLTS A.C. 1/2 HP-125V 1 HP-250V

CLOCK MOTOR: 125 VOLTS - 60 HZ.

VOLTAGE AND CYCLE MUST BE AS SPECIFIED TO ORDER
NOTE: INDICATE PART NO. (WG-2) ON MOTOR COVER



INSULATOR



WIRING DIAGRAM

INSTRUCTIONS

Switch can be wired to control two circuits as single pole double throw, or to control one circuit as single pole single throw, either closed (NC) or normally open (NO). To wire Time Switch as per wiring diagram above - use solid or stranded COPPER only insulation to suit installation. Replace insulator before turning on.

PROGRAMMING INSTRUCTIONS

PROGRAM TIME: Place tripper(s) into dial at desired wheel (s) (space required).

TIME: First tripper turns on the load for 15-20 seconds. Each second tripper will lengthen the on time by 15 seconds.

OFF TIME: First tripper opened turns off the load for 10-14 seconds. Each additional space will lengthen the off time by 15 seconds.

SET DIAL: Turn dial in CLOCKWISE direction only. The "TIME SET" indicator indicates position at which switch action takes place.

REMOVE MECHANISM FROM CASE: Disconnect electricity and all wires. Depress retainer spring at upper left, or unscrew mounting screws, lift dial and pull mechanism out.

REPAIR: In case of POWER FAILURE, reset dial. See step (2) of programming instructions.

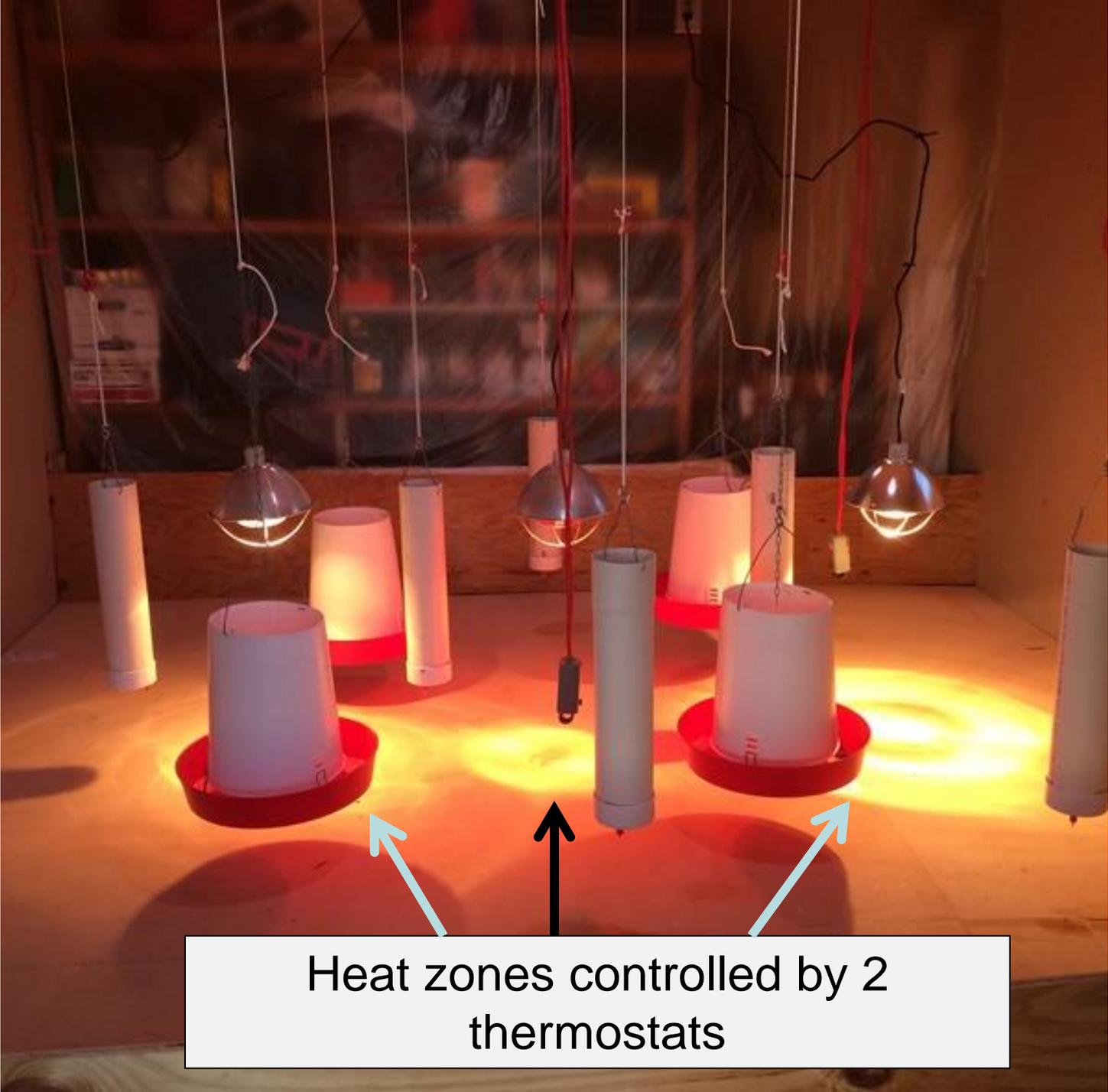
SPARTAN ELECTRIC INCORPORATED
WIRING DEPARTMENT, 5000 W. 12TH AVENUE, DENVER, CO. 80202, U.S.A.
303-755-8888

MADE IN MEXICO
58



CAUTION: MAKE SURE NON-OPERATING TRIPPERS (IF ANY) CLEAR SWITCH LEVER

THIS INSULATOR MUST BE REPLACED AFTER WIRING TO PREVENT SHOCK



Heat zones controlled by 2
thermostats

Panoramic view



Pen ended up 11 ft. x 11.5 ft. = 126.5 sq. ft.

$126.5 / 75 \text{ birds} = 1.68 \text{ sq. ft. per bird}$ (a little tight)

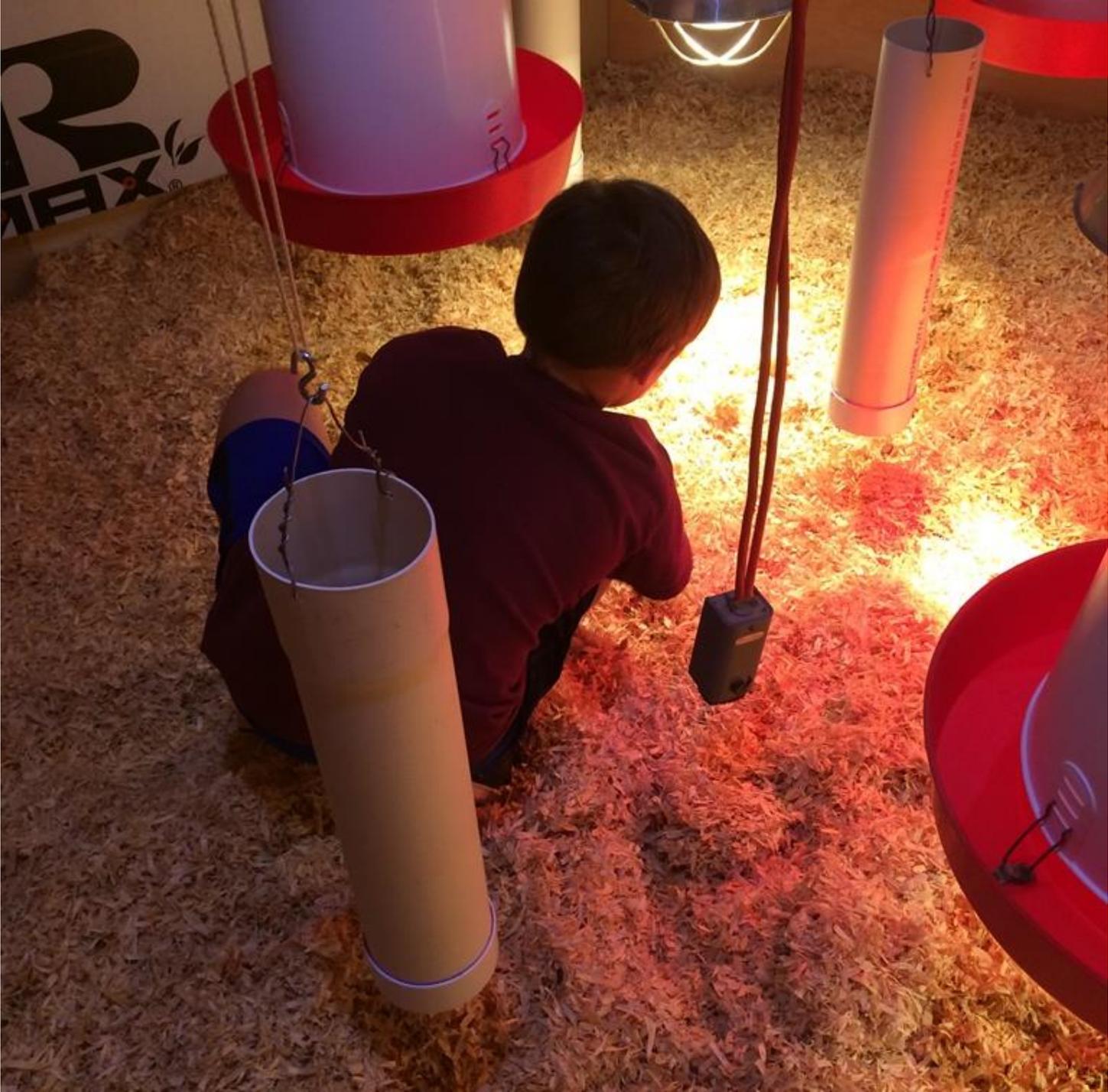




Exhaust duct
for minimum
vent fan







24 hrs. before
chick arrival



Chicks arrive



Chicks arrive







1 hour after
chick arrival





Day 1 – nighttime low of 34°

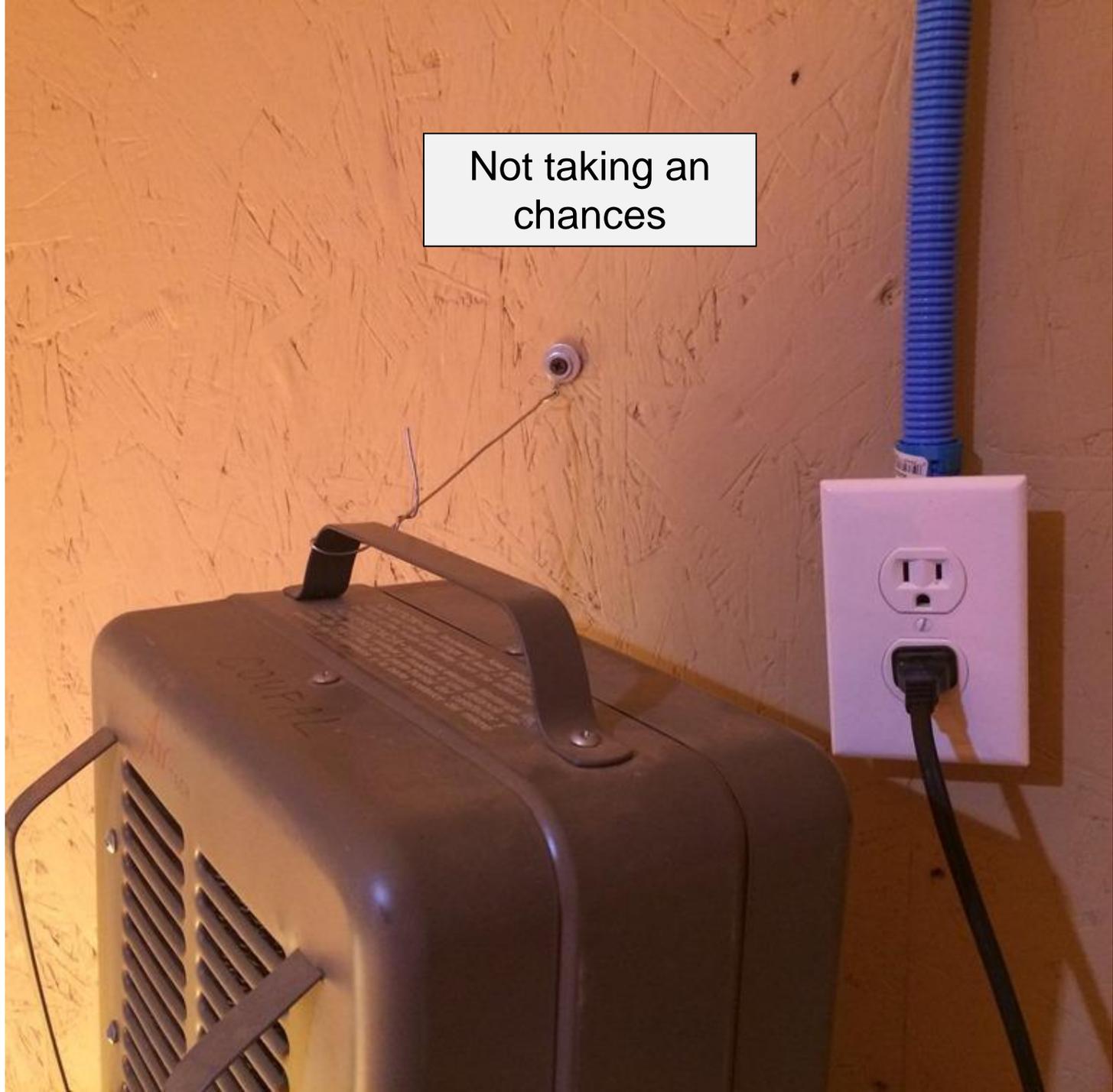




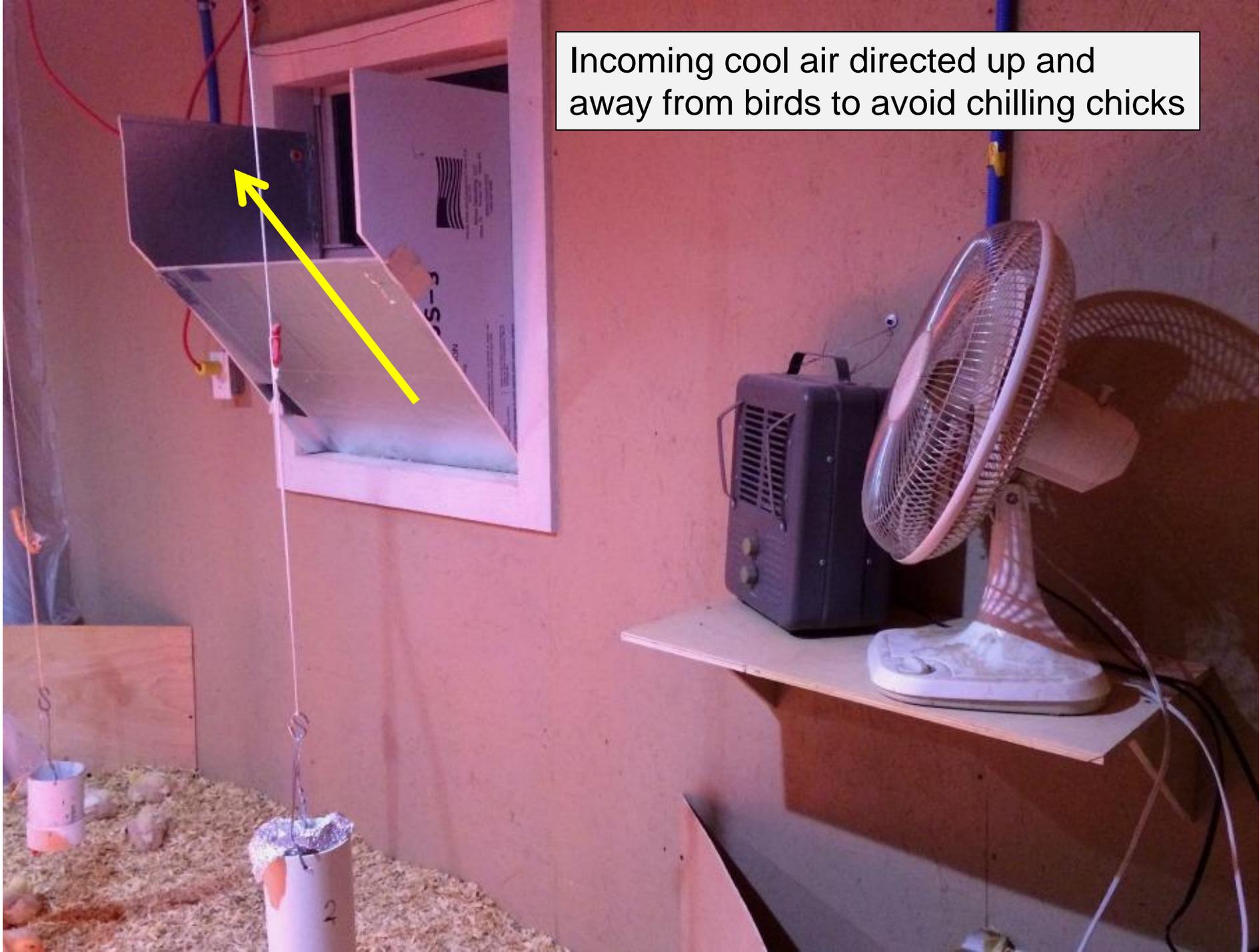
A portable heater is shown on a wooden shelf. The heater is dark grey with a handle on top and a metal handle on the side. It has two control knobs on the front. A black power cord is plugged into a white wall outlet. A blue braided cable runs vertically along the wall above the outlet. The background is a textured, light-colored wall.

Notice: not
running on
extension cord

Not taking an
chances



Incoming cool air directed up and away from birds to avoid chilling chicks



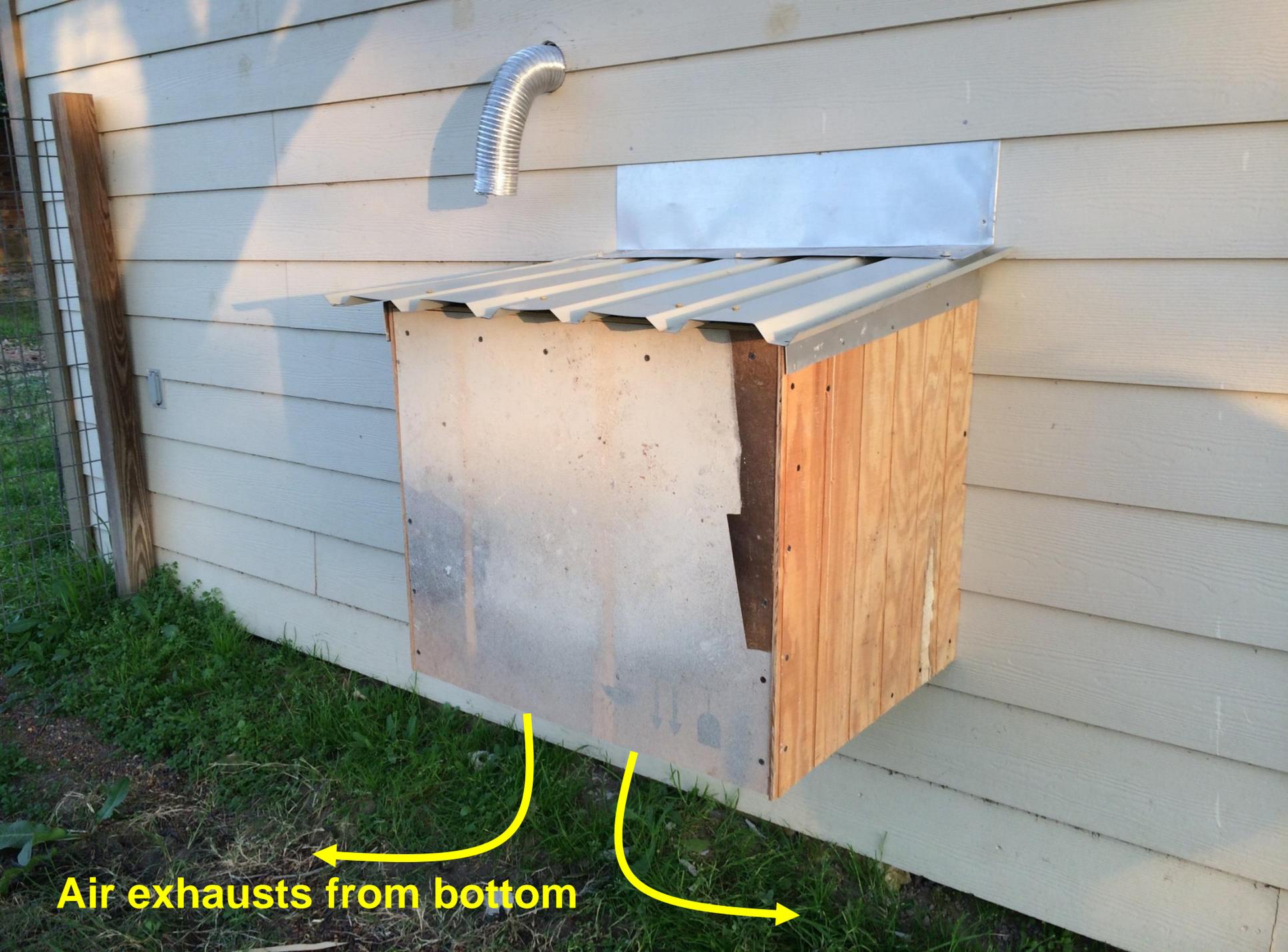


Day 5









Air exhausts from bottom

Day 12 - Added feeders on perimeter walls... should have been sooner







Day 28



Day 35

Air diverted
down across big
birds for cooling





Cool air

A/C Unit

Fresh air
in

Avoids dust build-up on
filter and provides fresh,
dehumidified air

What can we do better next year?

- **Most important:** Cull sooner, more often, and remove more birds
- Add 2 fountain drinker at 3 weeks of age (day 21)
- Add trough feeders on walls after first week
- Move existing window down
- Add more air inlets on same wall as window... thinking 2 vent boards
- Get rid of shelf at back of room so we have more space

IMPORTANT: Wing bands need to be spread apart in the middle after first week to allow the wing to grow and the band to not become imbedded.



Properly pinched in the middle on day 1

Middle of band can be easily spread apart with a flat-headed screwdriver