

# Building Better Shelters For Your Flock

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**APPPA**  
American Pastured Poultry  
Producers Association

# Keys to Pastured Production

- Managed pasture rotation
  - Rotation is critical
- Outdoor production expected
- Low stocking densities and low stress
- Balanced feed (more than forage) and clean water

# Welfare Considerations

- Protection from predators
- Protection from weather, including shade
- Well ventilated
- Enough space to accommodate entire flock
- Roosts where appropriate
- Nest boxes for layers/breeders
- Ability to move birds to unsoiled pasture often

# Brooder Considerations

- Mitigate Ammonia
  - Warm, Dry, Ventilated, No Drafts
  - Rake that bedding
  - Spacious  
(1 sq. ft per bird at 3 wks)
- Sunlight, please



# Air Quality

- Most important followed by water and feed quality
- Ammonia
  - 10 ppm damage lungs
  - 20 ppm increase risk of respiratory diseases
  - 25 ppm reduced growth and performance
  - At what level can a human detect?
- Poor Air quality also;
  - Increases stress
  - Poor litter quality
  - Poor growth
- Humidity – 50-60%
  - At 85 deg and 70% humidity, growth affected

# Stocking Density Guidelines

- Daily move housing
  - Broilers: 1.5 to 2 sq. ft. to 8 weeks; 3+ sq. ft. at 16 weeks
  - Layers: 3-5 sq. ft.
  - Turkeys: 5 to 7 sq. ft.
- Day range
  - Paddock offers additional space
  - Shelter should provide enough space for birds to all be under cover for roosting or protection from weather
- Experience and pasture influence density

# Predator Protection

- Never be surprised when something eats your chicken
- It's your job to protect the flock, shepherd



# Notes About Ventilation

- Ventilation typically not a problem pasture
- Draft and wind are problem areas
  - Especially in early and late season
  - Pay attention to the season
- Beware of drafts in early and late seasons
  - Must be able to adjust ventilation/covering





# Labor Efficiencies

- Mike: Tends 150 broilers (3 shelters) in 30 mins./day
- Grady: Tends 600 broilers (1 shelter) for 20 mins./day
- Polyface: Tends 70 broilers (1 shelter) for 5 mins./day
  - 1 min move, 1 min water, 1 min feed, 2 minutes in evening



# Broiler Shelter Economics

600 Bird Batches – 1 house

- **Chick:**           **\$1.08**
- Feed:               \$3.24
- Grit:                \$0.06
- Bedding:           \$0.03
- Heat:                \$0.10
- **Labor :**           **\$0.60**
- Processing: \$3.25
- Total Cost:        \$8.36

150 Bird Batches – 3 houses

- **Chick:**           **\$1.50**
- Feed:                \$3.00
- Grit:                \$0.10
- Bedding:           \$0.06
- Heat:                \$0.40
- **Labor:**           **\$1.40**
- Processing: \$3.50
- Total Cost:        \$9.96

Labor at \$12/hr.

# Daily Move

## Pros

- Maximize fresh forage
- Precision manure management
- **Predator protection**
- Ensures pasture rest
- Naturally shaded
- **Better FCR**

## Cons

- Easy to under/over build shelter (too light, too heavy, unmovable, too small)
- Daily labor to move shelters
- May require large # shelters

# Day Range Housing

## Pros

- Less daily labor
- Slightly more dense
- Promotes “feel good free range” image
- Works well for layers and turkeys
- Works well in uneven or forested pastures

## Cons

- Easily turns into fixed housing
- High avian predation risk
- Denuded high traffic areas
- Requires portable fencing and chargers
- Need to add shade structures
- Guard animal strongly encouraged
- Worse FCR

# Fixed Housing

## Pros

- Good brooders
- Winter housing

## Cons

- Unrotated pastures – bird and pasture health concerns
- Too small or too big to efficiently graze
- If rotation possible, not scalable
- Litter Labor – more of it and removal

“It is better to totally confine the animals in a well-lighted, well ventilated facility than to confine them in a barn with continual access to an adjacent exercise yard.” –Joel Salatin, Pastured Poultry Profit\$

# DIY or Buy

- Pastured Poultry Profit\$ - where we begin
- Low cost construction for entry level
- Engineered commercial systems available

# First Year Return On Investment

- Hoop House
  - \$150 in materials and labor to build hoop house
  - 1 batch of 50 broilers x \$3 profit = \$150
  - 4 batches per year x \$150 = \$600 profit per hoop house
  - \$150 returns \$600
- Mobile Range Coop
  - \$7500 total cost
  - 1 batch of 600 broilers x \$5 profit = \$3,000
  - 3 batches x \$3,000 = \$9,000 (recovers cost)
  - 10 batches/year in each MRC = \$30,000 profit
  - \$7,500 investment returns \$30,000
  - Numbers courtesy of Grady Phelan

# The Salatin ~~Pen~~ Shelter

- 10'x12'x2'
- Broilers, layers and turkeys (30" high)
- Approximately 75 broilers
- Teaches us key points about building shelters:
  - Reduce weight by using bracing
  - Portable, inexpensive shelters key to success
  - Overbuilding is as bad as underbuilding
- Many people start here, but fail the build
  - I did



# Salatin Shelter Build

- Lightweight, strong bracing:
  - 1x6 ripped in half for long sides
  - 1x6 ripped in thirds for all braces (front, back, sides, top)
  - 2x4 ripped in half for front and back boards on bottom
  - Bottom wire connects sides to prevent bowing
- One end enclosed w/aluminum roofing
- Other end is open with 1" poultry netting
- Open end is two doors on top
  - 1 with netting, 1 with roofing
- Requires dolly

# Salatin Shelter



Shelters at Polyface.  
Solid back faces  
west. Door in front.  
Ripped 2x4 diagonal  
braces. Note the  
water and feed  
staged near shelters.

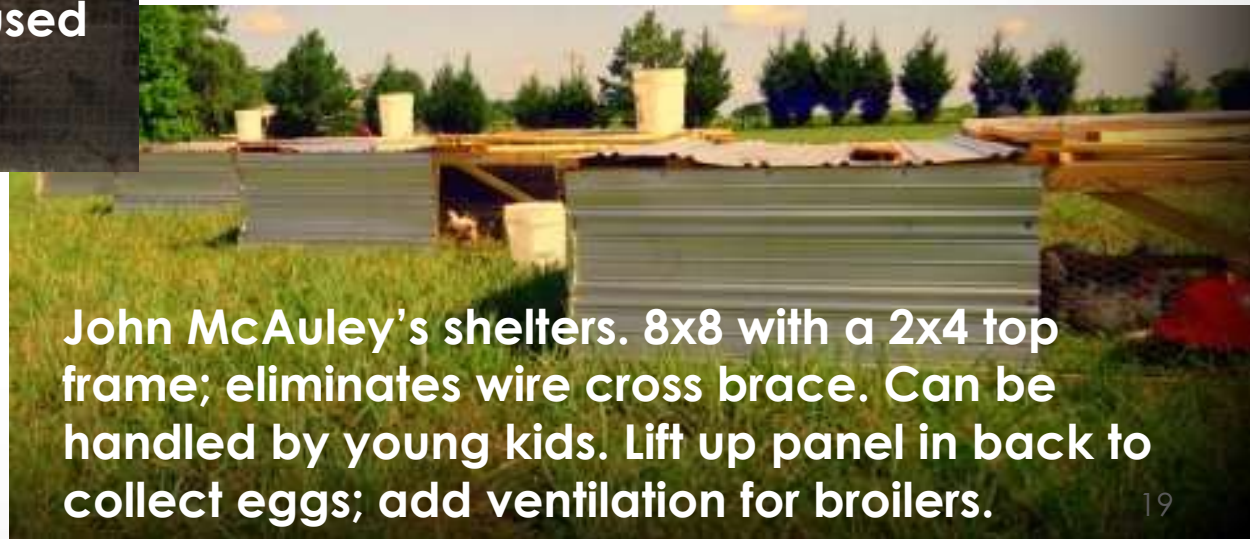
# Other Takes on Salatin



**Creative Growers design used for brooding here. Able to stand up.**



**Variations of custom fabricated shelters built from angle iron. Shown w/ turkeys. Needs dolly or machinery.**



**John McAuley's shelters. 8x8 with a 2x4 top frame; eliminates wire cross brace. Can be handled by young kids. Lift up panel in back to collect eggs; add ventilation for broilers.**

# Improved Salatin for Breeders/Hens in Texas

- 12x12x4 shown with Delaware breeder flock
- Roost in middle
- Nest boxes mount on side; roof of nest box lifts up to collect from outside. Not pictured.



Still a rectangle.

# Cattle Panel Hoop Houses

- Forms high arched roof
- Easy to ventilate
- Inexpensive, lightweight, and easy
- Multi-purpose
  - Broilers, layers, turkeys, ducks
  - Rabbitry
  - Pasture shed
  - Brooder
  - Day range or daily move
- Modular designs
  - Add panels to make larger
  - Remove panels to make smaller



# Two Favorite Cattle Panel Designs

- Plamondon hoop house
  - 8x9 foot print (50 broilers)
  - Skid design can be moved w/o dolly!
  - <http://www.plamondon.com/hoop-coop.html>
- Hansen cattle panel
  - 8.5 X 12 (65 broilers)
  - Inexpensive, easy to build
  - <http://apppa.org/pastured-poultry-articles>



# Large Scale Daily Move

- Mobile Range Coop – Cobb Creek
- Prairie Schooner – Featherman Equipment
- Up to 600 broilers, 200 layers



# More Range Coops





# Prairie Schooner - Hens



# Harvey's Homesteader A-Frame

- Courtesy of Harvey Ussery
- Complete build in "*Small Scale Poultry Flock*"



8'3"x9' A-Frame design. Can be used for day range or daily move. Holds 50 hens in a day range setup.



Withstands wind and weather well.

# Day Range: Egg Mobiles

- Repurpose many items: running gear, old campers, craigslist trailers, wagons, etc.
- Dense birds per sq. ft. (1 bird per sq. ft.)
- Protect from predators: dogs, geese, fence,
- Intensive and extensive models at Polyface



# Layer Considerations

- Roosts: 8" per hen; bars 12" apart; height < 3' at same height
  - 200 birds requires 1600" or 133' of roosts
- Automatic doors (2)
- Supplemental light
- Roll out nests boxes
- Wood slatted floors



Egg mobile at UC Davis. Roll-up tarps provide ventilation and weather protection. This egg mobile doubles as brooder.

<http://tinyurl.com/hek6ms2>

# Stoltzfoos Layers



# Turkeys on Range

- Turkeys roosts at Polyface
- Brood for 4 weeks; daily move shelter till 6-7 weeks; on range 7 weeks to slaughter
- Minimal needs after 7 weeks



# Value Added Construction

- Recycled billboard tarps
- Never nail; use drywall screws
- DIY rollout nest boxes
  - <http://apppa.org/pastured-poultry-articles>
- Portable wheel systems (not an endorsement)
  - Detachable wheel system from Planesight
    - <http://planesights.com/detachable-wheel-system-p-45.html>
  - Egg Cart'n wheel lift
    - <http://www.eggcartn.com/wheel-lift-unit>

# Featured Resources

- American Pastured Poultry Producers Association
  - [www.apppa.org](http://www.apppa.org) > Library > Pastured Poultry Articles
- Books Referenced
  - *Raising Poultry on Pasture* (See Mike for a copy or apppa.org)
  - *Pastured Poultry Profit\$* by Joel Salatin
  - *Small Scale Poultry Flock* by Harvey Ussery
- Companies
  - Featherman Equipment: feathermanequipment.com
  - Cobb Creek: cobbcreekfarm.com
  - Stoltzfoos: stoltzfooslayers.com



