“Small Scale Swine Production”

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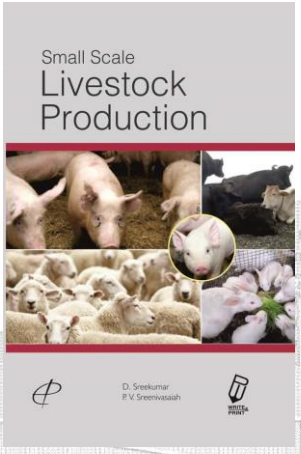

Information for this presentation came form Ohio State, Missouri and Iowa State Universities

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Todays Normal Pork Production

Statistics of Modern-Day Pigs

	The 1950's	Today
Litter size weaned	7.5	11.0
Weaning age, weeks	6-8	2-3
Pigs weaned/sow/year	10-15	20-25
Market weight, lb	200-225	275
Days to market	180	165
Feed efficiency (feed/gain)	3.50	2.75
Carcass backfat, in.	1.60	0.90
Loin eye area, in^2	4.00	6.50
Percent lean in carcass	42	55

Modern Pig Farm

- Total confinement
- Slatted floors
- Environmentally controlled buildings
- Automated feeding
- Waste management
- High level of biosecurity – closed herd
- Three-site production, buildings and rooms - AI-AO
- Terminal crossbreeding – white sows, colored boars
- Artificial insemination
- Farrow continuously (in groups, but year around)
- Early weaning
- Market on carcass merit basis

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You want to raise pigs? Outside?

- Make money
- Add value to feedstuff
- Utilize free time
- Raise food for home use
- Utilize physical resources
- Preservation (history, genetics…)

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The Process…

- Research
- Set goals
- Have business plan
- Have help
- Have exit strategy
- Have fun

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“Small Scale” Pork

- Who is the customer?
- What do they (you?) want?
- What will it take to raise it?
  - Feed
  - Genetics
  - Facilities
  - Pasture
  - Processor(s) (inspected?)

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Raising Pigs

- Every day… weekends…. Holidays….
  - Feed, find, fix (fence or pigs or neighbors flowers)…
- Not easy
- Takes some $$$
- Can be messy
- Glamorous

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Keys to success

- Meet mating targets
- Sell at heavy weights
- Use feed efficiently (no wastage)
- Optimize health and genetics
- Effectively Manage Costs

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Challenges

- Weather, particularly in cold climates
- Higher level of stockmanship required??
- Maintenance of ground cover
- Image of older outdoor systems
- Parasite and microbial controls
- Appropriate genotypes

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Managing Pigs Outside

- Catch a sick pig
- Move pigs
- Rest pastures
  - Every 1-3 months for forage re-growth
  - Every third year for disease/parasite control
- etc.

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Why Producers Use Pasture

√ Total cost of producing 100 pounds of pigs by various systems is about the same. What does this mean to YOU?

√ Missouri pig producers prefer using some kind of pasture.. WHY?

1. There is less disease and parasite risk in a properly managed pasture program.
2. Rolling land suited for pasture rather than cash grain crops is productive in a hog enterprise.
3. Hog men have flexibility with low building investment—particularly important in uncertainties of hog business. Portable equipment has resale value if a man wants out of the business.
4. They can turn hogs in corn fields for gleaning or hogging-down.
5. A pasture system is economically sound for 1) a producer who has limited capital, or 2) one who has the capital but wants to invest in something other than extensive buildings.
6. A producer may prefer a pasture system.

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Planning For Pasture

The following are guides in planning use of pasture.

1. Water—One opening for each 20-25 head.
2. Pasture Requirements.
   - 10 gestation sows per acre.
   - 7 sows with litters per acre.
   - 25-40 growing-finishing pigs per acre.
3. Shade Requirements.
   - 15-20 square feet per sow.
   - 20-30 square feet per sow and litter.
   - 4 square feet/head to 100 pounds.
   - 6 square feet/head over 100 pounds.

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Feed and Water Space Requirements

The following points are general guides for meeting feed and water space requirements in your feeder pig operation.

1. For self-feeding in drylot or on pasture, provide 1 linear foot of feeder space or 1 feeder hole for each sow and litter.

[1] If the trace mineralized salt contains less than 0.5 percent zinc, add 0.1 pound of zinc carbonate per ton of complete ration.

2. For hand-feeding in drylot or on pasture, allow 1½ feet of trough space for each sow and litter.

3. Provide 1 linear foot of creep-feeder space for each 10 pigs. The trough on creep-feeders should be no more than 2 inches deep.

4. Provide 1 automatic waterer for every 4 sows and their litters.

5. For hand-watering, provide 2 linear feet of trough for each sow and litter.

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Feed – Pasture Based – Forage Utilization

The legumes as a group have a higher protein, calcium and carotene content than grasses.

They can furnish an adequate supply of most vitamins with the exception of vitamins D and B_{12}.

Alfalfa, ladino, sweet clover, red clover and lespedeza are legumes that may be used for swine pasture. Alfalfa and ladino are probably the best

Ladino clover will not produce as much forage per acre as will alfalfa, but it is somewhat superior in nutritive value.

Where adapted, the use of the two together has increased yields and improved the nutritive value

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Feed – Pasture Based – Forage Utilization

Perennial grasses such as orchardgrass, endophyte-free tall fescue, timothy and bromegrass, can be used along with legumes.

Mixtures of grass-legume have performed as well as legumes alone.

Advantages:

increasing total yields,

Provide a superior sod

reducing the risk of losing the legumes through heaving and stress kill.

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Pasture Stocking Rate

Stocking rates

Stocking rates will depend upon soil fertility, quality of pasture and time of year. Recommended pasture stocking rates are:

Sows with litters	**6-8 per acre**
Pigs from weaning to 100 pounds	15-30 per acre
Pigs from 100 pounds to market	10-20 per acre
Gestating sows	8-12 per acre

These recommendations assume the use of good quality legume pasture under conditions of adequate moisture.

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Advantages of Pasture in Swine Production

Lower feed costs on good pasture.

- ❖ Gestating Sows can replace 50% of the grain and supplement with high quality Pasture.
- ❖ Growing Pig can only replace 10 to 20% of grain and supplement.

- Provides exercise and nutrients needed by breeding sows.
- Lower capital investment per production unit.
- Good use of land not suitable for cropping.
- Better isolation and disease control.
- Decreases waste management problems.
- Decreased cannibalism.

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Disadvantages of Pasture system

- More labor required for handling, feeding and watering.
- Possibly greater problems with internal parasites.
- More labor in farrowing.
- Possible decrease of crop land.
- May require slightly longer for hogs to reach market.
- Lack of environmental control in extreme weather.
- Predators

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Feed

- True opportunistic omnivores
  - Leaves/stems
  - Roots/tubers
  - Animals, insects, reptiles,
  - Dead or alive
- Excellent at making use of by-products
- Survival instincts may allow them to mix their own feed
- Feed can impact consumer eating experience
  - Preference (GMO, organic)
  - Flavor (fish meal, flaxseed, etc)
  - Fat composition (fatty acid incorporation vs manufacture)

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Feed

- A pigs requires about 700 pounds of feed to reach 200 pounds, and over 1000 pounds of feed to reach 300 pounds. This feed will contain 70 to 85 percent grain.
- Do you have facilities for grain storage?
- Is there a feed dealer in your area?
- Do you have some way of mixing different ingredients for pig feed?

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Feeding Strategies

Hand Feeding

Mechanized Feeding

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Feeding Strategies – including water

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Top 9 Profit Drivers

Note: data on each line are from different sets of farms	top 15 farms	lowest 15 farms	Difference/Cwt for each factor
1. Hours Labor/Cwt Produced	.47	1.28	+$12.15/cwt
2. Operating $/Cwt (exc Hired L.)	$4.19	$13.06	+$8.87/cwt
3. Feed Efficiency (lbs/cwt)	344	482	+$8.75/cwt
4. Pigs weaned per litter	7.8	5.6	+$8.52/cwt
5. Price of feed/ton	$105.40	$143.60	+$7.03/cwt
6. Litters weaned per sow per year	1.9	1.1	+$6.93/cwt
7. $/Cwt for All Mkt Animals Sold	$51.90	$ 45.06	+$6.84/cwt
8. Fixed Costs/Cwt Produced	$0.53	$5.73	+$5.20/cwt
9. Pig Death Loss Feeder to Market	2.3%	14.5%	+$3.07/cwt

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Source: Iowa State University

What do you think it costs to produce a market pig today?

1. $115
2. $165
3. $190
4. $215
5. $235
6. $250

Keys to Success

- Focus on feed--- FE first and price
- Structure to fit and to make a living
  - meet target # of pigs
  - Marketing premium
  - Keep alive pre-weaning target less than 25% death loss
  - Cost control – bedding, utilities, supply, repair – keep in line with output
  - 1.3 hours per pig goal

Swine Housing Types

- Indoors
  - Improved feed efficiency
  - Reduced labour costs
- Outdoors
  - Lower capital costs
  - Perceived as welfare friendly
- In-between
  - bedded systems / ecoshelters / hoop structures

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Shelters do not have to be fancy or expensive, but they must be functional

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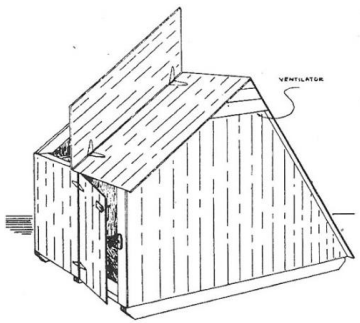

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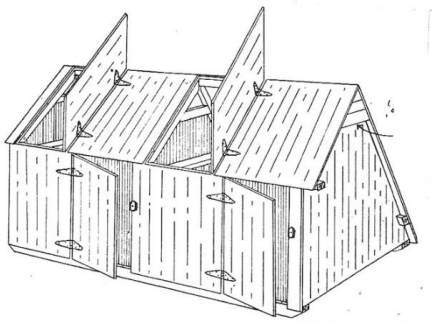

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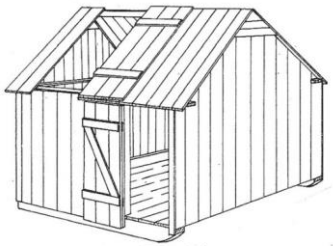

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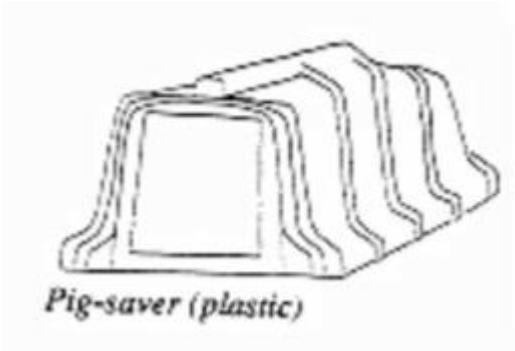
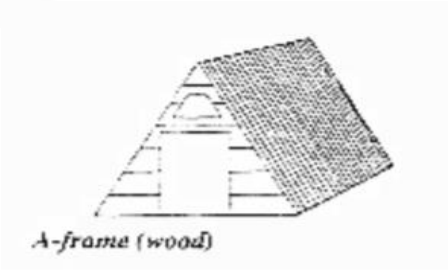


Pig-saver (plastic)



A-frame (wood)

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Gilts on pasture

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Confinement options – Farrowing/Growing

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Weaning through finishing

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Housing System	Description	Benefits	Challenges
 Barn (Confinement)	• Either naturally or mechanically ventilated, or a combination of the two, depending on the season. • Bedding optional. • Can accommodate group and individual housing.	• Reasonable control of the environment. • Separation of manure from the pig resulting in fewer opportunities for disease transmission. • Easy to clean and disinfect. • Multiple pens allow for split-sex feeding and separation of pigs by weight. • Excellent parasite control opportunities. • Multiple pens and feeders allow for age-appropriate diets to be fed. • Less time required for observing and managing pigs.	• High capital investment in a single purpose building. 
 Hoop Barn	• A lower-cost facility. • Deep bedding used to absorb manure, which is handled as a solid. • Usually used for gestation and grow-finish pigs. • Group sizes often 100 or more.	• Low investment cost per pig. • Multiple-use building (can be used for other storage purposes if not for pigs). • Reasonable control of the environment with adequate bedding.	• Lots of bedding required plus a place to store the bedding. • Can be difficult to cool pigs in hot, humid weather. • More difficult to identify and treat sick pigs. • Difficult to clean and disinfect. • Difficult to separate pigs from the manure. • More time required for handling and bedding pigs.
 Pasture	• Used for all stages of production, with obvious seasonal limitations for winter production in some parts of the United States. • Pasture production systems involve intensive production management and pasture rotation. • Low cost of facilities, but the opportunity cost of the land for crop production must be considered.	• Ability to disperse pigs over a large area. • Low cost of facilities. • Quality forage on the pasture can meet a portion of pigs' nutritional needs. • Ability to root and forage.	• Minimal control of the environment. • Difficult to clean and disinfect, requiring adequate pastures to allow for rotation to clean ground each year. • Controlling predators necessary. • Control of diseases spread by wild animals. • Managing in cold, hot or rainy weather. • Parasite control needed. • More time required for individually treating and handling pigs. • Ground cover needs to be maintained.

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Finishing pigs and greens

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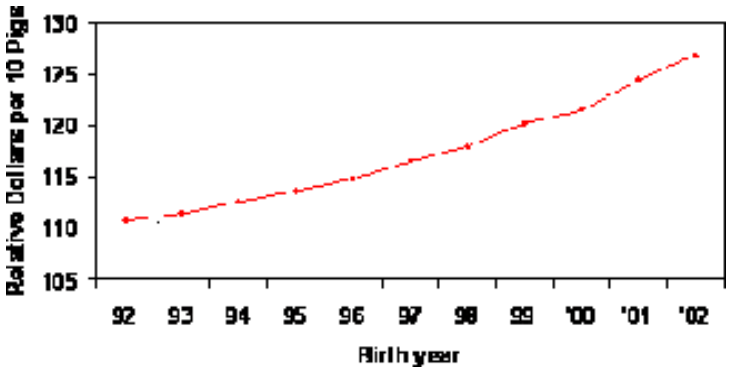
Genetics

- As important as feed
- Interact with feed to impact “eatability”
- Heritage breeds?
- End product determines genetic choice
  - consumer expectations
  - Producing required volume



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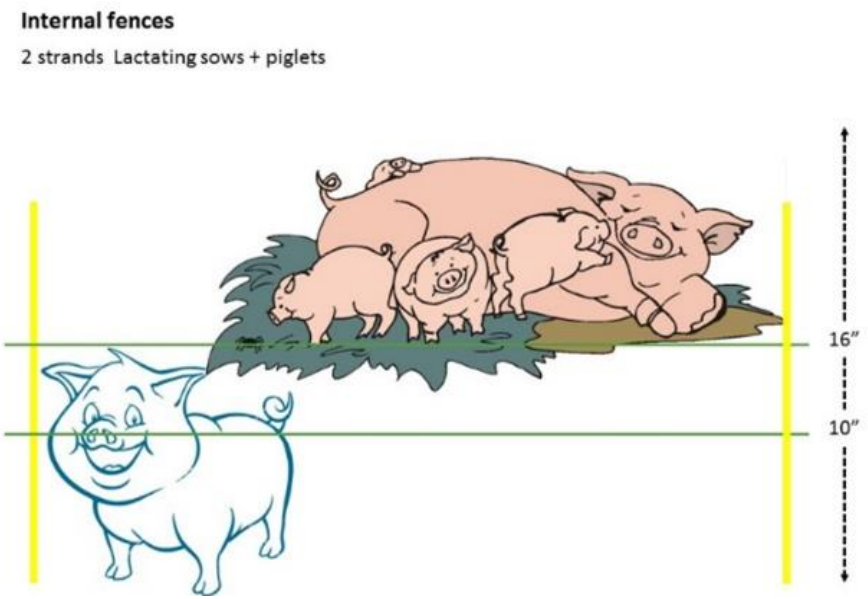
Fencing

- Woven wire
  - 32” vs 36”
  - With barbed wire on ground
  - With electric?
- Hog panels
  - Costly for pasture
- Electric
  - 1-3 strands
  - Very functional once trained
  - Maintain charger and limbs/dirt



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Electric fencing using ½ inch tape

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Fencing Properly

- May use an electric fence on interior - Differentiate from the permenant fence
- Pigs remember electric gates
- To avoid mud do not place feeders or drinkers close to the gate

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Facilities

- Required to protect from the elements
- Determines fixed costs
- Determines labor needs
- Environmental regulations
- Neighbor relations
  - Historically, nuisance complaints involve outdoor production more than conventional confinement
- Will determine the direction of the operation

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Shade cloth portable shelter

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A-frame farrowing hut

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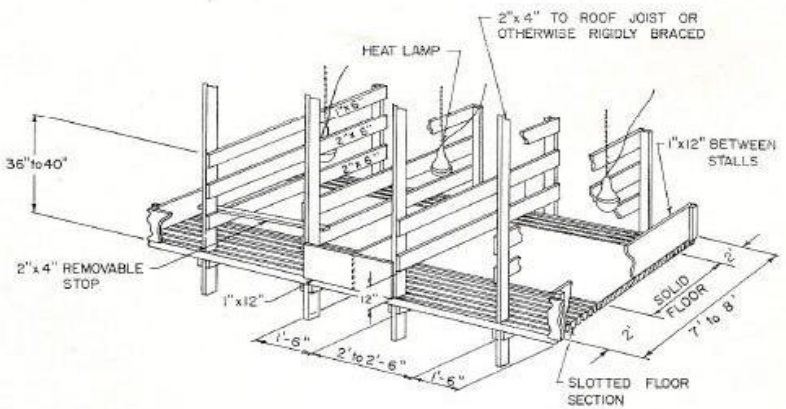
Save more baby pigs by using farrowing stalls.



Stalls built by these plans keep the sow from crushing her pigs. Slotted floors reduce labor of manure handling.

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Pasture farrowing

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MOF (Modified open front), natural ventilation

Natural shade, hog panel fencing

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Pasture finishing

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Quick Facts

Symbol III

Adopted in 2005

SYMBOL III is an ideal market hog that symbolizes profitability for every segment of the industry. This hog has correctness of structure, production, performance, function, livability, attitude, health and optimum lean yield. SYMBOL III also produces the best quality, safest pork that provides the optimum nutrients for human nutrition.

Production Characteristics

- Live-weight feed efficiency of 2.4 (2.4)
- Fat-free lean gain efficiency of 5.9 (5.8)
- Fat-free lean gain of 0.95 lbs. per day
- Marketed at 156 (164) days of age
- Weighing 270 pounds
- All achieved on a corn-soy equivalent diet from 60 pounds
- Free of all internal and external parasites
- From a high-health production system
- Immune to or free of all economically important swine diseases
- Produced with Environmental Assurance
- Produced under Pork Quality Assurance® Plus and Transport Quality Assurance™ guidelines
- Free of the Stress Gene (Halothane 1843 mutation) and all other genetic mutations that have a detrimental effect on pork quality.
- Result of a systematic cross-breeding system, emphasizing a maternal dam line and a terminal sire selected for growth, efficiency and superior muscle quality
- From a maternal line weaning >25 pigs/year after multiple parities
- Free of all abscesses, injection-site blemishes, arthritis, bruises and carcass trim
- Structurally correct and sound, with proper angulation and cushion and a phenotypic design perfectly matched to the production environment
- Produced in a production system that ensures the opportunity for stakeholder profitability from the producer to retailer while providing a cost competitive product retail price in all domestic and export markets
- Produced from genetic lines that have utilized genomic technology to support maximum improvement in genetic profitability and efficiency

Carcass Characteristics

- Hot carcass weight of 205 lbs.
- LMA of 6.5 (7.1)
- 10th rib backfat of 0.7 (0.6) inch
- Fat-Free Lean Index of 53.0 (54.7)

Quality Characteristics

- Muscle color score of 4.0
- 24-hour pH of 5.9
- Maximum drip loss of 2.5 percent
- Intramuscular fat level of 3.0 percent
- Free of within-muscle color variation and coarse muscle texture
- Free of ecchymosis (blood splash)
- Provides an optimum balance of nutrients important for human nutrition and health
- Provides a safe, wholesome product free of all violative residues and produced and processed in a system that ensures elimination of all food-borne pathogens

Note: Numbers in parentheses represent gilt numbers corresponding to the barrow numbers shown

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pork checkoff

Processing and Marketing

- Sell pigs or meat?
- Inspection requirements
- Finding a processor
- Producing a quality final product

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Breeder's Market

A market where profit or loss is dependent upon your ability to sell to other breeders.

In a breeder's market, somebody is always the "caboose".

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That’s all Folks!!!!

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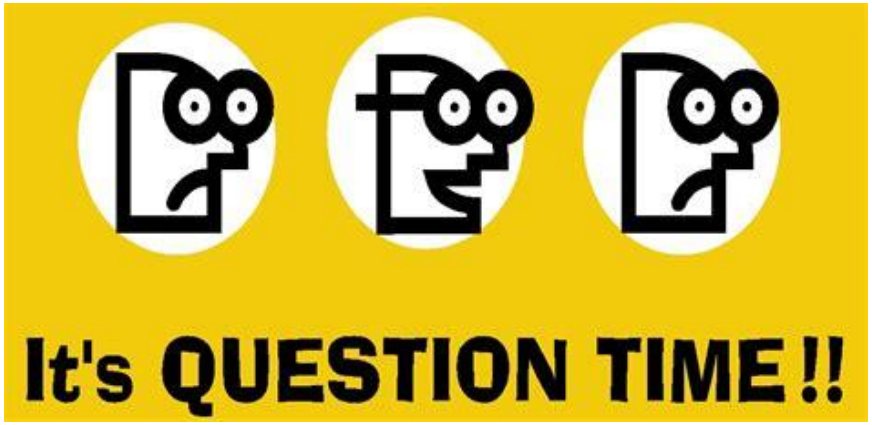

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