Swine Health

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Healthy pigs start with a healthy sow!

- Good maternal line genetics
- Careful attention to nutrition
- Parasite control
- Manage the environment
  - Reduce stress by acclimating sows to human contact
  - Move to farrowing pen 3-4 days before expected farrowing
  - Temperature and humidity control
    - ventilation
  - Provide nest material and place cover over crate before and after farrowing

The newborn pig has three basic requirements:

- A good environment;
- Adequate and regular nutrition
- Safety from disease and crushing

Individual attention pays off!

Care of newborn pigs

- Weak pigs get crushed so move them away until they are stronger
- Creep areas on both sides of the sow keeps pig out of the ‘danger zone’. Use a 175W radiant heat lamp. Check temp at pig level.
  - Newborns need 90°F
- Lighter, smaller pigs need extra attention
  - Heated creep boxes, carpet, deep shavings

Evaluation of newborn baby pigs

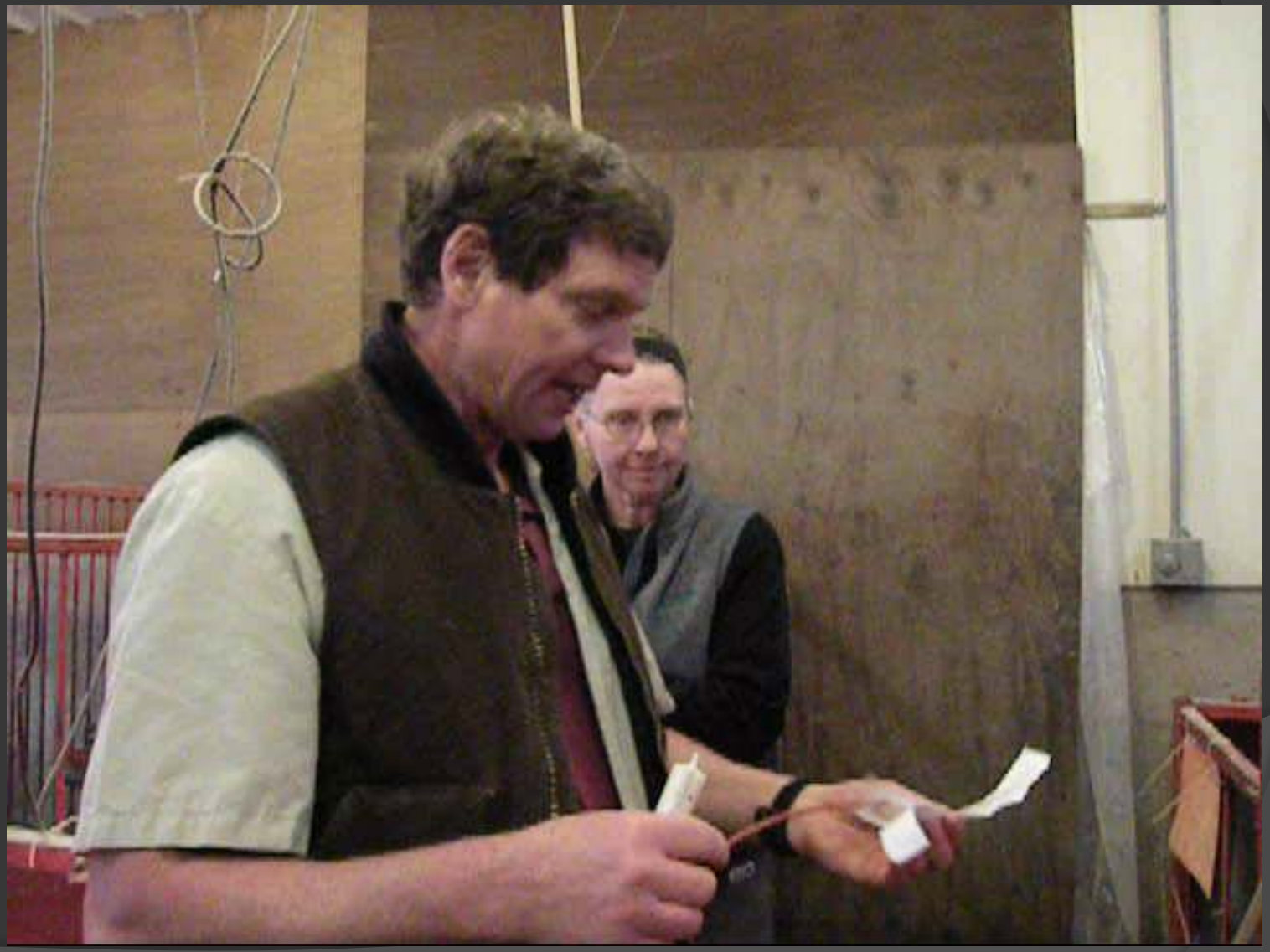
- Was gestation full term?
- Is the amniotic fluid clear or meconium stained?
- Is the pig trying to breathe?
- Is the pig moving with good strength?

If you answered **YES** to all 4 questions, leave the piglet alone!

Tube feeding pigs

- It is easy – learn how to do it!
- Equipment
  - Colostrum (any species but pig is best)
  - Rubber tube (12-14 Fr red rubber)
  - Syringe (20 ml)
- Procedure
  - Draw up about 10-15 ml ‘milk’ in a 20 ml syringe
  - Lubricate tube and push end over base of tongue and allow pig to swallow
  - Verify placement
  - Attach syringe and slowly inject ‘milk’
  - Pinch tube as it is withdrawn

Tube feeding baby pigs



First procedures for piglets

- The navel should be disinfected the day pigs are born using tincture of iodine.
- If possible, equalize litter size.
  - If several sows are farrowing within a 24-hour period, pigs can be transferred successfully from one sow to another.
  - Transfer bigger pigs in the litter, not the runts.
  - Best results occur if pigs are transferred the first 3 days of life and have received colostrum before transfer.
- Pig less than 2 lbs are at risk of death

Cross fostering

- Piglet weight variability contributes to mortality
- Foster litters according to piglet weights not just number of pigs in the litter
- Fostering has it's downside
  - May not suckle
  - Piglets fight more
  - Increase sow aggression
  - Inhibits sow milk let-down

Heat for pigs

- Heat lamps
  - Attracts pigs to light and warmth
  - Hover
  - Mats
  - Heated floor
- Needs to be 85-90°F
- No drafts-solid walls or pens

What's normal piglet behavior?

- Nurse about 15 times in first 24 hours of life
- Consume 15 mL /feeding
  - 15 X 15 = 225 mL (1/2 pint!)
- Cold or a delay to first nursing contribute to death and disease losses

What's NOT normal piglet behavior?

- Lethargic- does not get up to nurse with rest of litter
- Isolated away from sow or heat source
- Moving from nipple to nipple looking for milk
- Cold, flat, purple
- Vomiting or diarrhea

Processing baby pigs

- Usually done between 1 and 14 days old
- Less stressful when done at a young age
- Castration, teeth clipping, tail amputation, ear notching, iron injection

Processing baby pigs

- Castration
  - To make management easier and prevent boar taint
  - Castration at 14 days results in less negative behavior change (reduced nursing, increased lying) and heavier pigs at weaning with better subsequent weight gain compared with pigs castrated at 1 day of age

Castration

Processing baby pigs

- Clipping needle teeth
  - Done because the sharp teeth can damage the sow's udder and other pigs and prevention of greasy pig disease
    - Pigs fight to establish 'ownership' of a teat
    - Can cause broken teeth, jaw infections, joint infections, poor doing pigs
  - Many producers have stopped clipping teeth with no untoward effects – give it a try!
    - Expect more facial injury but usually of no concern
    - Many depend on aggressiveness of your line of genetics

Processing baby pigs

- Tail amputation
  - Done to prevent tail biting in growing-finishing pigs especially in confinement
  - Tail removed ½ - ¾” from base of tail
    - Emasculator, wire cutters, scalpel, hot docking iron (less stress response)
  - Do NOT do on day of birth – wait until pigs have ingested colostrum (do on day 3 with iron shot)

Processing baby pigs

- Iron injections
  - An important and essential procedure for confinement raised swine
  - Not giving iron and result in anemia, scours, poor health
  - Most important for fast growing pigs
  - Give 1 cc on day 2-3 and another at day 14 OR give 1.5 cc on day 2-3. Avoid injection on day of birth.
  - Oral iron is OK also

Care of the sow after farrowing

- Begins with good care before farrowing
  - Comfortable, good feed, plentiful water
  - Sow/gilt vaccinations to protect pig from diarrhea
  - Parasite control
  - 3-4 day adaption period to farrowing facility
  - Too bad we lost gestation crates!
- Good care at farrowing
  - Comfort is a top priority

Care of the sow after farrowing

- When sow stops straining and shows interest in her litter you can assume she is done
- Placentae are passed shortly after last pig or up to 12 h later
  - If you do not see placentae in 12 h there may be another pig so check her
  - If she continues to strain or has a smelly discharge check for another pig

Care of the sow after farrowing

- Most sows eat very little for up to 48h post farrowing- this is normal
  - Provide no or very little feed the day of farrowing
  - By the day after farrowing increase feed up to 10-12#
  - Expect sow to drink 4-5 gallons/day – check waterer

Questions???

We have competition!

Which vaccines should I consider?

- Should be a decision made on a case-by-case basis by the producer in collaboration with his/her veterinarian
- Consider several factors:
  - Risk of infection
  - Efficacy
  - Cost/benefit analysis
  - Public health and market access considerations

General recommendation for all producers

- A combination leptospirosis/parvovirus/ erysipelas vaccine should be given twice, at least two weeks apart, to all incoming breeding animals.
- It should also be given to all sows at weaning and to boars twice annually.

Prebreeding vaccinations

- **Leptospirosis** (lepto) is a disease which can cause abortion.
- Sows and gilts should be vaccinated against *Leptospira* bacteria before breeding.
- Lepto vaccines call for gilts to be vaccinated twice before breeding, while sows should receive a single booster vaccination at every weaning.

Prebreeding vaccinations

- **Atrophic rhinitis**
- Characterized by sneezing, snorting, and sometimes nosebleed.
- Progresses to distortion of snout
- Inapparent carriers
- Sows are vaccinated at 4 and 2 weeks before farrowing

Prebreeding vaccinations

- **Erysiplothrix (swine erysipelas)**
- **Affects growing or adult swine**
- **May cause enlarged joints, lameness, heart disease, skin lesions, high fever, sudden death**
- **Many healthy swine are carriers**

Prebreeding vaccinations

- **Parvovirus (PPV) causes reproductive failure characterized by mummified fetuses, return to estrus, small litter, NIP, and rarely abortion**
- **More likely to affect gilts**
- **Dam is not sick**
- **Occurs everywhere**
- **Vaccinate twice, two weeks apart, several weeks before breeding**

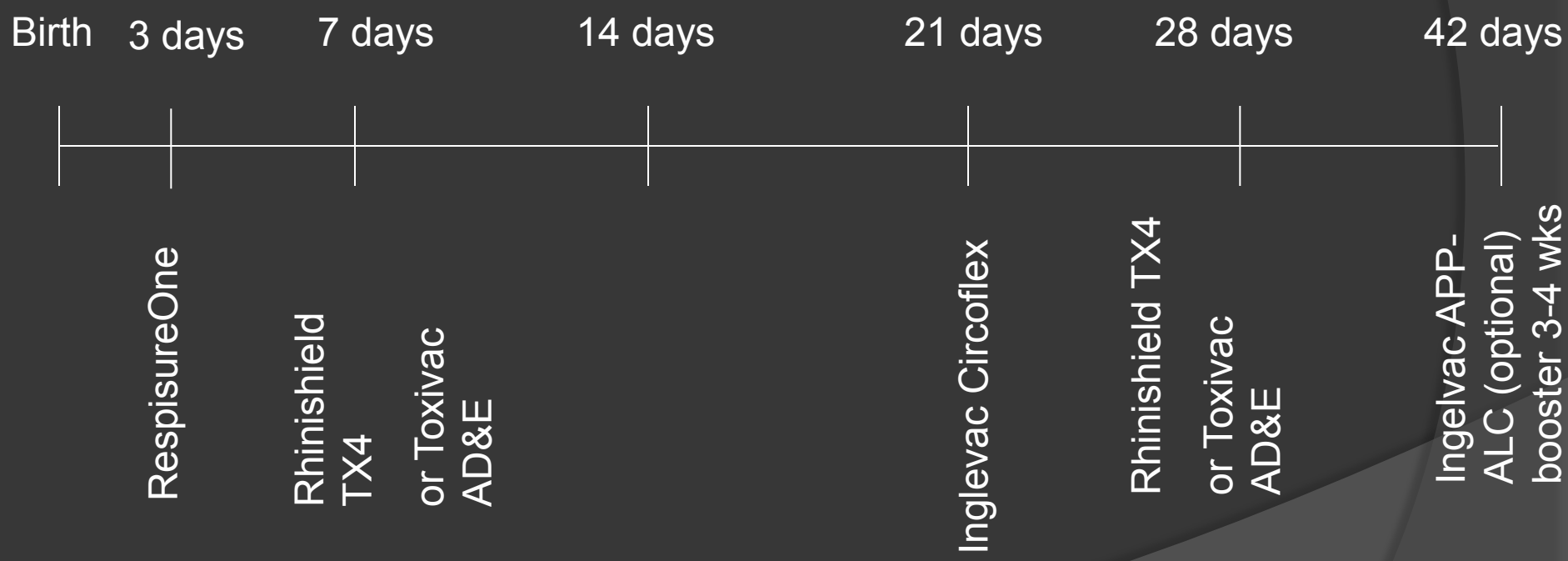
Prebreeding vaccinations

- **Colibacillosis (E. coli diarrhea)**
- **NOT 0157:H7**
- **Occurs in young piglets within a few days after birth and usually w/i first week. Other cases are observed later in the nursing period and just after weaning**
- **Pregnant sows/gilts are vaccinated twice at 3 weeks apart with last dose at least 2 weeks before farrowing**
- **Booster for each litter**

Vaccinate for the following diseases only if they have been diagnosed and if the vaccine is felt to be cost-effective

- *Actinobacillus pleuropneumoniae Clostridium perfringens*
- Encephalomyocarditis (EMC) virus
- *Haemophilus parasuis*
- *Mycoplasma hyopneumoniae*
- Porcine reproductive and respiratory syndrome (PRRS)
- Rotavirus diarrhea:
- *Salmonella*
- *Streptococcus suis*
- Swine dysentery (bloody scours)
- Swine influenza virus
- Transmissible gastroenteritis (TGE))

piglet vaccinations



PIG PARASITES (WORMS AND BUGS)

Charles Estill, OSU Extension Veterinarian

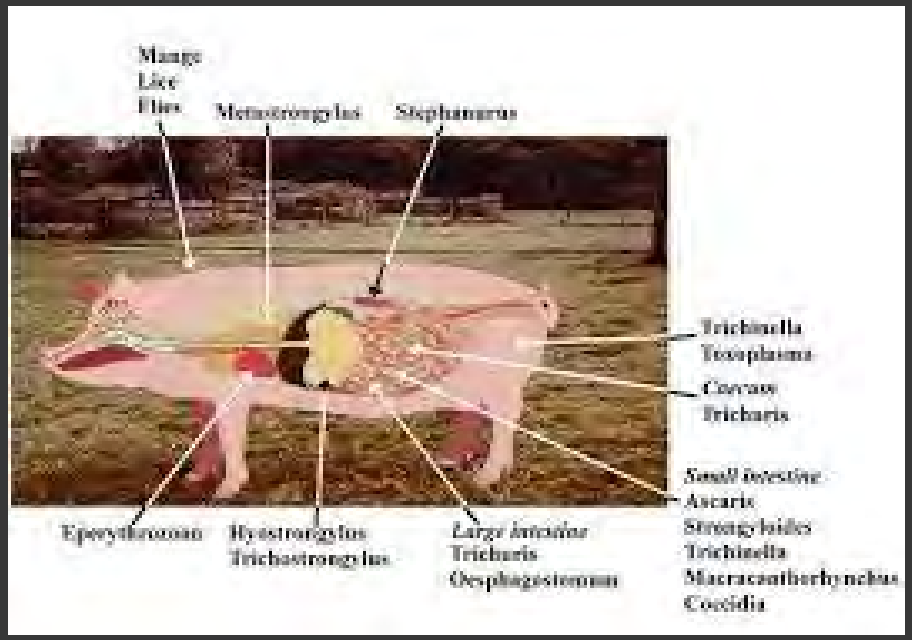
Oregon State University OSU Extension Service

Signs of parasitism

- Loss of appetite
- Reduced rate of gain (2-21%)
- Poor feed utilization (3-6%)
- Cough
- Diarrhea
- Death
- Potentiation of other bugs that cause disease
- Reduced carcass value

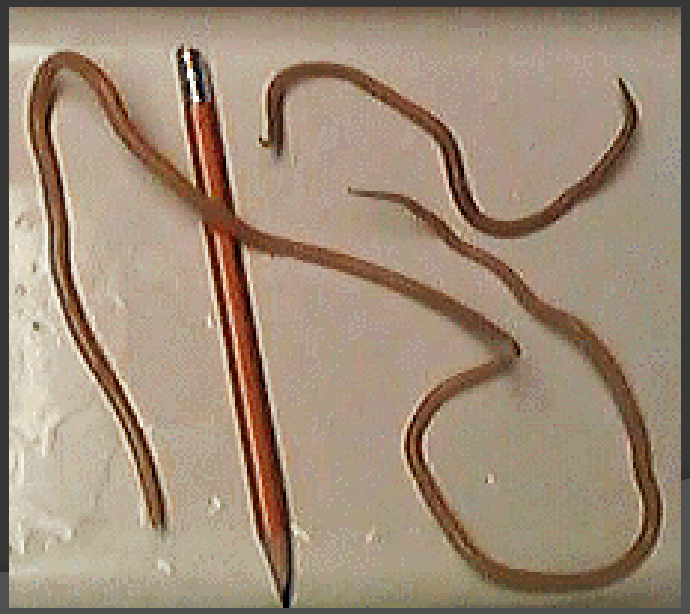
Small intestine parasites

- Threadworm (Strongyloides ransomi)



Large roundworm

- *Ascaris suum*
- Most important swine parasite
- Can potentiate flu and pneumonia



Zoonosis of Ascaris suum

Trichinella

- Can infect any mammal
- Usually infects swine and bears
- Regulation of garbage feeding (1960s) has drastically reduced incidence in US

Parasites of the cecum and colon

- Whipworms (Trichuris suis)
- Nodular worms (Oesophagostomum)

Trichuris suis

- Trichuris suis is the whipworm of pigs
  - very common in Oregon
  - adult parasites weave their long neck into the lining of the LI and cecum
  - Anemia, diarrhea, stunting of growth, and death occur from weaning to 4 months
  - Dx by finding typical whipworm ova → bipolar with golden brown color
- Associated with proliferative enteritis
- Treat with Ivomec, Dectomax, or Safeguard (in feed for 3 days)

Nodular worm

- Oesophagostomum dentatum
- Adult is 1 – 2 cm long and creamy white
  - Lives in large intestine lining
  - Causes granulomatous lesions from repeated exposures
  - Lesions in LI cause loss of its use as sausage casing
  - Treatment with Ivomec or Dectomax

Lungworms

- Metastrongylus spp.

Treatment and Control

- Ivomec, Dectomax, Atgard
- Regular deworming prior to farrowing and deworming growing piglets at 8 – 10 and 16 weeks beneficial
- Pigs on dirt are more commonly affected
  - raising on concrete or wire will reduce
  - keeping clean pigs on clean pasture will decrease build up and transmission
- Larvae are infective to humans, but not a common occurrence
- Good hygiene around pigs should be practiced

Swine Protozoa (tiny guys)

- Coccidia - Eimeria spp.
- very pathogenic in small pigs
- Diagnose at necropsy
- Fecal floats for chronic coccidiosis
- Difficult to treat effectively-treatment with sulfas individually for 5 days in baby pigs
  - Thorough sanitation of farrowing area and weaning area

Parasite control

- Sanitation
  - Easier on concrete
  - Parasites need moisture and warmth
- Drugs
  - Often only a temporary solution
  - Routine deworming advised if farm history indicates
  - Treat sows 10-14 days prefarrowing
  - Treat pigs at 3 and 6 weeks of age then 3-4 weeks after weaning
- Nutrition - especially vitamins and protein

Parasite control

- Wash sows with a mild soap solution immediately before placing them in the farrowing house. Give special attention to the udder and feet.
- Keep farrowing pens clean and free of manure to prevent exposure of baby pigs to large numbers of worm eggs and parasite larvae.
- Avoid using permanent pastures or dirt lots. If temporary pastures are not available, rotate permanent pastures yearly or renovate pastures periodically.

Parasite control

- Use well-drained areas for lots and pastures. Avoid formation of mud holes. Avoid overstocking lots and pastures.
- Provide adequate nutrition to minimize the effect of parasitism and to reduce the tendency of pigs to search and root for food.
- Do not feed raw or improperly cooked garbage or table scraps to swine (to prevent trichinosis).

Swine dewormers

Table 1. Effectiveness of deworming agents in removing common swine internal parasites.

Deworming Agent	Roundworms	Nodular Worms	Whipworms	Lungworms	Threadworms	Kidney Worms
Piperazine	75-100%	50%	0	0	0	0
Hygromycin B[1]	95-100%	95-100%	85-100%	0	0	0
Dichlorvos[2]	99-100%	95-100%	90-100%	0	60-80%	0
Levamisole[3]	99-100%	80-100%	60-80%	90-100%	80-95%	80-100%
Pyrantel[4]	96-100%	88-100%	0	0	0	0
Thiabendazole[5]	0	0	0	0	100%	0
Fenbendazole[6]	92-100%	99-100%	94-100%	97-99%	variable	100%
Ivermectin[7]	90-100%	86-100%	variable	99-100%	99-100%	100%

[1] Tradename - Hygromix, Elanco Products Co.

[2] Tradename - Atgard, SDS Biotech Corp.

[3] Tradename - Tramisol, American Cyanamid Co.

[4] Tradename - Banminth, Pfizer, Inc.

[5] Tradename - TBZ, Merck and Company, Inc.

[6] Tradename - Safe-gaurd, Hoechst-Rossel Co.

[7] Tradename - Ivomec, Merck and Company, Inc.

Footnotes

1. This document is AS50, one of a series of the Animal Science Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date March 1990. Reviewed June 2003. Visit the EDIS Web Site at http://edis.ifas.ufl.edu.

Dectomax **roundworms, nodular worms, lungworms, threadworms, kidney worms, sucking lice, mange**

External Parasites of Swine

- Hog lice
- Mange
- Ticks
- Stable flies

Hog lice

- Most common external parasite
- More of a winter problem
- Irritate skin especially legs and skin folds behind ears

Dectomax

Pfizer Animal Health

DECTOMAX® Injectable Solution

(doramectin)
Injectable

Description

DECTOMAX® Injectable Solution is a ready-to-use, colorless-to-pale yellow, sterile solution containing 1% w/v doramectin (10 mg/mL). In swine, DECTOMAX is formulated to deliver the recommended dosage (300 mcg/kg of body weight) when given by IM injection at the rate of 1 mL/75 lb of body weight.

Approved Uses

DECTOMAX Injectable Solution is approved for:

- The treatment and control of internal and external parasites of swine.
- It is safe for the use in swine of all ages, including breeding stock.
- The treatment and control of the following species of gastrointestinal roundworms, lungworms, kidney worms, lice and mange mites. Consult

Biosecurity- What's the big deal?

- The Oregon swine industry is small and very spread out so biosecurity has not been, shall we say, lax.
- But……
  - It is a JUNGLE out there!!! Trouble lurks in every pig hauler's vehicle that enters Oregon.
  - We have already suffered from letting our guard down.

What has happened?

- This year, early summer, a FFA producer in OR had pigs with a variety of common diseases that did not respond well to treatment or prevention through vaccination – PRRS was diagnosed in a pig submitted to the diagnostic lab.
- Blood testing confirmed that about 2/3 of the herd was PRRS positive – gilts were purchased from IN.
- PRRS-positive animals were marketed and surveillance continues – no new cases.

What has happened?

- Later this summer, the parents of an OR 4-H'er asked me to test two gilts that were brought in from Indiana.
- One had a history of chronic diarrhea caused by a rare strain of Salmonella. This gilt was also PRRS-positive and died.
- The other gilt was negative and retained.

What has happened?

- This past week a local producer asked to have two gilts tested. One was PRRS-positive and the other negative.
- The positive animal came from a ‘dealer’ in another part of the state. He obtained the gilt and several others from Illinois.
- We will continue testing and culling in this herd.

What went wrong?

- The herd of origin disease status was unknown.
- The pigs were co-mingled in shipment.
- Animals were sent to shows/jackpots before a diagnosis was made.
- There was no quarantine blood testing performed.

What should happen?

- Evaluate your biosecurity strengths and weaknesses.
- Evaluate your system – identify weak points (see handout).
  - Isolation
  - Indirect spread
- Fix them!

What is PRRS?

- Porcine reproductive and respiratory disease
- The MOST costly disease in the US swine industry
- A bugger to get rid of!

Epidemiology

- Once established it tends to circulate indefinitely.
- Chronic, persistent infection (to 165 d).
- Virus shed in oral, nasal, mammary, fecal, and seminal secretions (even AI).
- Exposure can be intranasal, im, oral, intrauterine, vaginal, skin breaks
- Spread by insects, fomites, breeding, airborn (1 KM), transplacentally

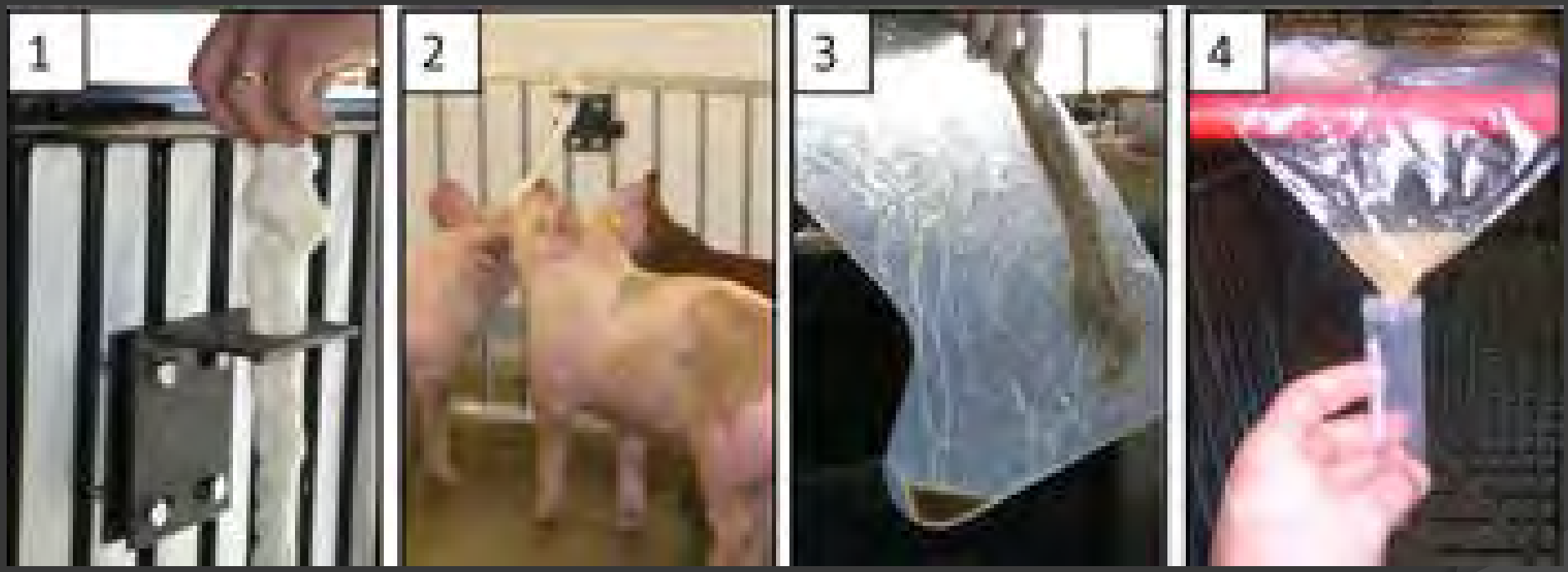
Porcine Endemic Diarrhea Virus

- It is not new – 1971 in UK
- It is not reportable
- It does not infect people
- Pork from infected animals is s
- It is a production-related disease
- As of July 2013 found in16 states
- Now in 23 states- killed 1 million pigs
  - Indiana, Iowa are hot-spots

Disease testing

- Blood samples
- Tissue samples
- Swabs
- Oral fluids

Oral fluids for disease testing



What can I do to help you?

- Answer questions
- Harp on you about biosecurity until you are sick of me
- Perform testing at no charge