

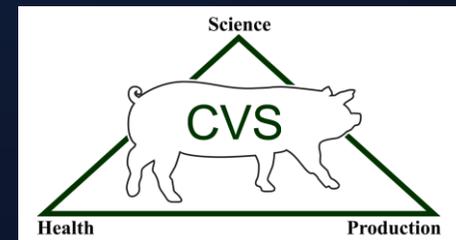
Managing Non-Infectious Causes of Sow Mortality



Clayton Johnson, DVM

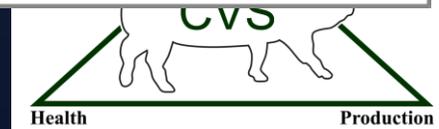
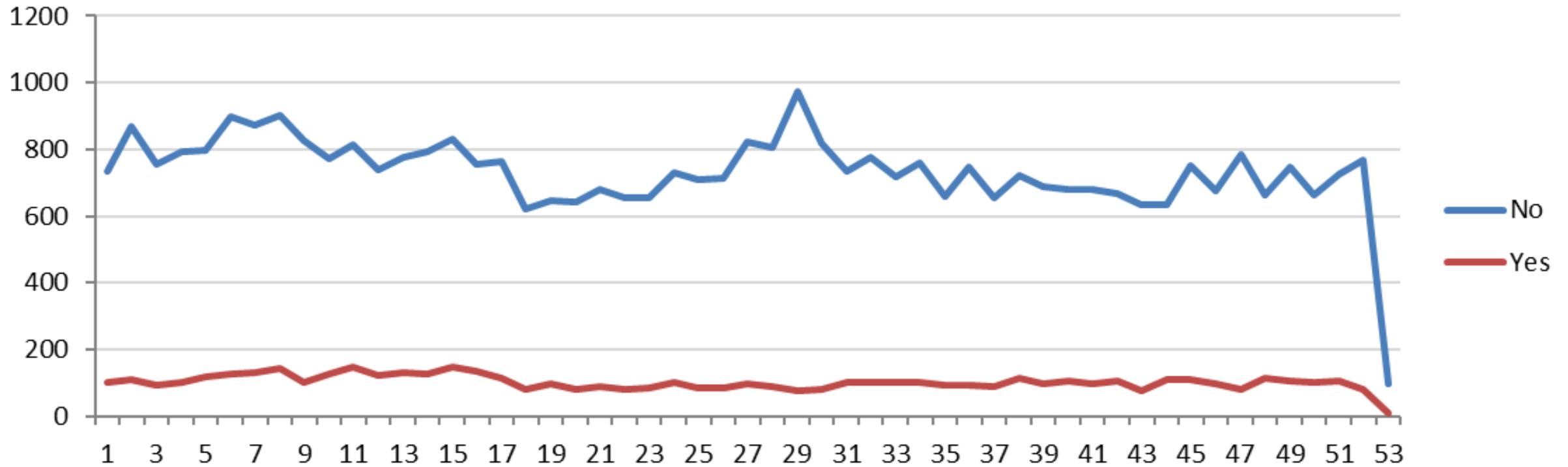
Partner & Veterinarian
Carthage System

AASV Annual Meeting



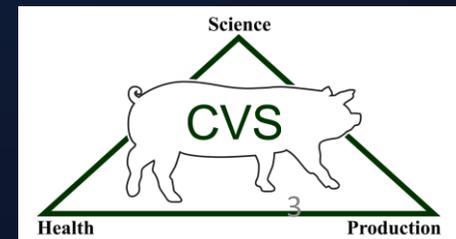
Be Honest With What's Causing the Mortality

Animals with a Treatment within 30 Days of Death

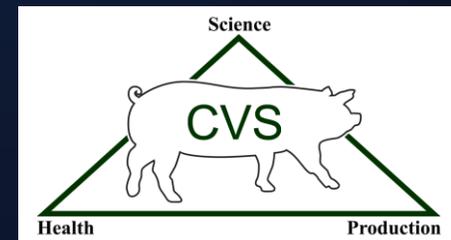


Be Honest With Our Skills

- Specialist Skills in Infectious Disease
 - Prevention
 - Diagnosis
 - Control/Treatment
- Generalist Skills in Non-Infectious Disease
 - Degenerative
 - Auto-Immune
 - Nutritional
 - Metabolic
 - Traumatic

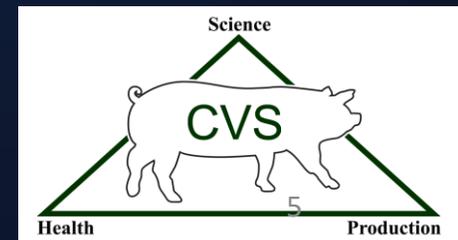


Low Hanging Fruit



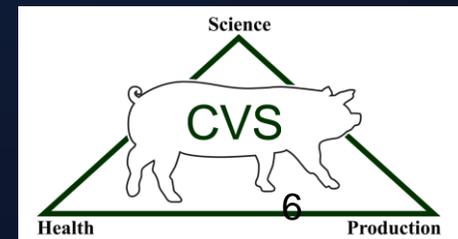
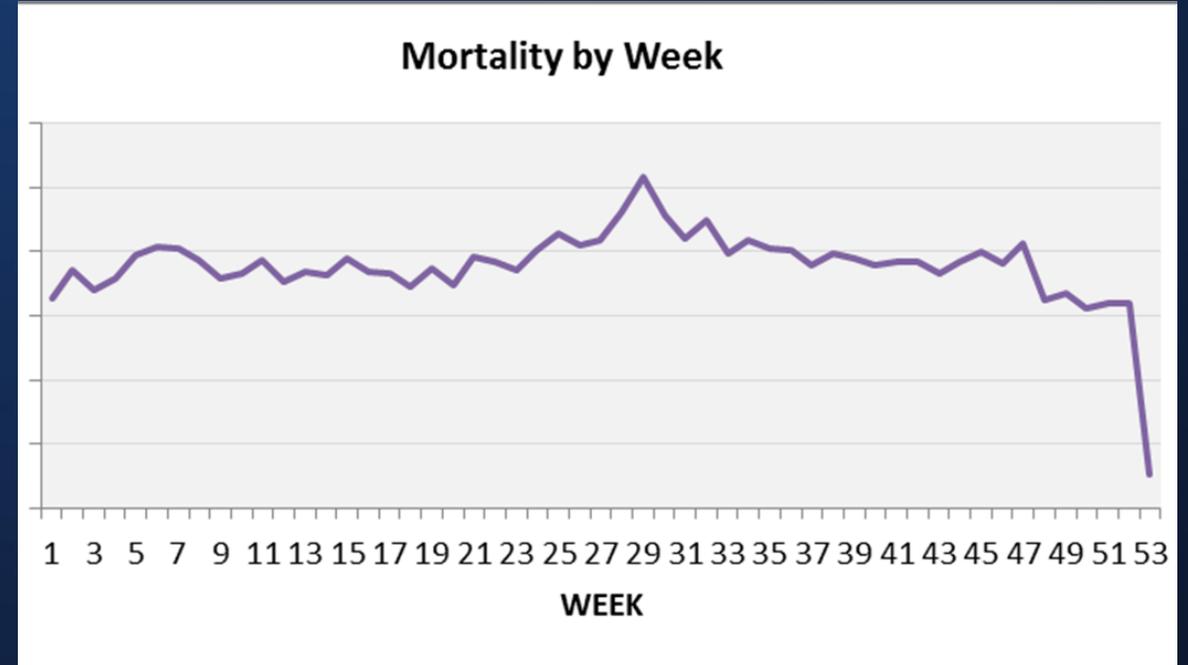
Sow Mortality Reason Codes

- Consider the Accuracy of Each Reason Code Independently:
 - Locomotive Challenges – Extremely Subjective & Likely Underrepresented
 - Prolapses – Correct Diagnosis Expected
 - Unknown – Likely the Most Accurate Description!
- Work with Your Producers to Decrease the Number of Reason Codes, Provide Written Training Materials of How to Determine Reason Code
 - Review the Decision Making Process during Visits
 - This Info will Help Prioritize Resources



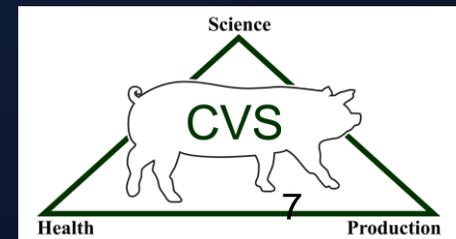
Heat Stress

- Increased sow mortality
- Increased SB
- Weaker, shorter, irregular cycles
- Decreased Lactation Feed Intake
 - Decreased piglet growth
 - Increased weight loss
 - Prolonged WTSI



Detecting the Heat Stress Problem

- Goal: identify and fix it before a problem
 - Rectal temperature of a sow 100.5-103 °F
 - Reluctance to measure and record
 - Affected by reproductive status
 - **Respiration rate** of a sow 15-25 breaths/minute at thermoneutral conditions
 - At 60 breaths per minute she is doing all she can



Managing Hot Sows

- Your Barn Must Function Perfectly!
 - Cool Cells – Must be able to achieve 400 fpm
 - Misters/Drippers
 - Fans, Inlets & Air Volume – Measure & Calculate if Unsure
- Identify Sows in Heat Stress
 - Recently Loaded & Actively Farrowing Rooms
- Cool Them Down!
 - Water & Air



Managing Hot Sows: Triage Situations

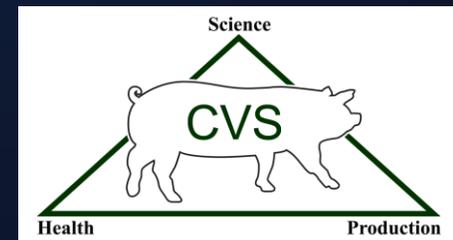


Homemade Dripper System - ~\$3/Crate

Dripper System Using Irrigation Supplies from Hardware Store for 56 Crate Room

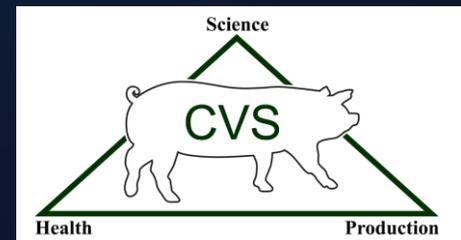
| Part | Units | Cost/Unit | Total Cost | Menards SKU |
|--|-------|-----------|-----------------------------|-------------|
| 10' Extension Hose | 1 | \$ 8.99 | \$ 8.99 | 2741500 |
| Rainbird® Drip Irrigation Tubing Cutter/Hole Punch Combo Tool (can reuse for entire project if expanded) | 1 | \$ 14.99 | \$ 14.99 | 6902087 |
| Rain Bird® 3/4" FHT x 1/2" Drip Irrigation Hose Adapter | 1 | \$ 2.47 | \$ 2.47 | 6902608 |
| Rain Bird® Easy Fit Drip Irrigation Tee | 3 | \$ 1.99 | \$ 5.97 | 6902531 |
| Rain Bird® Easy Fit Drip Irrigation Elbow | 2 | \$ 1.49 | \$ 2.99 | 6902532 |
| Rain Bird® 1/2" x 100' Drip Irrigation Tubing | 4 | \$ 9.97 | \$ 39.87 | 6900010 |
| Rain Bird® 1/2" Drip Irrigation Universal Flush Cap | 4 | \$ 2.47 | \$ 9.89 | 6902607 |
| Rain Bird® Easy Fit Drip Irrigation Coupling | 2 | \$ 0.99 | \$ 1.98 | 6902530 |
| Rain Bird® 0.5 GPH Drip Irrigation Emitter - 10 Pack | 6 | \$ 5.29 | \$ 31.75 | 6902642 |
| NIBCO® 1/2" CPVC-CTS Pipe Strap (bag of 5, need 28/room of the individual straps) | 6 | \$ 0.78 | \$ 4.65 | 6891174 |
| Grip Fast® #10 x 3/4" Stainless Steel Hex Head Self-Drilling Screw - 50 Count | 2 | \$ 7.09 | \$ 14.18 | 2331323 |
| Bosch® Impact Tough™ 1-7/8" x 5/16" Hex Nut Driver (can reuse for each room) | 1 | \$ 3.79 | \$ 3.79 | 2526828 |
| | | | Total Cost \$ 141.51 | |

johnson@hogvet.com

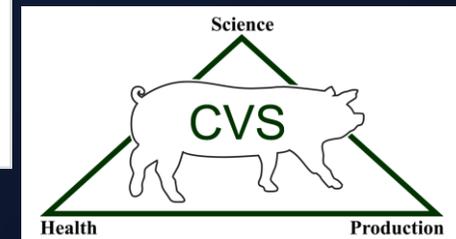
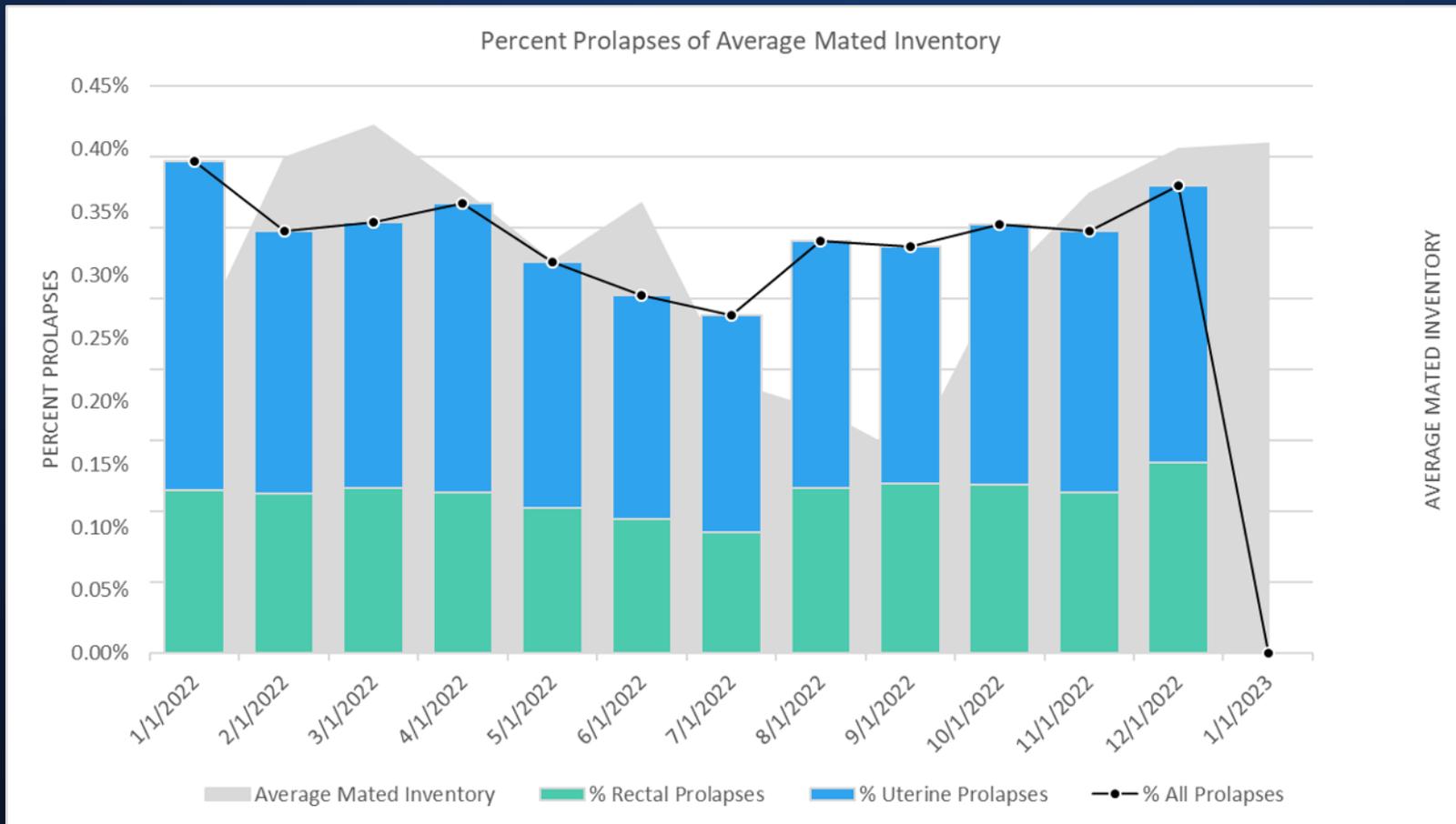




Not Low Hanging Fruit

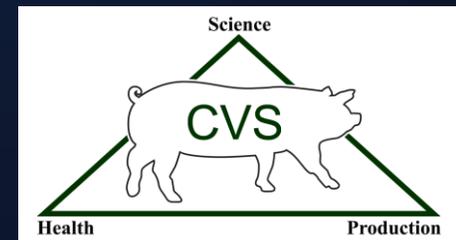


Monthly Prolapse Incident Rates - 2022



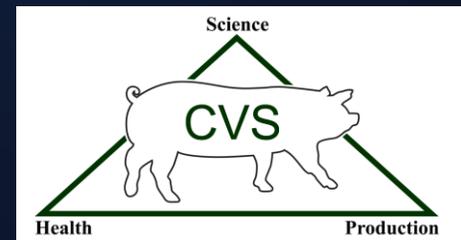
Prolapse Prevention – Best Practices

1. Cull Perineal Score 3 Females when Open
 - Most consistent leading indicator of Prolapse
2. Minimize the number of thin sows at farrowing
 - Field data support that risk of prolapses is higher in this population.
3. Do not feed gilts by body condition, they need maintenance level
 - Do not feed fat sows under maintenance level
4. Mitigate constipation pre-farrowing.
 - Water intake pre-farrow a key area, laxatives usage positive when water intake is achieved first
5. Limit feed intake pre farrow - feed same amount of feed than previously in gestation when loading farrowing room
 - Split amount in at least two meals
 - Reduce time from last meal to farrow to shorten up farrowing length



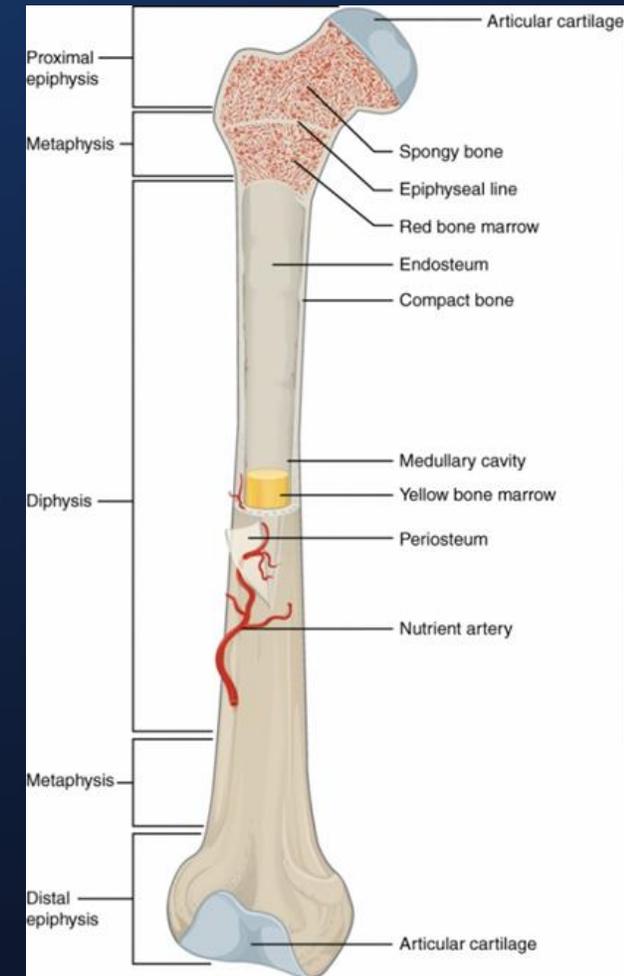
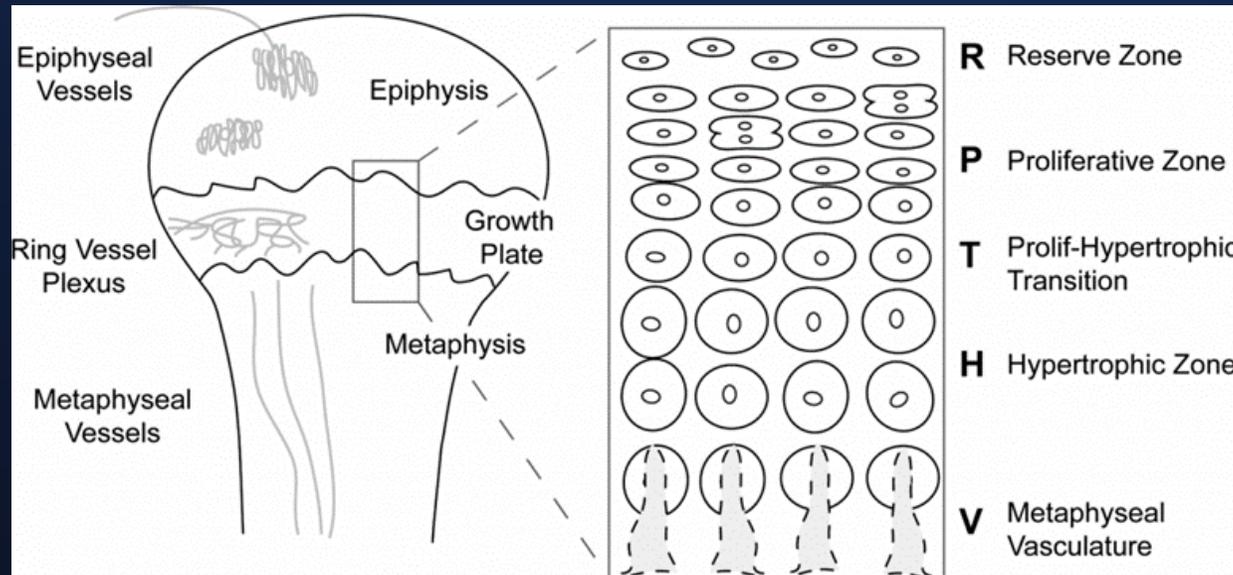
Osteochondrosis (OCD)

Deep Dive



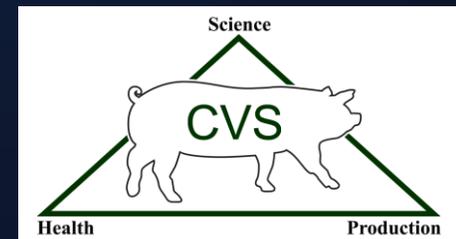
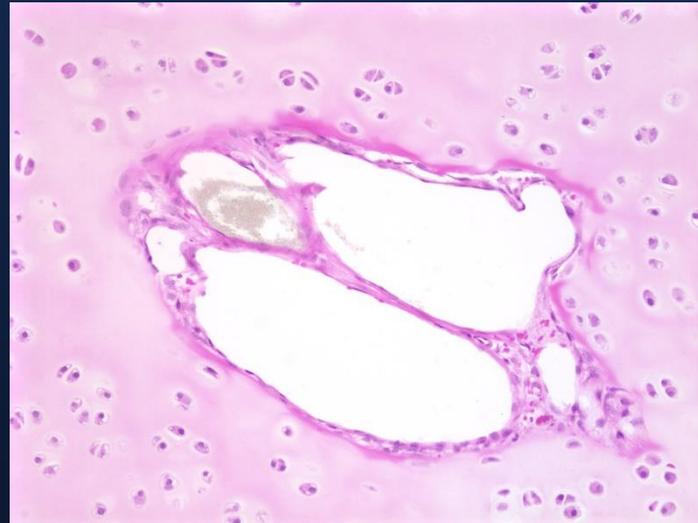
Osteochondrosis (OCD) Background: Vascular Supply to Cartilage

- Articular cartilage is avascular
- In adolescents epiphyseal cartilage is supplied by blood vessels within cartilage canals



Cartilage canals

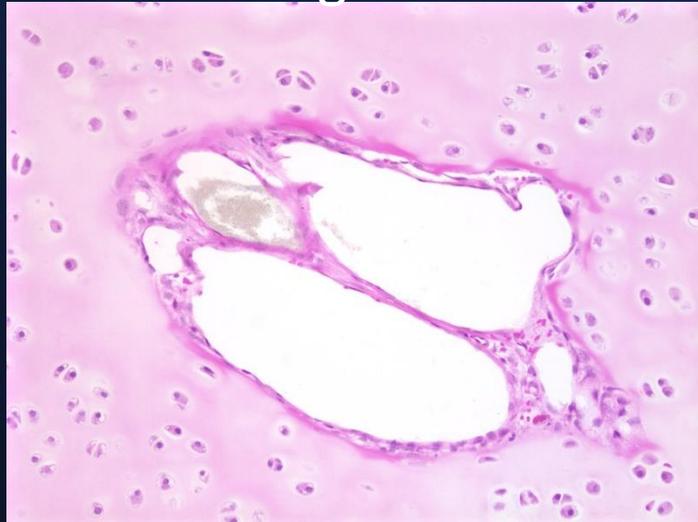
- Important for the viability of epiphyseal (growth) cartilage
- In contrast, adult articular cartilage derives almost all of its nutrition from synovial fluid



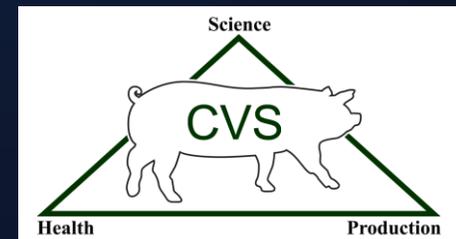
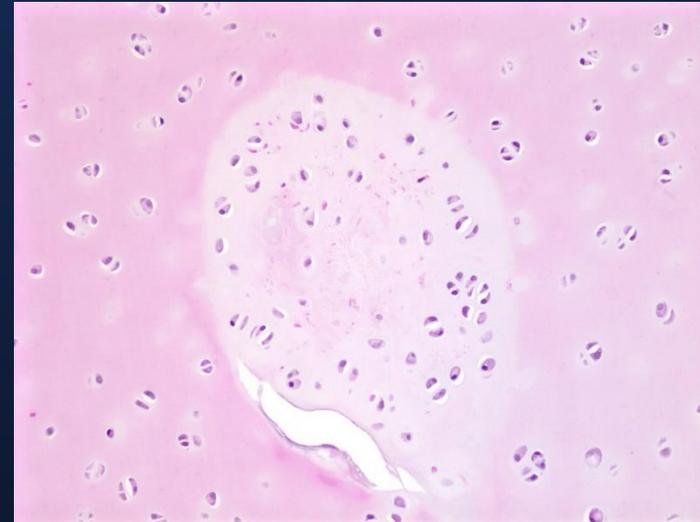
Chondrification

- Cartilage Canals are present at birth, and gradually decrease in number and extent with age and weight
- Disappear completely by several months of age

Cartilage Canals

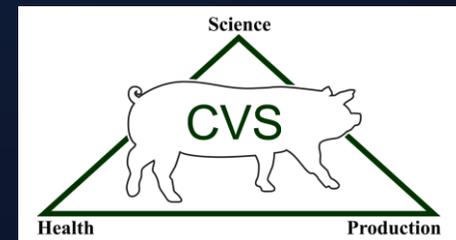


Chondrification



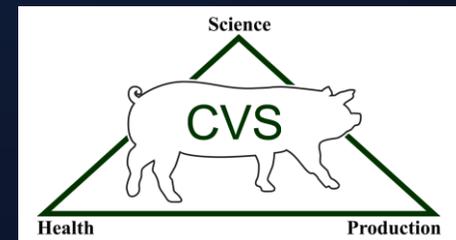
Osteochondrosis

- Because epiphyseal cartilage is absent in the adult, the underlying lesions of osteochondrosis can only occur in growing individuals.
- Studied mainly in chronic stages, during which it causes significant problems due to lameness
- Early (subclinical) lesions are not painful and, thus, are not evident clinically



Trauma Prevention is Key

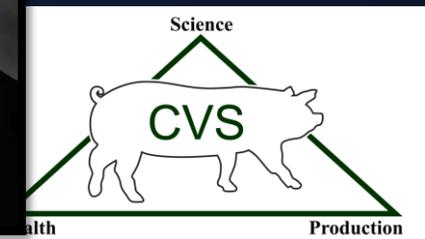
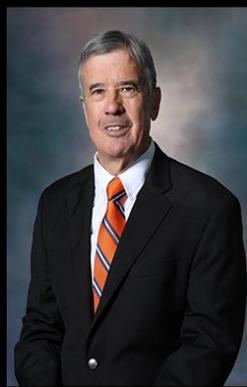
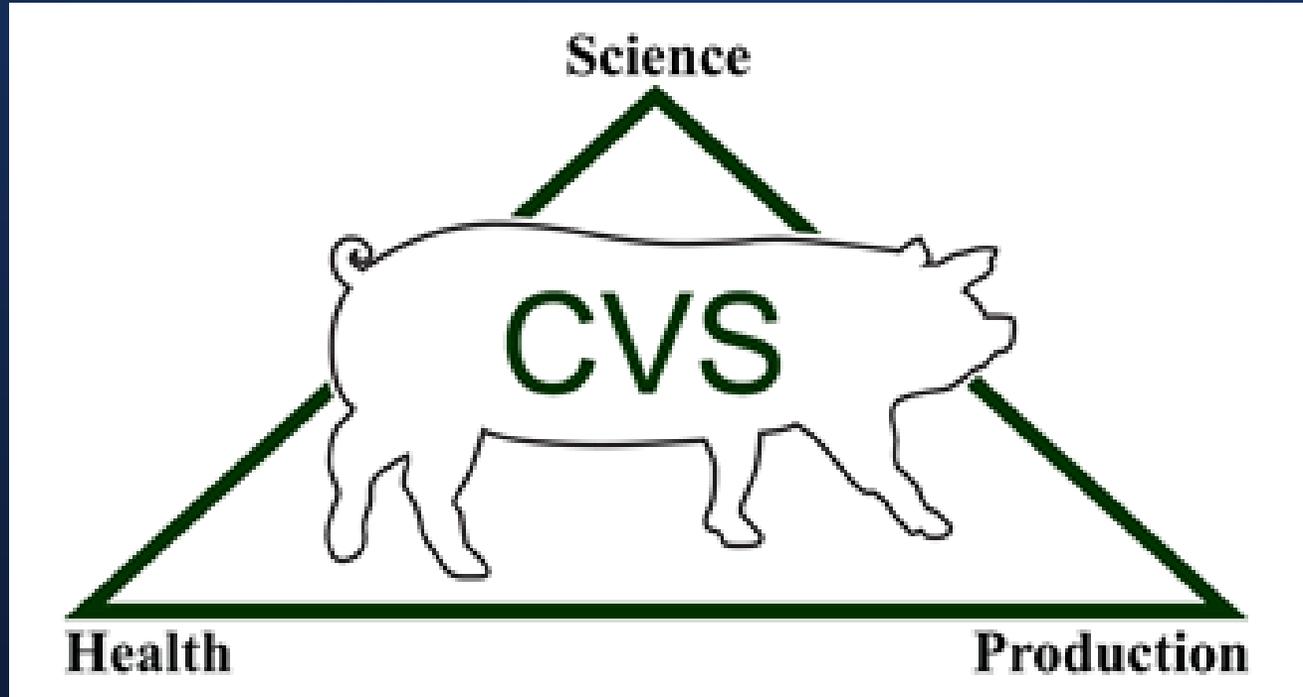
- Once lesions form, trauma is important in converting subclinical to clinical disease
- Need to minimize joint trauma
 - Soft flooring
 - Care during transport, especially loading and unloading
- Majority of lesions heal
 - Minimize trauma between 2 and 6 months of age



johnson@hogvet.com

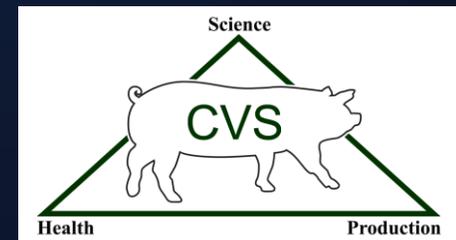
Thank You

<https://carthagesystem.com/>



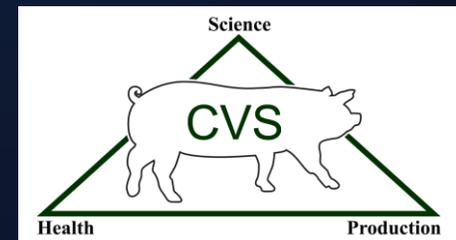
Trauma

- Most widely proposed etiology
- Appearance of chronic lesions
- Some predilection sites in areas of increased biomechanical stress
- Most cases in humans, however, have an insidious onset



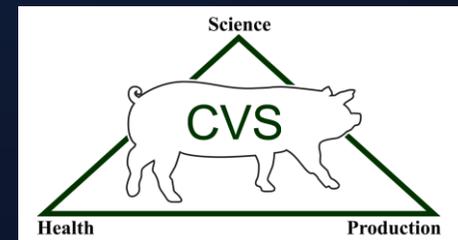
Role for trauma in OC

- Pigs have equal numbers of subclinical lesions in A-E complex of both femoral condyles, but lesions causing lameness invariable located in medial condyle (weight-bearing forces)
- Housing on hard flooring increases prevalence/severity of OC
- Most probable role of trauma is as a final insult to compromised epiphyseal cartilage



Heredity and rapid growth

- Genetic factors
 - Familial in humans; identical twins
 - Prevalence high in all domestic pigs (genetically selected for rapid growth)
 - Disease absent in wild and miniature pigs



Heredity and rapid growth

- Rapid growth
 - Prevalence of lesions is not altered significantly by reducing growth rate by restricted feeding or by breeding animals with fast growth rates with those with slower growth rates
 - F2 generation of wild and domestic pig crosses have same lesion prevalence as domestic pigs

