

# RESEARCH BRIEF

SWINE



## IMPACT OF GASTRIC ULCERS

One of the most common issues in modern pig production systems worldwide is the presence of gastric ulcers. Mortality as high as 1% can be attributed to gastric ulcers in grow-finish pigs and sows, although ulcers impact pigs at every stage of production. (Can Vet J. et al., 2002)

How can producers, feed specialists and veterinarians help pigs experiencing gastric ulcers? The answer may include feeding plasma derived functional proteins to light weight and at-risk pigs either by mixing it into the drinking water or top-dressing on feed.

## CAUSES OF ULCERS IN PIGS

There has been a consensus in the animal science community that the cause of ulcers in pigs is multifactorial in nature. Pigs typically develop ulcers during high stress times in their lives, such as prolonged transportation, extreme weather and adjusting to new living arrangements. These stressors can cause off feed events. Excess stomach acid can quickly damage the esophageal region of the stomach, causing ulcers to develop. The cascading effect includes pain and reduced feed intake. In severe cases, it can lead to erosion of the stomach lining which may result in bleeding or even sudden death. This creates a vicious cycle that won't correct itself without intervention.

## ECONOMIC IMPACTS

As the fourth highest cause of mortality in pigs, gastric ulcers are a costly problem for the swine industry in pigs lost before market. Currently, there are no available treatment options that can be prescribed by veterinarians to heal ulcers. However, producers and veterinarians have found success using plasma derived functional proteins.

A large commercial integrator study shows using plasma derived functional proteins improves ulcer recovery rates in pigs by more than 70% with an average return on investment of 8:1.

# Started	% Recovered	ROI
94	79.8	8.3
733	82.0	8.6
118	95.8	10.2
407	76.6	7.9
146	78.8	8.2
402	57.0	5.6
244	69.5	7.1
230	90.9	9.6
2374	76.9	8.0

### Clinical Symptoms of Gastric Ulcers in Piglets, Weaners, Grow/Finish and Sows

Paleness of the skin due to internal hemorrhage and anemia
Dehydration
Lack of intermittent appetite
Weight loss / wasting
A tucked-up appearance
Weakness
Vomiting
Breathlessness
Grinding of the teeth
Passing of dark feces containing digested blood
Previously healthy animals are found dead

*"Boars with ulceration symptoms have returned to the semen collection process in as little as 15 days after being fed 30g per day of AP 920."  
-APC Client in Brazil, personal communication, 2020*



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## PLASMA DERIVED PROTEINS AID IN RECOVERY

Research and commercial trial results demonstrate using plasma derived functional proteins can be an effective tool in helping speed recovery from ulcers (Crenshaw et al., 2003).

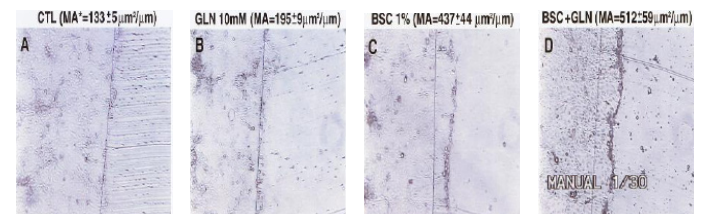
Plasma is comprised of a complex mixture of functional proteins (we call them FPs for short) that include transferrin, lysozymes, growth factors, cytokines, immunoglobulins and many other components that have a profound, positive impact in swine. Consumed orally, the FPs support the body's natural immune response to inflammation and help the immune system to respond more quickly and efficiently. This helps animals to use their energy for productive functions instead of using it to fight the stressor. FPs help to minimize the effects of stressors and get animals back to normal quickly, effectively and consistently. (Pérez-Bosque et al., 2016).

Research has shown that plasma derived proteins:

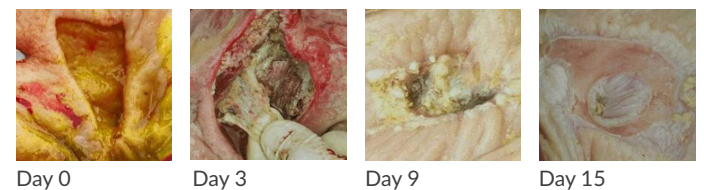
- Reduce the extent and severity of symptoms
- Help speed recovery
- Stimulate water and feed intake
- Get ulcer pigs back on feed fast
- Promote weight gain
- Improve the percentage of pigs that recover to become full value pigs

### Plasma Derived Proteins Help Speed Recovery

Study Summary (Rhoads et al., 2000)



Trial of Solutein in Gastric Ulcers (Crenshaw et al., 2003 - AASV)



## PLASMA IS AN ECONOMICALLY FEASIBLE AND PROVEN CHOICE TO HELP PIGS WITH ULCERS RECOVER



### PRODUCT OPTIONS



AP 920 | 820  
Spray Dried Plasma Powder



APPETEIN  
Granulated Plasma



SOLUTEIN  
Soluble Protein Blend

AP 920 spray dried plasma powder or Appetein granulated plasma are both options for use in swine experiencing stress from ulcers and may be formulated into a special diet or used as a top dress.

Solutein is a multi-purpose water soluble and (top dress) feed additive management tool. It contains plasma and serum proteins as well as other vital nutrients for swine health and nutrition. Please ask for the Solutein brochure for details on mixing and feeding rates.



Crenshaw, J. D., PhD, Campbell, J. M., PhD, & Quam, D., DVM. (2003). Evidence of gastric ulcer tissue repair in swine offered Solutein via the water. American Association Of Swine Veterinarians, 105-109.  
McClure, S. R., Campbell, J., Polo, J., & Lognon, A. (2016). The Effect of Serum-Based Bioactive Proteins for the Prevention of Squamous Gastric Ulcers in Horses. Journal of Equine Veterinary Science, 43, 32-38.  
Rhoads et al., 2000. Gastroenterology 118:A825.  
Additional research information available upon request.