



ROLE OF SDP TO SUPPORT IMMUNITY AND MANAGE SWINE FARM HEALTH IN REGIONS EXPOSED TO ASFV

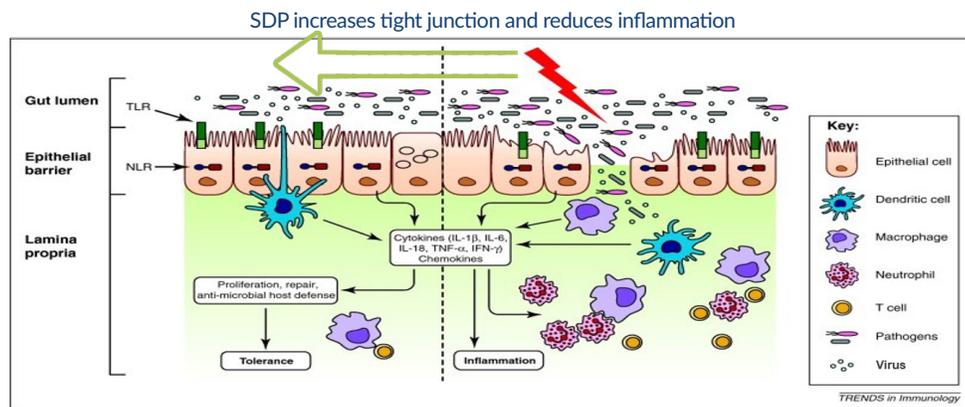
Over the past two years African swine fever virus (ASFV) has resulted in high mortality and disrupted trade of pork in swine producing regions of various Asia-Pacific countries. Aggressive biosecurity efforts have been implemented by swine producers to minimize the spread of ASFV and keep it from infecting their swine farms. Many producers in ASFV regions still struggle to keep ASFV out of their farm, even with enhanced biosecurity investments and protocols. There is evidence showing that pigs with a healthy immune system are less likely to get infected by ASFV than pigs that have a compromised immune system and gastrointestinal disease [1]. In the absence of vaccine as a tool to build immunity against ASFV, producers should consider other strategies, including dietary interventions, that can enhance immunity and improve herd resistance to disease.

SDP HAS BEEN USED IN WEANED PIG FEED FOR ITS WELL-KNOWN BENEFICIAL EFFECTS



Spray-dried animal plasma (SDP) has been used in weaned pig feed for its well-known beneficial effects on performance, immunity and herd health especially under disease or stress related conditions. SDP contains functional proteins that modulate the efficiency of the immune system to restore the integrity and functions of the gastrointestinal system and reduce damage caused by chronic inflammation [2]. Feeding SDP to pigs not only maintains the structure of the gastrointestinal tract but also increases regeneration of enterocytes, leading to a healthier gut and enhanced barrier function [Fig 1]. Damaged mucosal integrity will facilitate ASFV infection at the intestinal level. ASFV specifically targets and infects monocytes and macrophages which congregate at sites of barrier breakdown associated with damage caused by excessive inflammation. Therefore, maintaining intestinal barrier integrity and function may reduce potential for ASFV infectivity because the number of target cells will be significantly reduced.

PLASMA FUNCTIONAL PROTEIN IMPROVES INTESTINAL BARRIER FUNCTION

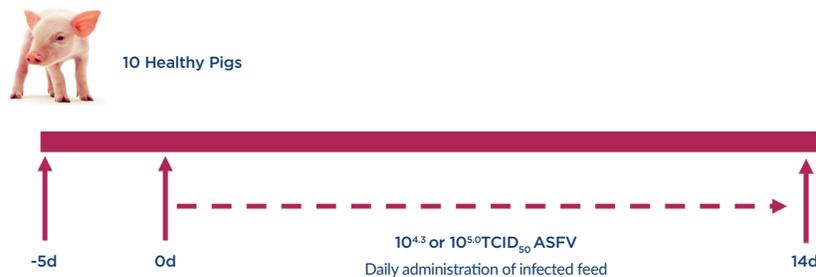




Interestingly, a new study [3] reported that pigs fed unprocessed liquid porcine plasma intentionally inoculated with a high dose of active ASFV, then mixed with feed and provided daily for 14 days did not become infected with ASFV [Fig 2]. These results indicate the minimum infectious dose of ASFV is much higher than previously reported at least when pigs are exposed to ASFV-spiked unprocessed liquid porcine plasma mixed on feed. Perhaps there are inherent components in the liquid porcine plasma that may have interfered with the ability of ASFV to infect the pigs. Past research has demonstrated pigs fed diets with spray-dried plasma and experimentally infected with PRRSV [4] or PEDV [5] had a more rapid rate of virus clearance than pigs fed a diet without spray-dried plasma.

ASFV ADDED TO LIQUID PORCINE PLASMA WAS NOT INFECTION IN FEED

No clinical signs of disease, fever, viremia or seroconversion was observed in any pigs fed with active ASFV (Georgia 2007) inoculated in liquid porcine plasma blended in feed at a dose of $10^{4.3}$ or $10^{5.0}$ TCID₅₀ for 14 consecutive days.



In summary, SDP is a safe ingredient and should be considered a viable dietary intervention to support a healthy gut and immune system, reduce morbidity and mortality, and reduce susceptibility of pigs to get ASFV.