

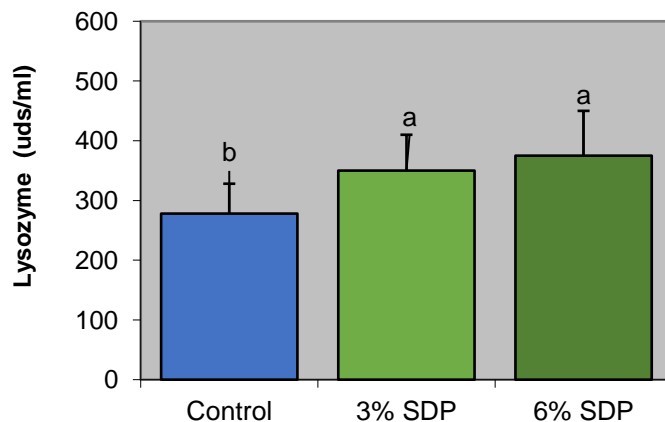
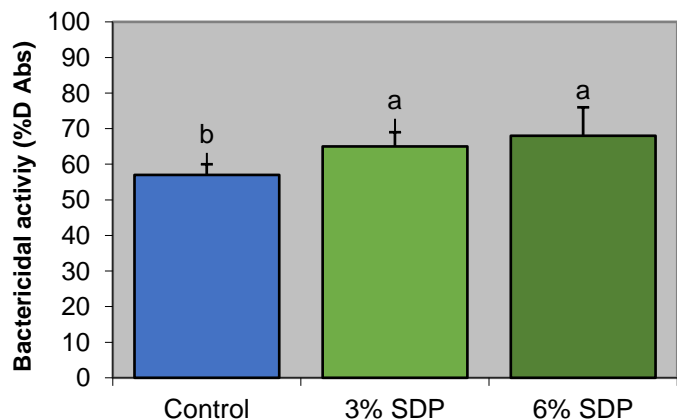
In addition to the benefits of dietary supplementation of SDP on growth performance, their use has also been recommended in animal diets as a source of immunological support due to their immune modulatory components, including immunoglobulins, bioactive peptides and growth factors. The nutrition provided by SDP improved the health condition of farm fish by enhancing immune competence and reducing the redox status in the intestine, as well as improving the animal's ability to cope with stress.

### Enhanced Immune Status of Sea Bream

Diets (cold extrusion, 0.8-1.5 mm pellet size) were manufactured by substituting high quality fishmeal with 0, 3 and 6% SDP (AP820P, APC Europe Inc.) and tested for a period of 60 days at 22°C. Fish (1.3 g initial BW) were fed at satiation levels and each diet was tested with four replicates (400 L tanks, 150 fry/tank). Results indicated that dietary SDP promoted fish growth. In addition, the nutrition provided by SDP reduced oxidative stress levels in the liver and intestine, improving the health condition status of the animal. Further, fish fed diets containing SDP have an enhancement of the blood non-specific immune parameters.



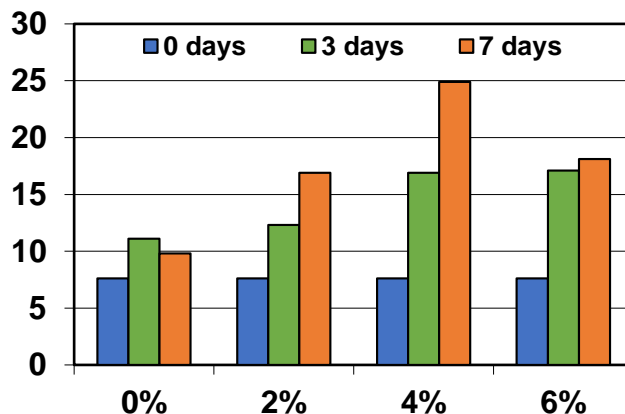
SDP increases the non-specific serum immune response in fish, providing protection against potential pathogen infections



### Increased Immune Capacity of Shrimp

*Penaeus japonicus* were stocked at a density of 15 shrimp per tank (60 cm x 30 cm x 40 cm) and water temperature maintained at 25°C. Hemolymph samples were collected on days 0, 3 and 7 of the study. The activity of isolated hemocytes was determined by measuring the rate and extent of latex bead phagocytosis as measured by fluorescent microscopy. On days 3 and 7, there was an increase in the phagocytic activity of isolated hemocytes that corresponded to increasing levels of SDP

Effect of SDP on Shrimp Phagocytic Activity



### Summary

The research is clear: the nutrition provided by the inclusion of SDP in the diet of farmed fish and shrimp enhances the intestinal health condition and innate immune function in fish and aquatic species. Fish farmers and aquatic producers should look closely at their feed ingredients, because the inclusion of SDP in aquaculture diets may help improve the immune capacity of the animals to cope with stress.

### Bottom Line



Gisbert, E., et. al. 2015. Spray-dried plasma promotes growth, modulates the activity of antioxidant defenses, and enhances the immune status of gilthead sea bream (*Sparus aurata*) fingerlings *Journal of Animal Science* 93:278–286. doi:10.2527/jas2014-7491.

Russell, L., and J. M. Campbell. 2000. Trials show promise for spray dried plasma protein in shrimp feeds. *The Global Aquaculture Advocate* 3:42–43.