

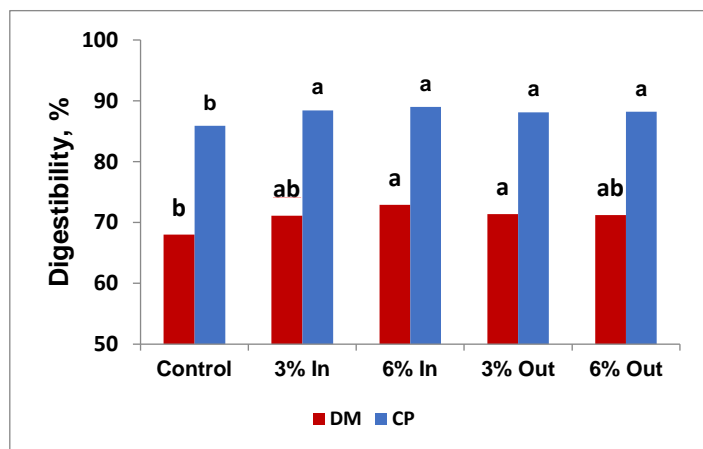
In addition to the benefits of dietary supplementation of Spray-Dried Plasma (SDP) on growth performance, the nutrition provided by SDP also improves the health condition of farm fish by enhancing its immune competence and reducing the redox status in the intestine, as well as improving the animal's ability to cope with stress. Studies demonstrate that feeding different fish species with SDP as a part of their diets while under challenge significantly increases the rate of survival.

Increased Digestibility and Survival of Rainbow Trout

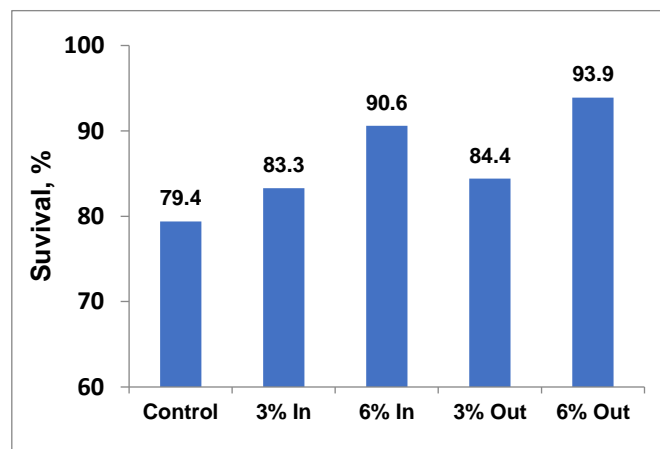
Groups of 60 rainbow trout (*Oncorhynchus mykiss*) (average BW, 11 g) were stocked in 15 - 1300 L tanks supplied with 20 L/min, constant temperature (15°C), and second-use water. Treatments were control, 3% or 6% SDP IN, and 3% or 6% SDP OUT. All diets were iso-nitrogenous and isolipidic and met or exceeded the nutritional requirements of rainbow trout. The diets were fed for 84 days. Results indicated increased crude protein digestibility in diets containing SDP. Biomass was also increased with SDP compared to control. Overall survival was increased with both inside and outside application of SDP.



Digestibility effect of SDP in rainbow trout



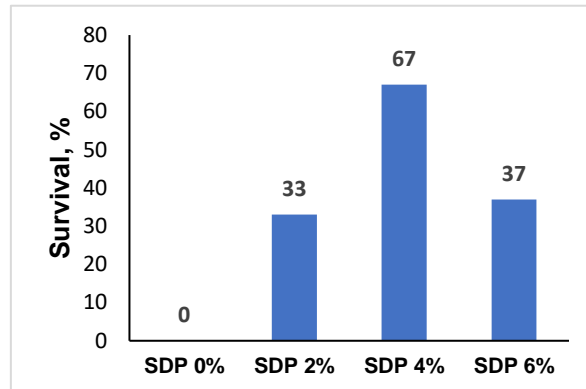
Survival effect of SDP in rainbow trout



Increased Survival of Shrimp

Shrimp (*Penaeus japonicas*) with an average weight of 13 g were assigned to one of four diets containing 0%, 2%, 4% or 6% SDP. Laboratory tanks (60 cm x 30 cm x 40 cm) were stocked with 15 shrimp per tank and maintained at 25°C during an 18-day-feeding period. Feed was offered at 2% body weight per day. On day 8, the shrimp were exposed to White Spot Syndrome Virus (WSSV) by immersing them in a contaminated tank and then returning them to the original tank. Use of SDP in shrimp diets improve survival of shrimp.

Survival effect of SDP during a WSSV challenge in shrimp



Summary

The research is clear: the nutrition provided by the inclusion of SDP in the diet of farmed fish and shrimp improves both survival and feed efficiency (digestibility). Fish farmers and aquatic producers should look closely at their feed ingredients, because the inclusion of SDP in aquaculture diets might not only reduce the negative impact of disease and stress in aquaculture systems, but also improve growth performance and efficiency during the rearing process.

Bottom Line



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.

Campbell, J., et. al. 2014. Performance of rainbow trout fed diets supplemented with spray-dried plasma. In *Proc. of the Aquaculture America 2014 Congress*. Febr. 9-12. Seattle, USA. Pp. 60.