

Title Physical properties of extruded tilapia feed with distiller dried grains with soluble
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Abstract

Distillers' dried grains with solubles (DDGS) from ethanol manufacturing plants contain a high percentage of protein, and are primarily used as livestock feed. The conversion efficiency of feed into body tissue is generally much higher in fish than farm animals. Fish can convert up to 36% of feed protein into body protein, whereas beef typically converts only 15%. Extrusion technology is very widely used for the production of floating and non floating aquaculture feeds. Therefore, the objective of this study was to quantify physical properties of extrudates containing 20,30 & 40% DDGS and net protein content adjusted to 28%. Three feed blends containing 28% protein with an energy content of 350 Kcal/100 grams were formulated with 20, 30 and 40% of DDGS along with appropriate levels of fish meal, soybean meal, corn flour, vitamin mix and mineral mix. These ingredient blends were extruded in a Brabender single screw extruder at 100, 130, and 160 rpm and 15, 20 and 25% moisture content and the physical properties were determined. The pellet durability of the extrudates was in the range of 0.37 to 0.96, and the percentage of DDGS present in the feed significantly affected the pellet durability. The specific gravity of the extrudates which determines the floatability was in the range of 0.82 to 1.05, and the lowest specific gravity of 0.82 was recorded at 20% DDGS, 20% moisture and 100 rpm screw speed.