

Wyatt Palsler
Junior Division Engineering
To Spin or Not to Spin: An Investigation of Fishing Lure Design

Fishing lures are designed to appeal to a fish's natural senses, such as the lateral line. This research was conducted to determine optimum spinnerbait parameters (blade configuration and skirt mass) to design a spinnerbait that would appeal to the lateral line. A spinning blade produces vibration. It was hypothesized that the spinnerbait equipped with a single Colorado blade would produce more blade spins than that of a spinnerbait with a single Willow Leaf blade or a Tandem Spin blade. It was also hypothesized that the spinnerbait with a thicker skirt would have a slower drop velocity, giving the blade more time to spin on the drop. The first hypothesis was tested by designing a flow tank that the spinnerbait could be placed in so the blades would spin. The hypothesis was supported. The single Colorado blade spinnerbait had a higher number of spins (37) than that of the single Willow Leaf (25) or the Tandem (32). Drop velocity was determined for spinnerbait bodies of mass 0g, 1.23 g, 2.46 g, 4.92 g, 7.38 g. The second hypothesis was supported with skirt mass 7.38 g drop velocity of 23.56 cm/sec. A one way ANOVA found the data to be statistically significant. A prototype, developed using the single Colorado blade configuration and a skirt mass of 7.38 g was found to follow the optimized parameter data. The project goal was met.