demonstrated. Nevertheless, this structural similarity between Pavlovols and ecdysone led researchers to suspect that roles of *Pavlova* in the diets of shellfish larvae may include both nutritional and hormonal activities. Previous experiments demonstrated that inclusion of *Pavlova* in T-ISO diets fed to larval bay scallops, varying both the percentage and timing of *Pavlova* density for this bioassay was 15 scallop larvae per ml in 4 ml of 1.0-µm-filtered seawater (FSW) per well of a 12-well, polystyrene plate. The Ecdysone 1x solution had a concentration of 2.46 mg/l (LC

Results and Discussion:

The primary purpose of this experiment was to test the hypothesis that *Pavlova* contains a chemical component, likely pavlovol, that acts as an analog for the hormone Ecdysone in promoting metamorphosis in Northern bay scallop larvae. A secondary purpose was to test the hypothesis that ecdysone promoted early metamorphosis of scallop larvae. This experiment also tested whether the insecticide Azasol, known to block ecdysone promotion of pupation in lepidopteran insects (Martinez, 2001) blocks larval scallop metamorphosis stimulated by both ecdysone and *Pavlova*.

MANOVA results indicate that *Pavlova* and Ecdysone both promote metamorphosis of larval bay scallops, and this activity is blocked by Azasol (Table 1). Evidence of this is shown in Figure 3; by day 12, *Pavlova* induced significantly higher metamorphosis than the T-ISO diet (Figure 5). The lowest AZA concentration tested, 0.1 µg/ml, was as effective as the higher concentrations at blocking metamorphosis induced by *Pavlova*; therefore, the threshold of effect is <0.1 µg/ml (Fig. 6).

This study has also shown that AZA inhibits setting of Bay Scallop larvae at day 12. This data, shown in Figure 6, corroborates the finding of Peng (Peng, 2000). Finally, this experiment has shown that Ecdysone promotes setting in 12 day-old bay scallop larvae. This is shown in Figure 5, and helps to corroborate the work of Karlson. (Karlson, 1956)

Conclusions:

This experiment has demonstrated that *Pavlova* and ecdysone promote metamorphosis of 12 day-old bay scallop larvae. A common mechanism for the hormone ecdysone and a component of *Pavlova* also is supported by the finding that Azadiractin blocks the effects of both *Pavlova* and Ecdysone in larvae (Figure7). The effective concentration range of hormonal effects for both Ecdysone and AZA has also been determined and can be used in future research projects. The major practical implication of these findings is confirmation that addition of cultured *Pavlova* to the diet of larval bay scallops, and presumably other bivalve species, can be used to promote setting, thereby improving hatchery production of shellfish seed for aquaculture and restoration.

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