

feeds under normal conditions, whereas under *Aeromonas* exposure, levamisole shows greater weight gain. Furthermore, when compared to the *Aeromonas* infected fish with control diets, the fish fed with immunostimulant mixed feeds exhibited significantly increased weight gain.

Moreover, the fish fed with immunostimulant mixed feeds exhibited greater weight gain than the fish fed with control feed. The highest weight gain was observed in fish fed with vitamin E supplemented feed. After 30 days of treatment, the weight gain of fish fed with control feed as well as vitamin C, vitamin E, chitin, Chitosan, and levamisole supplemented feeds were found to be 18.7, 24.8, 47.5, 20.5, 28.1, and 30.8 g respectively. These results demonstrated that the vitamin C, vitamin E, and levamisole had the greater growth promoting properties.

3.1.3 Feed conversion ratio

Feed Conversion Ratio (FCR) is a metric that quantifies the amount of feed consumed by an animal relative to the weight gained by the animal within a specific time frame. Smaller FCR values suggest that a feed is turned into fish weight gain efficiently, but overfeeding or underfeeding increases the ratio (Bai et al., 2022).

The feed conversion ratio after 1 month of feeding with different immunostimulant-supplemented feeds such as vitamin C, vitamin E, chitin, chitosan, and levamisole under exposure to *A. hydrophila* was shown in Figure 3 and Table 1. From these results, it was observed that the fish fed with immunostimulant mixed feed exhibited lower FCR weight gain than the fish fed with control feed.

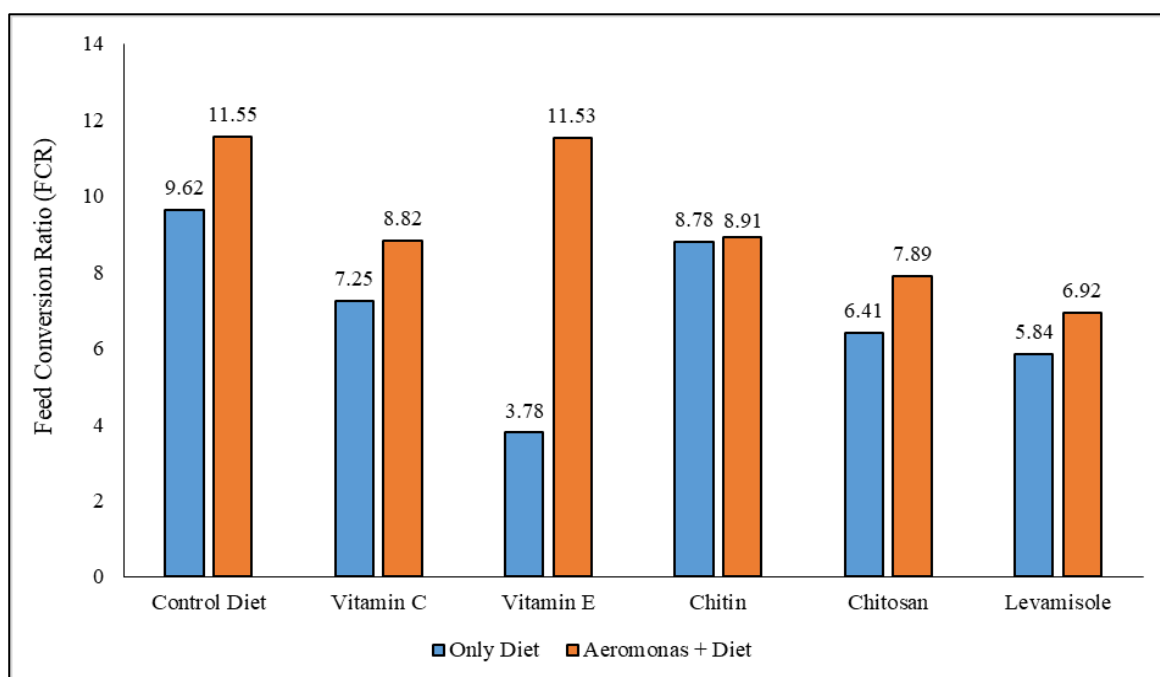


Figure 3 Feed Conversion Ratio (FCR) with different immunostimulant-supplemented feeds under normal and *Aeromonas hydrophila* infected conditions

Furthermore, among all the tested immunostimulants, fish fed with vitamin E mixed feed exhibited lower FCR, whereas highest FCR was observed in the fish grown under *Aeromonas* and control diets. The fish fed with control diet shows the FCR of 9.62, while the fish which are infected with *A. hydrophila* and fed with control diet exhibited the FCR of 11.55.

Furthermore, all the immunostimulant mixed feed significantly decreases the FCR when compared to the control groups. The FCR in the fish fed with selected immunostimulant feeds such as vitamin C, vitamin E, chitin, chitosan, and levamisole were found to be 7.25, 3.78, 8.78, 6.41, and 5.84 respectively. Whereas, FCR for the *A. hydrophila* infected fish fed with immunostimulant feeds such as vitamin C, vitamin E, chitin, chitosan, and levamisole were found to be 8.22, 11.53, 8.91, 7.89, and 6.92 respectively. According to these results, vitamin E