In 56-day trial, the effect of dietary supplementation of *Cinnamomum cassia on* juveniles *Labeo rohita* was examined. The research was conducted to examine and compare the growth performance of rohu fed diets containing varying concentrations of *C. cassia*. The experiment was designed according to completely randomized design with five treatments and three replicates. Fish with an initial body weight 3.95 ± 0.28 g were reared in 15 aquariums with a density of 15 fish per aquaria. Five experimental diets were prepared containing 0%, 0.5%, 1%, 1.5% and 2% *C. cassia*. Fish were fed thrice a day. The results of statistical analysis showed that the dietary inclusion of *C. cassia* significantly improved the growth performance and feed efficiency as compared to the control ($p < 0.05$). The group fed with 1.5% *C. cassia* showed the highest growth performance and improved feed conversion ratio. Biochemical analysis showed that the addition of *C. cassia* considerably decreased the glucose and triglycerides level. However, it increased the level of total plasma proteins ($p < 0.05$). *C. cassia* showed positive impact on hematological indices in rohu as it significantly enhanced the number of red blood cells, hemoglobin concentration and percentage of hematocrit as compared to the control group. In conclusion, the study evoked that optimum concentration (1.5%) of *C. cassia* increased the growth and feeding performance, improved the whole-body composition, positively impacted the biochemical and hematological health of rohu.

Keywords: *Cassia cinnamon*, growth, feed efficiency, biophysiological markers, rohu