PHYTOCEE®

# Immunomodulatory Efficacy of PHYTOCEE® in Shrimp

## OBJECTIVE

To assess the immunomodulatory effects of PHYTOCEE® in white leg shrimp *Litopenaeus vannamei.*

## MATERIALS AND METHODS

The experimental shrimps were reared in pond (9.6*40*1.2 m) under standard rearing conditions. The shrimps were divided in to 4 groups having 210 shrimps per group distributed in three replicates in each group. G1 served as normal control and supplemented with basal Stay C (500 g/ton), G2 served as positive control, and supplemented with basal + top-up Stay C (500+1000 g/ton). G3, and G4 groups were supplemented with PHYTOCEE® at 100% replacement of top-up Stay C and 50% of top-up Stay C respectively. The duration of treatment was 42 days. The immunological assays viz. total haemocyte count, phenoloxidase activity, intracellular respiratory burst and haemolymph bacteriostatic activity were evaluated.

## RESULTS

**Effect of PHYTOCEE® on immunomodulatory parameters**

| Groups | Total Haemocyte Count THC ($X10^7$) cells per mL | Phenoloxidase Activity | Intracellular Respiratory Burst | Haemolymph Bacteriostatic Activity ($X10^5$) |
|---|---|---|---|---|
| **G1-STC (500 g/ton)** | 2.980 ± 0.240 | 0.050 ± 0.014 | 0.084 ± 0.029 | 5.580 ± 0.542 |
| **G2-STC (1500 g/ton)** | 2.603 ± 0.118 | 0.059 ± 0.006 | 0.106 ± 0.016 | 5.550 ± 0.180 |
| **G3-STC + PHY (500+1000 g/ton)** | 2.990 ± 0.341 | 0.055 ± 0.012 | 0.084 ± 0.033 | 5.623 ± 0.304 |
| **G4-STC + PHY (500+500 g/ton)** | 2.260 ± 0.131 | 0.062 ± 0.004 | 0.119 ± 0.034 | 5.153 ± 0.189 |

Values are expressed as Mean ± SEM; n=3; p>0.05 based on one-way ANOVA; STC, Stay C; PHY, PHYTOCEE®; THC, Total haemocyte count

## CONCLUSIONS

100% replacement of top-up Stay C with PHYTOCEE® resulted in high THC and phenoloxidase activity. 50% of top-up Stay C with PHYTOCEE® resulted in high phenoloxidase activity and less CFU/ml in haemolymph bacteriostatic activity as compared to STC 500.

## OUTCOME

Hence, supplementation of PHYTOCEE® (500 g/ton) along with Stay C (500 g/ton) could be suggested for better immunomodulatory effects in shrimp under standard rearing conditions.