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Effects of Aloe Vera *Aloe barbadensis* Supplemented Feed on Growth Parameters of Rainbow Trout *Oncorhynchus mykiss* Juvenile

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Aloe vera (*Aloe barbadensis*) has been used globally in medicines, food, cosmetic and livestock industries due to the plethora of benefits of its bioactive constituents. This study was done to evaluate the impact of aloe vera powder on the growth performance parameters of Rainbow trout (*Oncorhynchus mykiss*) juveniles. A feeding trial was conducted for 45 days at the Fishery Research Station, Trishuli where 900 fish (mean weight 1.99±0.13g) were randomly assigned to three treatments, including a control group (CON), a group fed with 10 g kg^{-1} aloe vera (A10), and a group fed with 15 g kg^{-1} aloe vera (A15). The growth parameters, including Weight Gain (WG), Specific Growth Rate (SGR), Condition Factor (K), Feed Conversion Ratio (FCR), and Mortality were measured.

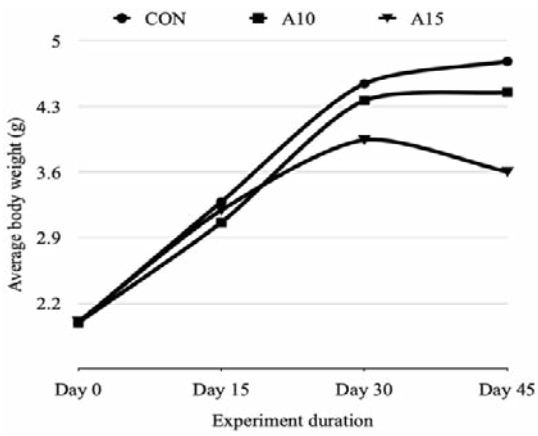

Figure 1. Growth pattern throughout the feeding trial.

The results showed that aloe vera supplementation at various concentrations significantly impaired the growth performance of Rainbow trout juveniles (Figure 1). Aloe vera significantly reduced WG and SGR ($p<0.05$), especially in the A15 group, likely due to reduced feed intake toward the end of the experiment (Figure 2). This is supported by a strong positive correlation between WG and feed intake ($r=0.87$, $p<0.01$), and SGR and feed intake ($r=0.77$, $p<0.05$). Aloe vera significantly increased the FCR, highest in the A15 group, followed by A10 and the control group ($p<0.05$). A similar trend was seen in mortality rates, with the A15 group experiencing the highest mortality, followed by A10 and the control group ($p < 0.05$). However, the condition factor (K) remained consistent across all treatments ($p>0.05$). Our finding showed that the dietary aloe vera at lower dose (10 g kg^{-1}) had milder adverse effects than the higher dose (15 g kg-1), indicating a dose-dependent response of juvenile trout towards dietary aloe vera. Given aloe vera's potential benefits for growth and immunity, further research on lower doses is essential to optimize dosage and evaluate the long-term impacts on rainbow trout productivity.

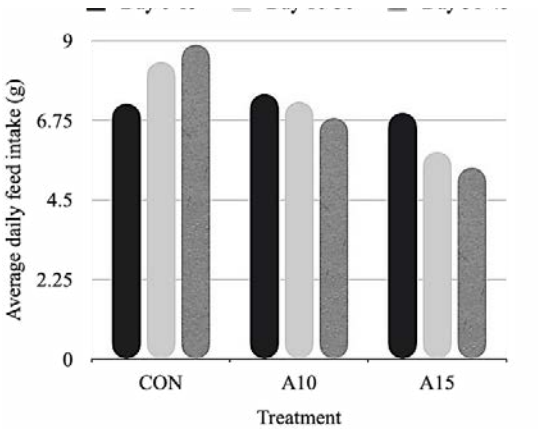

Figure 2. Fortnightly average daily feed intake among treatments.