B-57 Legume-fish integration: cultivation of soybean (*Glycine max* (L.) Merill) and bush bean (*Phaseolus vulgaris* L.) under saturated soil conditions with spotted gourami (*Trichogaster trichopterus*)

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Integrated agriculture-aquaculture farming is best exemplified by the workable pattern that has been practised for centuries in China, and in most South Asian and South East Asian countries. The benefits of an integrated culture of expensive ornamental fish species with economically important legume crops

in rotation with rice could be accrued by farmers who are at present experiencing low profit margins.

The experiment was conducted in 8 paddy plots of 50 m^2 each with a pond refuge of 1 m^2 at the centre. Two legume crops, bush bean (*Phaseolus vulgaris*) and soybean (*Glycine max*) were the planting material used with 4 replicates each. Treatments were the Conventional Irrigation (CI) practice and Saturated Soil Culture (SSC) where a permanent water column of 5 cm was allowed in the furrows on either side of ridges where the seeds were sown. Pond refuges were fertilized with poultry litter (1000 kg/ha) and supplementary fertilization (400 kg/ha/week) for 3 selected pond refuges. Each SSC plot was stocked with 60 fingerlings of the 3 spotted gourami (*Trichogaster trichopterus*).

The highest seed yield (2458.88 ± 536 kg/ha soybean) was reported in the SSC plots which was significantly higher than that of the CI plots (1393.3 ± 171 kg/ha) Beans were harvested as they were fresh pods and maximum yield (5238.88 kg/ha) was obtained from the SSC plots. Fish growth varied with the fertilizer level. A maximum growth (4.42 g per 30 days of culture period) was recorded in the plots which received 400 kg poultry litter/ha/week. However, the survival rate was less (40.33%). Predation was the major factor causing low survival rate.

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