EFFECT OF UTILIZING A COMBINATION OF COW AND CHICKEN MANURES AS ORGANIC FERTILIZER IN FISH POND

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ABSTRACT

An experiment was conducted utilizing twenty $40m^2$ ponds to investigate the effect of a combination of cow and chicken manures at the following ratios:

1000 kg/ha chicken manure: 3000 kg/ha cow manure;

1000 kg/ha chicken manure: 1000 kg/ha cow manure;

2000 kg/ha chicken manure only;

4000 kg/ha cow manure only; and

no manure (control),

on some selected physico-chemical properties of the pond, soil and water, primary productivity and production of red tilapia (*O. mossambicus* x *O. niloticus* hybrid) following an (RCBD) - randomized complete block design. Each pond was stocked with 40 fingerlings of red tilapia and cultured for a 90-day period, at the Brack-

ishwater Aquaculture Center of the University of the Philippines in the Visayas, College of Fisheries, Leganes, Iloilo, Philippines. Soil was analyzed for organic matter, phosphorus, nitrogen, pH, using Walkley and Black method, Olsen's method, Kjehdahl method and pH meter respectively, following standard procedures described in method of soil analysis part II, (Black, 1965). Water oxygen was determined with YSI model 51-B, oxygen meter, salinity with Goldberg's T/C refractometer pH with pH meter, phosphorus and NH_3 - Nitrogen by methods described by Strickland and Parson, 1972.

Reactive phosphorus of pond water improved due to the treatments, and supported fish food production leading to the high net fish yield obtained. Primary productivity, an index of living organisms in the pond, was high and suggests that the different treatments supported adequate fish food production.

The highest net fish yield (651.03 kg/ha) was recorded in treatment IV (4 tons/ha cow manure only), while the lowest net yield (299.31 kg/ha) was recorded in treatment V (control). Treatments I (1 ton chicken manure and 3 tons cow manure/ ha) and II (1 ton chicken manure and 1 ton cow manure/ha) produced similar net fish yield, 431.97 kg/ha and 431.95 kg/ha, respectively. Treatment III, 2 tons/ha chicken manure only) gave a better net fish yield of 474.82 kg/ha, than treatments I and II.

Cow manure can compare with chicken manure as organic ferlizer, in brackishwater fish ponds for tilapia. A combination of 1 ton chicken manure and 1 ton cow manure per hectare could be as productive as 2 tons/ha chicken manure only, in tilapia production.