# Effect of Hanging Coefficient on the Efficiency of Frame Net

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Comparative fishing experiments with frame nets of 0.4 and 0.5 hanging coefficients were conducted. Results indicate that net with hanging coefficient of 0.4 as more effective for better catch.

Efficiency of gill nets depends on appropriate mesh size for the effective exploitation of predominant size group of fishes, proper mesh size and twine size relationship, correct hanging coefficient and fishing height. Hanging coefficient determines the shape of mesh and the distribution of forces (Baranov, 1939) as quoted by Steinberg (1964). To catch fish only by entangling the hanging should be between 40 and 50% while a 40% ratio is appropriate both for gilling and entangling (Miyzaki, 1964). Loosely hung net catches more fishes of larger size groups because entangling depends less on mesh size than the other ways of capture (Hamley, 1980). To evaluate the effect of horizontal hanging coefficient on the efficiency of frame nets studies were undertaken in Hirakud reservoir and the results are incorporated in this communication.

## Materials and Methods

Frame nets of mesh size 75 mm bar with nylon twines of different specifications having horizontal hanging coefficient 0.4 and 0.5 were experimented during the period October, 1971 to July, 1974 in the different fishing grounds of Hirakud reservoir. The catch particulars like number and weight of fishes were recorded. The design details of the nets are same as given by Kuriyan (1973).

## Results and Discussion

Details of the gear operated along with the results of fishing operations are given in Table 1 and statistical analysis of the data based on analysis of variance in Table 2.

The analysis of variance showed significant difference in the mean catches of nets with two different hanging coefficient. It was also found that fishes of all size groups were caught in greater percentage in the nets having hanging coefficient 0.4 (Fig. 1). The results clearly indicate the superiority of nets of 0.4 hanging coefficient over 0.5 and confirm the view of Miyazaki (1964) and Hamley (1980).

Table 1. *Details of fishing gear and catch*

| Twine specification | Horizontal hanging coefficient | | | | |
|---|---|---|---|---|---|---|
| | 0.4 | 0.5 | 0.4 | 0.5 | 0.4 | 0.5 |
| | Area of net operated m2 | | Total catch kg | | Catch/unit area g | |
| 210/2/2 | 69225 | | 345.70 | 166.05 | 4.91 | 2.39 |
| 210/2/3 | ,, | | 357.80 | 234.50 | 5.16 | 4.68 |

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Table 2. *Analysis of variance of the loga-
rithm of the number of fishes caught*

| Source | Sum of squares | Degree of free-dom | Mean sum of squares |
|--------|----------------|--------------------|---------------------|
| Between han-ing coefficient | 0.23905 | 1 | 0.23905* |
| Between days | 17.17300 | 152 | 0.11298** |
| Error | 7.18511 | 152 | 0.04727 |
| Total | 24.59716 | 305 | |

*significant at 5% level; ** significant at 1% level

References

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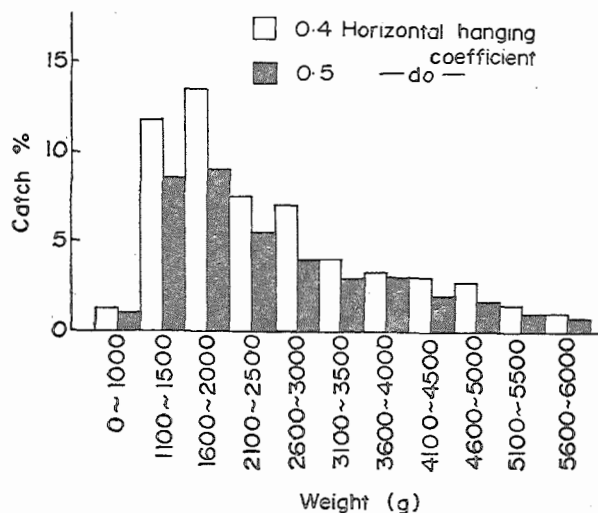Hamley, J.M. (1980) *Sampling with gill nets.* EIFAC/T 33



Fig. 1. Effect of hanging on the efficiency of frame net.

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