

## Integrated Fish Farming: Pig cum Fish Farming

(\*Jham Lal)

College of Fisheries, Lembucherra, Central Agricultural University, Imphal

\* [jhamlalj@gmail.com](mailto:jhamlalj@gmail.com)

Fishes are known to be one of the most energy-efficient protein sources for a growing population. Fish farming with pig rearing is also a cost-effective and extra source of income to the fish farmers. Pigs efficiently convert a variety of available wastes into valuable dung (manure), which when utilized in fish ponds not only act as a fertilizer but also as feed (due to the presence of a good % of undigested food in pig dung) for the fish. Pig farming is now getting popular and its integration with fish culture is the most profitable as compared to other integrated systems. Save in production costs more than 60 % of the total production cost.

**Keywords:** Fish, Pig, Integrated, Re-cycling waste

### Fish-cum-pig farming

Pig farming can be productively integrated with fish culture by putting animal housing units on the pond embankment or above the pond in just such a way that waste is properly discharged into the pond. Pig farming is now getting popular and its integration with fish culture is the most profitable as compared to other integrated systems. The production of fish can be increased by the use of animal manures particularly pig manure in fish ponds. Pig manure comprises approximately 70% of the digestible diet for fishes besides particular digestive enzymes. It also contributes a nutrient source for planktons which are eventually used by the fishes as natural food.

### Construction of pig house

Construction of pig house near the pond dykes. For direct drainage of a pig shed washings (containing dung, urine, and leftover feed) into the ponds. Every pig requires approximately 3-4 square meters of space.





Fig. Pig cum fish farming; (a) pig house, (b) pig, (c) feed, and (d) feeding of the pig.

### Selection procedure of pigs

Pigs to be raised along with fish are assigned with the subsequent measures:

1. Healthy and disease resistant
2. Good growth rate and early maturity.
3. Prolific breeding capacity.
4. Survive adverse environment.
5. Good meat quality and high consumer preference

### Pig varieties for pig cum fish farming

Four types of pigs White Yorkshire, Berkshire, Hampshire, and Landrace are used in that case in India. Hampshire and Land Race are the most popular cultured breeds of pig for fish cum pig farming (Othman, 2006).

### Requirement of pigs

Pig numbers are required according to the type of culture system such as extensive, semi-intensive, and intensive ways of pig-cum-fish farming. 40-45 pigs are sufficient for fertilizing a 1a -ha fish pond (Othman, 2006).

### Feeding of pig

Pigs are reared in pig-cum-fish farming system in an intensive way. They are fed in the house itself with a balanced pig ration at the rate of 1.4- 1.5 kg/ pig/ day. Pigs are fed wheat bran, rice bran, broken maize, rice polish, ground-nut oil cake, fish meal, mineral mixture, salt, and other ingredients in pig mash.

### Fish species for integrated fish farming

It is suggested that both native and foreign fish species be cultivated in an integrated approach. Surface feeders include indigenous species such as Catla (*Catla catla*), which are zooplankton consumers, and exotic species such as silver carp (*Hypophthalmichthys molitrix*), which are phytoplankton feeders. Rohu (*Labeo rohita*), a native species, is herbivorous and a column feeder. Mrigal (*Cirrhinus mrigala*) and Calbasu (*Labeo calbasu*) both are detritivorous indigenous species, while common carp (*Cyprinus carpio*) are alien detritivorous /omnivorous bottom feeders. Herbivorous alien species such as the Grass Carp (*Ctenopharyngodon idella*) appear on the surface, columns, and peripheral region of the feeding habitat.

### Production from pig cum fish farming

Save in production costs more than 60 % of the total production cost. This system contributes approximately 3000-4000 kg/ha/yr fish, 4500 kg/yr pig meat as well as 800 piglets every year, (Sankhayan, 1998).

### Conclusion

The pig dung acts as excellent pond fertilizer raises the biological productivity of the pond and consequently increases fish production. No additional supplementary feed is required for the fish culture, which commonly accounts for 60% of the total input cost. The pond dikes provided space for the erection of animal residence units. It has special importance in particular regions as it can enhance the socio-economic dignity of weaker rural populations.

### References

1. Bekibele, D. O., & Onunkwo, D. N. (2007). Economic benefit and ecological efficiency of integrated fish farming in Nigeria. *Scientific Research and Essays*, 2(8), 302-308.
2. Bhatt, B.P., K.M. Bujarbaruah, and K. Vinod. 2006. Integrated fish farming in the eastern Himalayas, technical bulletin no. 47. Meghalaya, India: ICAR Research Complex for NEH Region, India.
3. Kujur, N., Prasad, C. M., Singh, A. K., & Singh, S. K. (2005). Economic analysis of integrated pig-cum-fish farming in Jharkhand. *Indian Journal of Animal Research*, 39(1), 73-75.
4. Othman, K., 2006. Integrated farming system and multifunctionality of agriculture in Malaysia. *ActaHortic.*, 655: 291-296
5. Sankhayan, P.L., 1998. Introduction to the Economics of Agricultural Production. Prentice Hall of India Private Ltd., New Delhi.

