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SUSTAINABLE AQUACULTURE FOR A SECURE FUTURE

Title: Integrated cage culture in ponds: Concepts, practice and perspectives

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Abstract: The integrated cage culture in ponds refers to the system in which high valued species are stocked in cages suspended in ponds while filter-feeding species are stocked in open water outside the cages. While the caged fish are fed with high protein diets, the open-pond fish are solely dependent on the natural foods generated from cage wastes.

The following advantages make the integrated cage culture in ponds attractive and promising:

- (1) Wastes derived from high protein diets of caged fish are reused as a valuable nutrient source to generate natural foods for open pond fish.
 - (2) Nutrients in wastes derived from cages are recovered thus reducing nutrients contained in effluents, which are usually released directly or indirectly to the surrounding environment, causing accelerated eutrophication in those waters.
 - (3) It is used in polyculture ponds to confine costly high protein diets to caged high valued species to achieve higher economic returns.
 - (4) It is used in sub-tropical or temperate regions, where tropical fish species cannot overwinter, to make full use of growing seasons and make management such as fish harvest easy and convenient.
 - (5) This system makes it possible to fatten large fingerlings with high protein diets in cages and nurse fry with natural foods derived from cages wastes in open water in a single pond, which could allow small-scale farmers with one pond to maximize fish production and profitability.
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The integrated cage culture in ponds has been practiced in caged catfish-open pond tilapia and caged large tilapia-open pond small tilapia. Encouraging results have been achieved from the above trials.

This abstract was excerpted from the original paper, which was published in I.C. Liao and C.K. Lin (Editors), *Proceedings of the First International Symposium on Cage Aquaculture in Asia*. Asian Fisheries Society, Manila, Philippines, pp. 217–224.

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