

Results of a Hybrid Wuchang Bream (*Megalobrama hoffmanni*) Pond Trial with an Extruded, Soy-Based Feed

Results of ASA/China 1999 Feeding Trial 35-99-72

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ABSTRACT

Hybrid wuchang bream (*Megalobrama hoffmanni*) were grown to market size in ponds using the ASA 80:20 production model and an extruded, soy-based feed. Hybrid wuchang bream grew from 64 g to 508 g in 184 days at a stocking density of 800 fish per mu. Net production in three, approximately 5-mu ponds averaged 293 kg/mu of wuchang bream and 71 kg/mu of silver carp. FCR with the ASA soy-based feed was 1.97:1. Net economic return was RMB 634/mu, with a 16.1% return to investment.

INTRODUCTION

The American Soybean Association (ASA), in cooperation with the Chi Ni Aquaculture Extension Station fish farm and the Guangdong Provincial Fisheries Extension Center, conducted a feeding trial in 1999 to evaluate hybrid wuchang bream as a potential feed-based aquaculture species. The trial was conducted using the ASA 80:20 pond production model and an extruded, soy-based feed. Results of the evaluation trial are reported below.

MATERIALS AND METHODS

Fish for the trial were 60-g to 68-g hybrid wuchang bream (*Megalobrama hoffmanni*) fingerlings. The trial was conducted in three ponds of size 4.3-mu, 4.6-mu and 5.2-mu at the Chi Ni Aquaculture Extension Station fish farm outside of Guangzhou, Guangdong Province. Fish were stocked in the ponds on 9 May 1999. Hybrid wuchang bream fingerlings were stocked at a density of 800 fish per mu, together with 100 silver carp fingerlings per mu. Pond water depth averaged approximately 1.5 m during the production season. Ponds were equipped with water exchange and stand-by aeration.

Hybrid wuchang bream were fed an extruded (floating) feed formulated to contain 32% protein and 6% fat (Table 1). The feed was formulated by ASA as an all-plant protein ration, with soybean meal as the primary protein source. The feed was produced by the Jin Feng aquafeed mill. Feeding rate and frequency varied with fish size and water temperature following ASA guidelines.

Fish in the three ponds were sampled once per month on approximately the same date each month. At the conclusion of the trial, the ponds were drained and the hybrid wuchang bream and silver carp in each pond counted and weighed to determine average fish weight, gross and net production, feed conversion ratio (FCR) and survival.

RESULTS

The hybrid wuchang bream were fed a total of 184 days between 10 May and 9 November 1999. Hybrid wuchang bream grew from an average of 64 g to 508 g during this period (Table 2). Silver carp grew to an average of 1,002 g. Net production averaged 293 kg/mu of hybrid wuchang bream and 71 kg/mu of silver carp. Average FCR for the 184-day feeding period was 1.97:1. Average fish survival was 85% for the hybrid wuchang bream and 93% for the silver carp.

Net economic return was RMB 634/mu for the 14.1 mu of trial ponds, yielding a return to investment of 16.1%. Average fish selling price was RMB 12/kg.

SUMMARY AND CONCLUSIONS

Hybrid wuchang bream exhibited acceptable growth and economic efficiency in this growout evaluation. Feed conversion efficiency was only fair at 1.97:1. This evaluation of the hybrid wuchang bream as a potential species for feed-based production was concluded to be moderately successful. However, the Chi Ni farm manager felt further evaluation of the hybrid wuchang bream was not warranted unless better quality stock could be obtained.

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Chinese Currency and Production Unit Conversions:

RMB 8.26 = US\$1.00
15 mu = 1.0 hectare (ha)
kg/mu x 15 = kg/ha
1.0 kg = 2.2 lb
6 mu = 1.0 acre (ac)
kg/mu x 13.2 = lb/ac

TABLE 1. Aquafeed formulation for the ASA soy-based, 32% protein and 6% fat growout ration fed in the 1999 hybrid wuchang bream growout evaluation trial at the Chi Ni fish farm in Guangzhou, Guangdong Province, China.

Ingredient	Percentage of ration
Soybean meal 47.5	52.8
Wheat, SWW	23.6
Wheat midds	10.0
Corn gluten meal 60%	6.0
Fish oil	3.53
Soy lecithin	1.00
Ca phosphate mono	2.70
Vit PMX Roche 2118	0.10
Min PMX F-1	0.25
Ethoxyquin	0.02

TABLE 2. Results of the 1999 ASA aquaculture trial at the Chi Ni Extension Station fish farm in Guangzhou, Guangdong Province that evaluated hybrid wuchang bream growth performance using the ASA 80:20 pond production model and a soy-based aquafeed.

Fish stocking size (g)	Stocking rate (fish/mu)		No. days fed	WuC harvest weight (g)	Net production (kg/mu)		Survival (%)		FCR	Net return (RMB)	ROI (%)
	WuC ¹	SiC ²			WuC	SiC	WuC	SiC			
64	800	100	184	508	293	71	85	93	1.97	634	16.1

¹WuC = hybrid wuchang bream

²SiC = silver carp