

*Director's
Digest*



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CATFISH THRIVE ON FAT

Supplementation of channel catfish diets with fat markedly improves growth rate and feed efficiency according to Professor James W. Andrews and Jimmy W. Page of the Skidaway Institute of Oceanography and the University of Georgia Agricultural Experiment Station. With grant support from the Fats and Proteins Research Foundation these investigators studied the effects of animal and vegetable fats on the growth of catfish fingerlings in tanks held at 23°C. (73°F.) and 28°C. (82°F.).

Some striking differences were observed in the response from fats of animal and vegetable origin. When a basal diet (3% lipid content) was supplemented with 9% tallow the average weight gains at 23°C. over a feeding term of four weeks were increased by 70%. Menhaden oil supplementation of the basal diet under the same conditions gave substantially the same response and a mixture of 4.5% tallow and 4.5% menhaden oil added to the basal diet was nearly as effective as either tallow or menhaden oil supplementation alone. The addition of 3% each of tallow, menhaden oil and corn oil to the basal diet, however, only increased weight gains of the growing fish by 34%. Feed efficiencies, or the ratio of feed weight to weight gained, generally paralleled the growth rate.

Comparable experiments at 28°C., at which the fish grew about 24% faster on the basal diet alone, showed less dramatic differences in both growth rate and feed efficiencies after fat fortification. Weight gains on diets supplemented with 9% tallow, 9% menhaden oil or 9% of a 1:1 mixture of the two fats were 25-28% greater than those on the basal diet alone. As in the lower temperature experiments, supplementation with 3% each of tallow, menhaden oil and corn oil was less effective and only elicited a 17% increase in growth

rate. The feed efficiencies at the higher temperature were in each case noticeably better than at 23°C.

These results confirm earlier observations by the authors who suggest that catfish cannot effectively utilize plant lipids containing a high level of linoleic acid.

Commercial catfish culture is a rapidly growing industry in the United States and especially in Japan, principally because of the ever increasing demand for food proteins. The most recent statistics of the U. S. Department of Agriculture placed the annual food sales of catfish in seven southern states at approximately 64,000,000 lbs. in 1972, twice that of 1970.

The high degree of efficiency with which fish can convert feed to body weight indicates that fish culture in the so-called "underwater feed'lots" can become a significant market for tallow and other animal byproducts in the years to come.