



SUPERIOR AQUACULTURE LLC

Phone 715 340-0932
E-mail info@superiorraceways.com

7324 Kings Dr.
Ellenton, FL 34222

Superior Floating Raceway A Grow-out Production Example

The following example is a reasonable schedule for the grow-out of tilapia in climates capable of 12 month production. Much of the below is applicable to numerous other species.

Pond size:	1 acre (0.4 hectares)
Number of Raceways:	1 Model 48,000 Superior Aquaculture Raceway
Fish-holding water:	42,000 gal.
Fish compartments:	2 (adjustable, with 1 wall separating)
Growth period:	6 months
Harvests/year:	4
Harvest size:	Average 1 Lb.
Harvest Lbs/crop	14,000 Lbs - (35,000 Lbs)
Harvest Lbs/year	56,000 Lbs - (140,000 Lbs)
Harvest density:	0.5 Lbs/gal - (1.25 Lbs/gal)
Mortality rate:	10%
Stocking #/crop:	17,000 - (37,000)
Fingerling cost/crop:	All-male @ \$0.10 each, \$1,700 - \$3,700
Feed conversion ratio:	0.7-1.3
Electric power:	1-1.5 hp, continuous
Raceway exchange rate:	12-14 minutes

Because of the 6 month growth period, a total of 4 different crops/year, each about 3 months apart, is suggested. Annual harvest totals of 56,000 Lbs – 140,000 Lbs are possible. Because every water body and operator is different, it is highly recommended that lower end harvest density goals be targeted for initial crops. To achieve very high levels of production, additional standard add-ons, such as some in-tank aeration, may be required.

Surprisingly, much of the above production example could be applied to numerous other species, which have proven to do well in high density conditions. This would include pangasius, Asian seabass, some catfish, carps, and even rainbow trout, which has been successfully grown for years in Superior Raceways from 25g to a little less than 1 kg (say 2 Lbs.) in about 11 months.

In general, the prime factor limiting production of in-pond raceways is the size of the pond, rather than the crowding within the raceway. The key for success is to maintain good water quality, especially with regards to breaking down ammonia.

Larger size bodies of water can utilize a greater number of raceways. When used in water such as seepage ponds that do not discharge from the property, the system acts as a self-contained recirculating aquaculture system (RAS) within a pond. If desired, rotating screen filters or additional algae collection systems such as Diffused Air Flocculation (DAF) can be easily added at any time.

Solids collection, and in some cases even production within the raceway of valuable lipids and nutrients from zooplankton and algae, offer major opportunities for on-farm produced feed supplements and improved FCR's. This includes potential oil separation and use of dewatered and pressed algae. This IS "in-pond natural aquaponics". The crops are algae, zooplankton, algal oil, and other nutrients. Naturally, the solids collected from the raceways' settling zones have their own well-established value.

Additionally, there can be a huge additional (NOT mentioned above) "profit center" in the mutually symbiotic culture of additional plants and animals (e.g. vegetables and mud crabs) grown in the discharge waters of the raceways. Use of the in-pond raceways does NOT prevent use of the rest of the pond for many other activities.

Jay Warecki, Ph.D.