

Commercial Aquaponics Unit

An extent of 0.5 acre (2000 sq.m) land would be ideal for establishing a Small-scale Aquaponics Unit to be run on commercial lines. It would essentially comprise of one rectangular fish tank, 10 grow-beds for plants, besides Moving Bed Biofilm Reactor (MBBR) and Filtration Units, Pumps, Aerators, etc.

A) Technical Details (Indicative)

Particulars	Details
Fish Culture Tank	
Tank Size & Volume	12 x 5 x 2 m (120 m ³)
Effective Water Volume	100 m ³
Vegetable Growing Beds	
Individual bed size & volume	6 x 2 x 1 ft (12 ft ³) (340 L)
Depth of the bed	0.3 m
Volume of LECA/bed (2 nos.)	150 L/ bed
Quantity of gravel/bed (4 nos.)	150 kg/bed
Quantity of sand/bed (2 nos.)	150 kg/bed
Volume of water/bed (2 nos.)	500 L/bed
Water Filters, Pumps, Aerators, etc.	
Moving Bed Biofilm Reactor & Filter Set	Two Units
Pumps required (2 nos.)	15/18000 LPH
Water flow rate	30/36000 LPH
Aerator (3 nos.)	120 LPM
Auto Timer (1 no.)	20 min.
Fish Species	Tilapia/ Pangassius/ Koi Carps, etc.
Source of Fish	Registered Fish Hatchery/ Seed Farm
Stocking size	Fingerlings (minimum 5 g)
Stocking density	50-60/m ³ (5000-6000 nos.)
Fish Culture period	6 months
Composition of fish feed	28% protein
Type of fish feed	Pelleted feed

Expected weight gain per fish in 6 months	Avg. 500 g
Expected Survival	90% (4500 – 5400 nos.)
Expected Yield/yr	5400 kg/yr
Plant Varieties	Tomato, Mint, Chilly, Lettuce, Basil, Capsicum
Planting Density	15 – 20 saplings/ bed
Total no. of Plant	150-200 plants
Plant Cultivation period	12 months
Harvest type	Partial Harvest

B) Design and Layout (Representative)

