

EBB & Flow System

Agrifirst Ebb & Flow Hydroponic System — automated flood-and-drain for commercial nurseries. Zero water waste, uniform growth, precision nutrient delivery for professional growers.



5x more

water savings with 70% efficiency

3x higher

uniformity in crop growth

2x reduced

labor and input costs

ABOUT

Ebb & Flow Hydroponic System — Automated Flood-and-Drain Growing for Commercial Nurseries

Agrifirst Ebb & Flow (Flood and Drain) Hydroponic System delivers automated, precision watering for commercial plant nurseries and propagation facilities. This system periodically floods growing benches with nutrient solution before draining back — ensuring uniform root-zone moisture, optimal nutrient delivery, and zero water wastage.

DESCRIPTION

Agrifirst Ebb & Flow Hydroponic System is a professional-grade flood-and-drain growing system designed for commercial nurseries, propagation units, and intensive crop production. The system works by periodically flooding growing benches or trays with nutrient-rich water, then draining it back to the reservoir — delivering precise, uniform nutrition to every plant while conserving up to 90% water compared to conventional irrigation.

How It Works

A programmable timer activates a submersible pump that floods the growing bench with nutrient solution to a predetermined level. After a set flooding period (typically 10–15 minutes), the pump shuts off and the solution drains back via gravity into the reservoir tank. This cycle repeats 2–6 times daily based on crop requirements, ensuring consistent root-zone moisture and oxygen levels.

Key Benefits

- **Uniform Plant Growth** — Every plant receives identical nutrition and water, eliminating dry spots and overwatering
- **90% Water Savings** — Recirculating system reuses nutrient solution, drastically reducing water consumption
- **Automated Operation** — Timer-controlled cycles run unattended, reducing labor requirements by 60–70%
- **Scalable Design** — Modular bench system scales from small nurseries to multi-acre commercial operations
- **Reduced Disease Risk** — No soil-borne pathogens, no overwatering, no root rot when properly managed

Technical Specifications

System Type	Ebb & Flow (Flood and Drain) Recirculating
Bench Size	Custom — standard 1.2m x 6m growing benches
Reservoir	HDPE/FRP tank — 500L to 5000L based on system size
Pump	Submersible magnetic drive pump
Timer	Digital programmable cycle timer



AGRIFIRST - FARMERS FIRST

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Growing Media	Rockwool, cocopeat, perlite, or clay pebbles
Suitable Crops	Seedling nursery, lettuce, herbs, ornamental plants, strawberry
Water Savings	Up to 90% vs conventional irrigation

Ideal For

Commercial nurseries, tissue culture hardening units, lettuce farms, herb production, ornamental plant growers, and research institutions. Pairs perfectly with Agrifirst's Fan & Pad Polyhouse for complete climate-controlled growing.

GALLERY

