

HydroEco Group

The Green Irrigation

A novel, water-conserving technology, for growing crops in detached substrates

Summary

A novel technology was developed to produce vegetable and ornamental crops in non-drained containers filled with specific substrates. Using this technology enables the saving of about 80% of water and mineral fertilizers normally required by such crops while increasing yields by more than 20%. In the new technology fertigated water is automatically supplied to the bottom of the container (100×50×30 cm L×W×H) with the aid of a mechanical floater. No electrical devices are used nor sensors or computers.

With appropriate substrates salts are driven by capillary upward and accumulate in an absorbent layer laid on the surface of the substrate. Containers should individually be leveled horizontally. Each container is directly connected with a 5 mm tube to the main 25 mm fertigated water-supplying tubing. Hydrostatic pressure of 2-3 bars is sufficient to feed at least 100 such containers. At the end of a season the absorbent layer is discarded, the old plants uprooted, a new absorbent layer is laid on the surface of the old substrate and a new crop planted. The original substrate may be reused for at least 6 seasons. The new technology enhances crop productivity, induces yield earliness, avoids drainage of water and chemicals to the soil, reduces relative humidity in the environment, reduces the development of humidity-dependant pests and use of pesticides and restrict the development of root pathogens.

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The advantages of this non-drain technology over the existing ones are enormous. It conserves water and fertilizers while enhancing high productivity of the crop per season and annum. The ecological and hygienic impacts of using this new technology are also significant as no drain occurs to the aquifer and recycling of water and pathogenic microorganisms is avoided.

Ongoing experiments show that this non-drain irrigation technology can be adapted for fruit trees e.g. citrus, grapes and landscaping.

Landscape

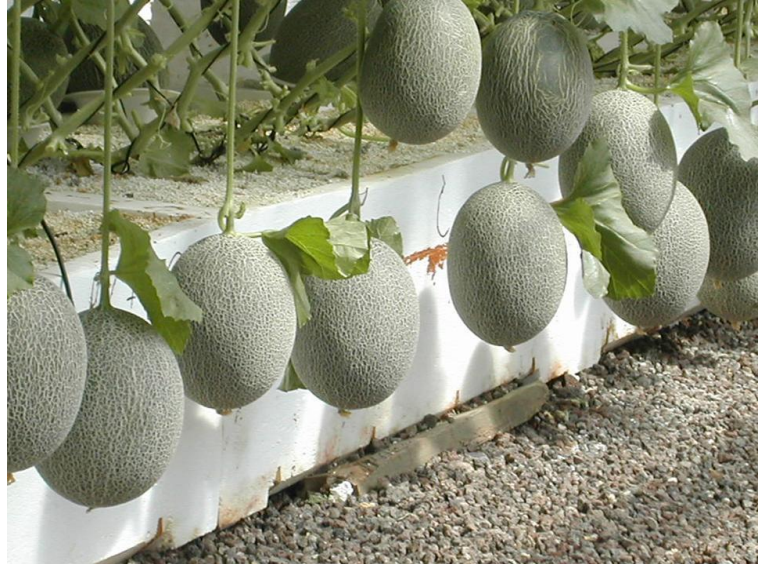


Grapes



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Melons



Cucumbers

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