

Equipment, Products, and Services

Boom Irrigation

Traveling booms are a relatively recent method to irrigate seedlings in forest and conservation nurseries, and are rapidly becoming the method of choice for several reasons:

1. Uniform water, fertilizer, and pesticide application—The nozzles are evenly spaced along the boom to apply water in a moving vertical plane (Figure 10A), which gives much better coverage than the circular horizontal pattern produced by stationary nozzles (Figure 10B). While this is obviously important for irrigation coverage, soluble fertilizers and pesticides can be applied much more evenly through a boom system than by hand or with stationary sprinklers.

2. Less waste and runoff of water and nutrients—Automated irrigation systems wastes the water that hits the aisles and edges of the propagation area, as well as that which runs down between the containers, and/or leaches through the medium. Although manufacturers advertise that water-use efficiency ranges from 50% to 90% with boom irrigation, recent comparisons found that the actual efficiencies are somewhat lower. Nevertheless, tests indicate that boom systems can be significantly more efficient than fixed overhead irrigation systems or hand watering.

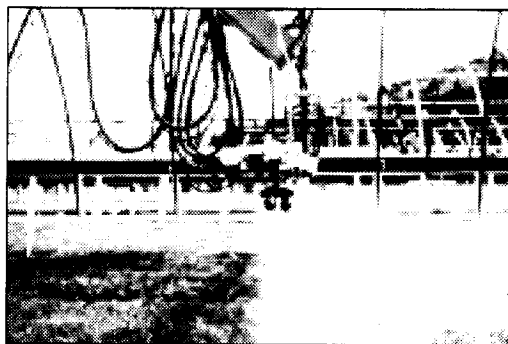
3. Less wind drift—Because water is sprayed down onto the crop instead of up into the air, the water distribution pattern from a boom is not as affected by wind direction as stationary irrigation systems.

4. Multiple functions—Irrigation booms can be equipped with multiple nozzles that can be switched to perform different functions: regular irrigation and fertigation, misting for humidity control, and pesticide application.

5. Lower peak irrigation demand—Because a propagation area can be kept irrigated with fewer total nozzles using boom irrigation, peak water demand is considerably lower under conditions of high evapotranspiration.

6. More economical—Compared to hand irrigation, the savings of water, labor, fertilizer, and pesticides can be enough to allow growers to pay off a boom system in as little as one year.

A wide range of irrigation boom systems with many different options are available. The booms can be suspended from greenhouse trusses or designed to travel along bottom rails. Computer-controlled models with variable-speed electric motors allow growers to program a preset series of operations, including: different irrigation rates, skipping sections, as well as automatic start and stop functions. Booms can be designed to cover areas ranging up to 21 m (70 ft) wide and 122 m (400 ft) long, and their height is easily adjusted for different crops. Boom systems also are available for open growing compounds, and are particularly valuable when wind drift is a problem. Some ground-mounted models have the ability to fold and pivot so that the boom trolley can be moved between growing areas—a very economical option. Prices depend on the type of system and features, but can typically cost anywhere from \$10.76 to \$32.38 per m².



A.



B.

Figure 10. Boom irrigation systems apply water in a continuous linear pattern (A) and are much more efficient than rotary sprinklers which produce a circular distribution pattern (B).

(\$1.00 to 2.00 per ft²). Contact the following manufacturers for specifics:

Andpro Ltd. PO Box 399 Waterford, ON CANADA N0E 1 Y0 Tel: 519-443-4411 Fax: 519-443-8861	Growing Systems, Inc. 2950 N. Weil Milwaukee, WI 53212 USA Tel: 414-263-3131 Fax: 414-263-2454
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Canaan Industries, Inc. PO Box 8097 Dothan, AL 36304 USA Tel: 205-793-9112 Fax: 205-677-0846	ITS % McConkey & Co. PO Box 1690 Summer, WA 98390 USA Tel: 206-863-8111 Fax: 206-863-5833
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East Coast Designs, Inc. PO Box K Alburtis, PA 18011 USA Tel: 215-965-1127 Fax: 215-965-8910	Transplant Systems PO Box 983 Kinston, NC 28501 USA Tel: 919-523-0970 Fax: 919-523-4966
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