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Environmental Stewardship in the Nursery®

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INTRODUCTION

In these “green” times, it seems as though the nursery sector is one of few industries that hasn’t been recognized for its contributions towards helping the environment. Nursery growers produce the plants that sequester carbon, provide oxygen, clean the air and water, restore habitats, and so on. But it doesn’t stop there. At many nurseries in Ontario, growers are working hard to implement more sustainable production practices. Many of these stewardship activities are targeted towards protecting surface and sub-surface water, reducing the use of fossil fuels, and recycling or reducing waste.

STEWARDSHIP ACTIVITIES IN ONTARIO NURSERIES

Water. The Great Lakes basin is one of the richest farming areas in Eastern Canada. Although the area boasts ~22% of the world’s fresh water resources, access for irrigation may be limited in order to conserve this precious resource for the future. Hot, dry growing seasons and low-flow surface water situations have stimulated water conservation strategies throughout the nursery sector. Several Ontario nurseries have expanded their water storage capacity in order to shift water taking to high-flow periods and away from low-flow periods. Sheridan Nurseries Ltd. has a large, multi-million-litre storage pond capable of supplying enough water to irrigate their entire operation for 10 days. Most container production operations have been constructed and retrofitted so they are sloped to capture runoff and direct it into their water storage areas. Irrigation runoff is diverted along the surface or into underground drains, through larger drains and ditches to ponds where it can be stored for re-use. Vegetated waterways, buffer zones, and bioswales are becoming a lot more common. The vegetation helps slow down water flow to prevent erosion and improve water quality by reducing sediment and also nutrients in the runoff.

To reduce the total water applied, some Ontario operations use cyclic or pulse irrigation to irrigate container crops. They irrigate for a short cycle and repeat 1–2 h later. Pieper Nurseries Inc. found that they can achieve a water savings of about 33% through this method of irrigation. In addition, cyclic irrigation results in a more thorough wetting of the root ball which stands up to wind and heat. To maximize efficiency in layout, container crops are grouped according to their water needs and irrigation cycles are customized according to plant needs. This helps reduce total water applied and root problems associated with overwatering. Manual watering (hoses and booms) is a very effective method of irrigation for small areas. J.C. Bakker & Sons Ltd. uses mobile water wagons for spot watering and estimates water savings to be 50%–80% compared to automated zone irrigation.

Low-volume irrigation systems such as spray stakes or drip stakes can be effective solutions for reducing water use. Unfortunately, significant material, installation, and maintenance costs restrict their use to larger, high-value crops.