

Water Quality Important For Plant Health

COLUMBUS, Ohio — Nursery and greenhouse growers developing a plant management plan should start by finding out what's in their water.

Hannah Mathers, an Ohio State University nursery and landscape specialist, said that water quality is a big factor limiting plant health and aesthetics, affecting sales and impacting the industry.

"The first question most growers have is what kind of fertilizer they should use. And I tell them that if they don't know what's in their water then they shouldn't be making decisions on their fertilizer program," said Mathers. "That's how important water quality is. It impacts fertilization, pest management and

everything else about a plant management program—but most people are negligent about their water."

Growers also tend to over-use water, said Mathers, adding that as available water decreases, water quality tends to diminish.

"There's only so much fresh water in the world, and as we deplete our supply, water quality becomes more of an issue," said Mathers. "The nursery industry is considered to be a water waster. We have to change that perception. Perception is important especially during times of drought like we've recently experienced."

Mathers discussed the relationship between water quantity and water quality, how

nursery Short Course and Central Environmental Nursery Trade Show (CENTS). The event, sponsored by Ohio State's Department of Horticulture and Crop Science, the Ohio State Extension Nursery, Landscape and Turf Team and the Ohio Nursery and Landscape Association, was conducted Jan. 20-22 at the Greater Columbus Convention Center in Columbus, Ohio.

The top three water quality problems nursery and greenhouse growers face are salt, pH, and alkaline levels.

Water with a high pH level tends to make the soil more basic, causing nutrient deficiencies that can lead to more disease susceptibility and an overall aesthetically displeasing plant.

"Iron and manganese deficiencies tend to be the most common. Plants with these deficiencies have leaf veins that stay green but the interveinal region will turn chlorotic," said Mathers. "It's a chronic condition. And plants that like

acidic conditions, like rhododendrons, will have more serious problems."

Water also contains salts, some of which may be toxic to plants. "Any ion in the water is considered a salt and some, like boron and chlorine, are bad for plants," said Mathers. "If the water contains salts that are higher than what is required in the plant material, plants are unable to take up sufficient water for growth and other processes."

The alkaline level is probably the biggest water quality issue growers face.

"Alkalinity and pH are not the same," said Mathers. "The characteristic of water that will increase a potting medium's pH during production is not a water's pH, but a water's alkalinity."

Alkalinity is known as the "buffering capacity" of water. That is, it has the ability to resist change in pH. The greater the alkalinity of the water, the tougher it is to acidify. A plant that is continuously irrigated with high alkaline water will become more basic and will eventually suffer from iron, manganese, and other nutrient deficiencies.

"High alkalinity in water may be a problem in Ohio because of the limestone base the state has," said Mathers. "Alkalines are made of up carbonates and bicarbonates that complex to form deposits of lime. The lime does not leach away, and as more alkaline water is added, the higher the pH of the plant will become."

Mathers said water quality is a bigger problem in nursery and greenhouse settings, rather than in the landscape,

because most plants are potted using soilless mediums, which lack buffer capacity.

Other water quality issues include high iron in water, which accumulates on plants over time, causing a brown casting that impacts the aesthetics of the plant; and hard water, which contains high amounts of calcium. Calcium deposits on the plant as white spots, also impacting the aesthetics of the product.

Mathers encourages growers to follow a five step Water Quality Action Plan to provide the best water quality for their plants:

- Test irrigation water at least once a year. Find out where your water is coming from and whom you are sharing it with. Surface water sources, for example, may contain more pathogens and more pollutants.

- Compare test results over several years to determine if water quality is changing.

- Consider whether acid treatment is needed to improve water quality and which acid is best for the situation.

- Make necessary adjustments to water and/or fertilizer practices.

- Always use pH and electrical conductivity (EC) meters to make well-informed decisions. Don't guess.

"We are trying to sell ourselves as the green industry," said Mathers. "I think we need to stop and ask ourselves just how green we really are."

Mist Sprayers

We offer a complete line of low volume mist blowers. Excellent for spraying vegetables, orchards, nurseries, tall trees, livestock etc.



For free brochure contact:

Swihart Sales Co.

Rt 3, Box 73 • Quinter, KS 67752

913-754-3513 or 1-800-864-4595

www.swihart-sales.com

MASTER MIX INC.

Professional Mix Potting Soil



Custom Blends Available

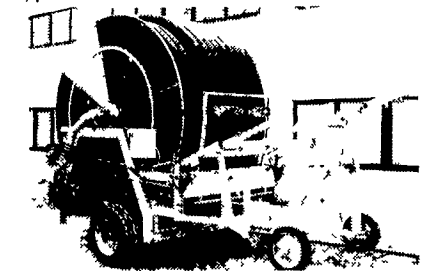
Quakertown, PA 18951

610-346-8723

"TICO/FERBO HOSE REELS"

Now, a new generation of automatic hard hose reels that feature variable travel speed selection with automatic constant compensation to provide uniform irrigation over entire length of pass, and operate at low input pressure to easily, efficiently, economically irrigate or spread liquid manure

TICO, a leader in irrigation systems for over 30 years, also offers these other types:



- WHEEL ROW
- GIANT SPRINKLER
- HAND MOVE • TRICKLE
- LIQUID MANURE AND WASTE WATER DISPOSAL

Also virtually all makes of couplers, fittings and gaskets, plus pumps, pipe, diesel, gas, and electric motors.



TICO MANUFACTURING, INC.

3143 Main Street, Suite 4, PO Box 565
West Middlesex, PA 16159
Toll Free: 866-241-8426
In Area: 724-528-8013
Fax: 724-528-8016

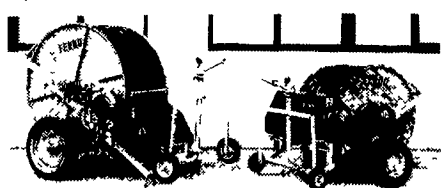
We Water the Earth When Mother Nature Needs a Helping Hand

Need Irrigation or Waste Water Disposal?

CHOOSE AMERICA'S PREMIER TRAVELER FROM TICO/FERBO

- 52 Different Models
- 5 Drive Systems • 15 Hose Lengths

From 30-630 gallons per minute output and with hose lengths from 395 ft up to 1650 ft Standard features include Automatic Speed Compensation, galvanized cart and stabilizer legs, turntable, pto wind-up and optional hydraulic legs and cart lifting



Economic Irrigation: With low input pressure requirements and constant speed irrigation, FERBO Travelers remain the leaders in low cost automatic irrigation. There isn't another traveler available that is simpler to operate or less expensive to maintain.

Waste Water Disposal: Our engine driven travelers are the simplest and most accurate on the market. Our computer controlled speed regulation ensures 99% accuracy to meet Federal/State design criteria while our simple yet efficient engine/gearbox drive ensures low maintenance

Plus: We manufacture and market a complete line of Slurry pumps, pump fittings, irrigation pumps, wheel row, giant sprinklers, hand move, trickle center pivots.

ROVATTI SLURRY PTO DRIVE PUMPS

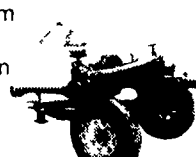
Rovatti TL slurry pumps are high-pressure slurry pumps with a unique "bolt on" chopper system

The standard pump features a high efficiency open-vane impeller with an interchangeable wear ring and fixed cutting blade to handle all but the very toughest of straw, hay or other difficult residuals. For these conditions, the chopper unit can be simply bolted to the pump where it is driven by the existing pump shaft, enabling it to handle virtually any waste products requiring chopping

A number of additional features make these the most versatile and reliable units on the market:

- Special permanently lubricated mechanical seal for longer life
- Over-sized bearings
- Lubricated chopper shaft bearings
- Chopper shaft shear-pin to reduce risk of damage to the shaft and impeller
- A range of four tractor pto pumps and four bare-shaft pumps with flows from 105-1000 gpm
- Replaceable wear ring
- 540 rpm or 1000 rpm speeds
- Finest grade cast iron for high efficiency
- Unique water-cooled gearbox for extended gear life

The pump is mounted on a heavy-duty wheeled cart with pto shaft, 6" quick-action suction fittings and 4" discharge fittings as standard.



Strawberry Plants

Over 20 Leading Varieties - Fall Dug State Inspected - Grown on Fumigated Sand

Asparagus Crowns

6 Leading Varieties - New Male Hybrids Superior Root Systems

All Available in Our Free Illustrated Price List

Krohne
Plant Farms, Inc.

Krohne Plant Farms, Inc.
65295 CR 342 LF
Hartford, MI 49057
269-424-5423
Fax 269-424-3126

info@krohnefarms.com

JERSEY ASPARAGUS FARMS, INC.

JERSEY MALE HYBRID ASPARAGUS

Seed & Crown Varieties

featuring
JERSEY GIANT, JERSEY KNIGHT & JERSEY SUPREME

STRAWBERRY PLANTS

Dormant & Plasticulture for the spring for the fall

BLUEBERRY PLANTS

- 3 yr old highbush -

RASPBERRY PLANTS

Summer & Everbearing Reds Summer Purple & Thornless Blackberry

CALL OR WRITE FOR A FREE CATALOG

Dept K 105 Porchtown Rd Pittsboro, NJ 08318
Ph 856-358-2548 Fx 856-358-6127

jaf@jafinc.com

www.jerseyasparagus.com

