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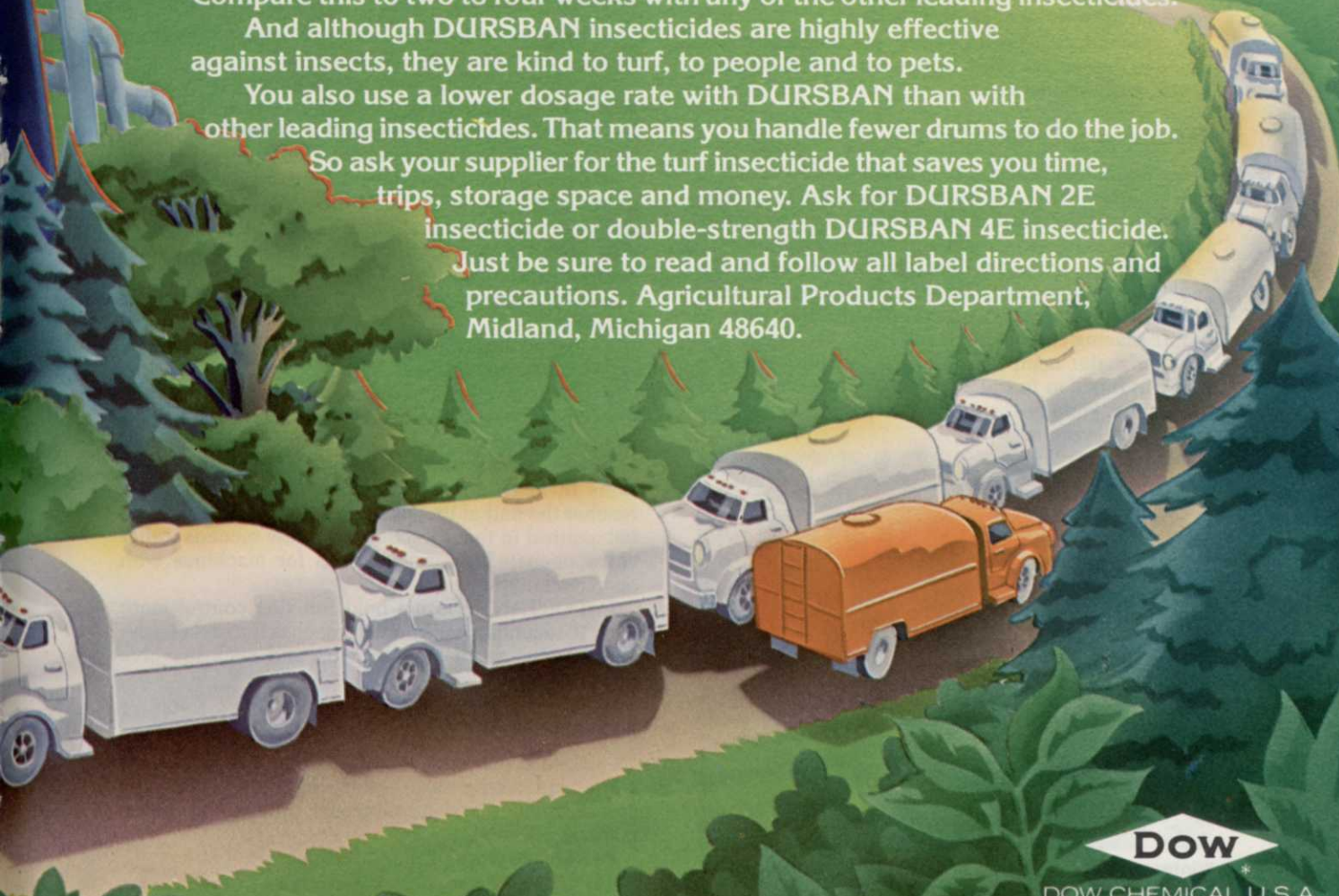
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DOW

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EQUIPMENT from page 38

highly explosive. And if the battery electrolyte level is low, larger quantities of hydrogen gas can become trapped in the space above the electrolyte in each cell. The slightest spark can cause an explosion. You could be injured by the explosion and also sprayed with the sulfuric acid electrolyte.

Here are five steps to use when connecting a booster battery:

1. Remove cell caps from both batteries to allow hydrogen gas to vent. Important: Ensure that both batteries are of the same voltage.

2. Connect one end of the first jumper cable to positive (+) terminal of the booster battery and the other end to the positive (+) terminal of the weak battery. When connecting positive (+) to positive (+), be sure not to touch the other end of the cable to any part of the machine, or battery damage may result.

3. Connect one end of the second jumper cable to negative (-) terminal of booster battery.

4. Connect the other end of the second cable to the starter ground or to the machine frame well below level of the battery. (If this is not possible, make this last connection as far from the battery as possible.) Then if a spark is produced at this connection, it will occur below any hydrogen gas escaping from the battery.

NOTE: For added safety, lay a piece of heavy non-conductive material over top of battery.

5. Disconnect batteries in just the opposite order. Remove the second cable from where it was last connected as described in Step 4.

Engine coolant heater

A coolant heater may be installed to aid starting in cold weather. When the heater is connected to an electrical outlet, the coolant is heated and keeps the engine warm for easier starts in extremely cold weather.

Remember, an engine block heater heats only the coolant, not engine oil. After starting the engine, allow sufficient time for oil to warm to operating temperature before placing engine under full load.

Other major components of the machine must be ready to function in the cold temperatures as well as the engine. Here are some suggestions for winterizing these other systems.



Winter work can be stunted and halted if equipment has not been checked and properly maintained.

Transmission

- Inspect transmission for external leaks and repair as necessary.

- Drain oil and refill with specified new oil. Use winter grade oil if required for specific applications. Also, change transmission oil filters.

- Examine the oil and filter for signs of contamination or metal particles that would indicate damage somewhere in the machine. Contact your dealer for assistance in determining the extent of damage and repair that will be required.

- Check the condition of hoses, steel lines, and connections.

- Make sure the transmission, reverser, and axle assembly breather are open. If there is an indication of excessive oil carryover out the breather (oily dirt around the breather), clean the breather.

On machines equipped with drive-line brakes:

1. Check for oil leakage on drive-line mounted brake.

2. Adjust brake actuating linkage.

3. Lubricate linkage and lever to prevent binding and rusting.

4. Replace brake friction element if excessively worn.

Hydraulic system

- Examine system for external leakage—repair or replace components as necessary.

CAUTION: Use a piece of cardboard or wooden guard when inspecting for high-pressure hydraulic leaks. Fluid is under pressure that is great enough to penetrate skin and cause severe injury.

- Drain hydraulic oil. Check for excessive contamination and metal particles. If present, determine the source of the contamination and correct the problem.

- Install new hydraulic oil (winter grade if recommended) and new filter.

- Check pressure cap (if so equipped) for proper operation.

- Inspect hoses and tubes for deterioration, kinks, and/or damaged fittings.

- Check position and tightness of clamps.

- Clean breather assembly if dirty.

- After starting engine, warm up hydraulic system to obtain normal function speeds by operating functions through complete cycles. When a function reaches the end of its cycle, continue to hold the function control in that direction for a few seconds (relief valve opens). This procedure is for machines with open center system only.

IMPORTANT: Do not hold function control more than 10 seconds after function reaches the end of a cycle or valve spool may heat up and stick in valve bore.

Attachments

- Grease pin joints at end of shift when joints are warm and take grease easier. If pins will not take grease, remove and clean grease fittings and grease passage.

- Replace worn pins and bushings.

Continues on page 44

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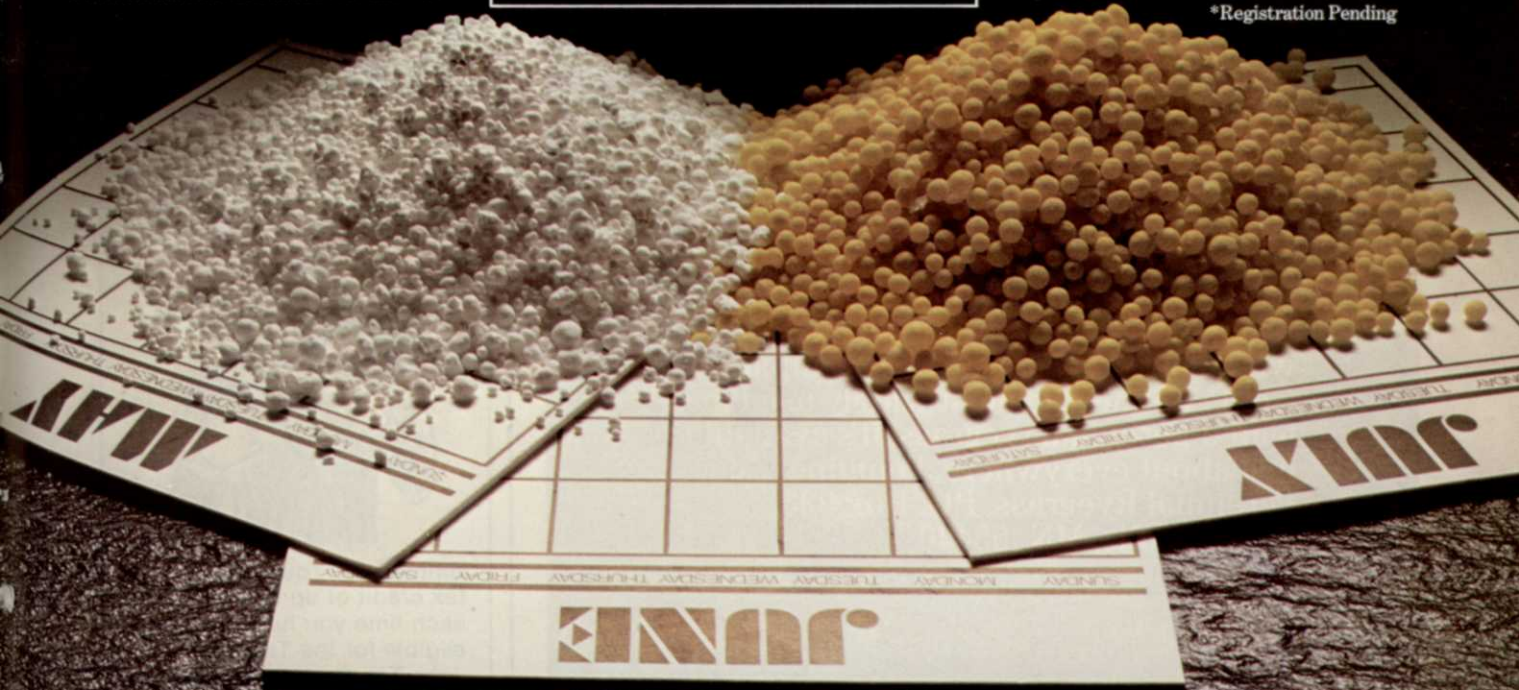


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PROFESSIONAL PRODUCTS

EQUIPMENT from page 42

— Tighten loose hardware on attachment mounting structure.

Antifreeze

In cold weather, cooling systems must be protected by adding antifreeze—usually an ethylene-glycol type. When extremely cold weather is expected you might think the more ethylene-glycol antifreeze you add, the lower the freezing point of the coolant. Not so!

The lowest freezing point obtainable is when the water-antifreeze solution contains about 67 percent antifreeze (protects to -94° F, -70° C).

General inspection

Some miscellaneous items should be inspected if equipment is to be operated in winter weather.

— Check tires and rims for damage. A tire with a rim that was nicked or bent during the summer may retain air during warm weather but leak in subzero temperatures. Replace or repair damaged tires or rims as necessary.

— Replace broken windows and seals around doors and console (cab equipped machines). Snow that enters control areas could cause icing as temperatures fluctuate. Cold air results in operator discomfort.

— Make sure brake lights, turn signals, rotating beacon, and warning lights operate properly if machine is to be used for snow removal.

— Check operation of heater (if so equipped). Since heater is not used during summer, controls may corrode or bind up and heater will not function properly when needed.

EXPERTS from page 29

and hollowness can be detected. Even relative growth rates can be measured. Dr. Shortle emphasized that the most difficult aspect of using the Shigometer is interpreting the results. Only by understanding how the relative conductivity and not the absolute conductivity varies can the readings be properly interpreted.

The afternoon session of the second day turned to the mechanics of tree evaluation. James Kielbaso of the Department of Forestry at Michigan State University quickly outlined the procedures to be followed. The entire group then went outside and made practice evaluations of six trees in the Ohio State University Campus. A thorough discussion of the results occupied the morning hours of the next day.

On the evening of the second day, Jack Siebenthaler, horticultural consultant, discussed nursery appraisal. Through case histories, Mr. Siebenthaler gave the audience an idea of the type of problems involved and the methods he used to make a usable and accurate evaluation.

WTT

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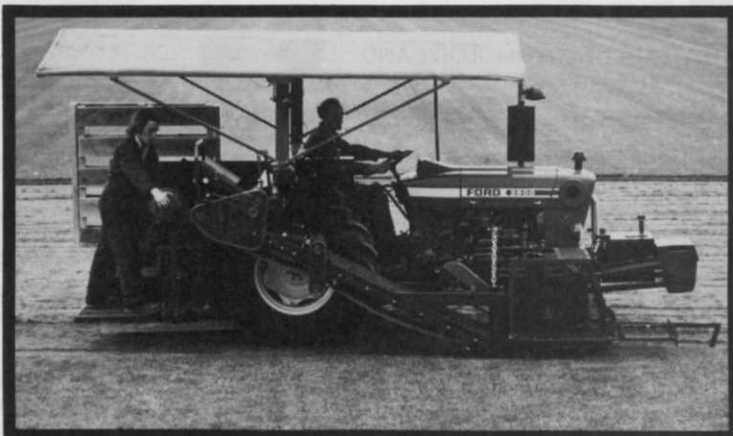
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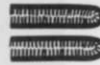
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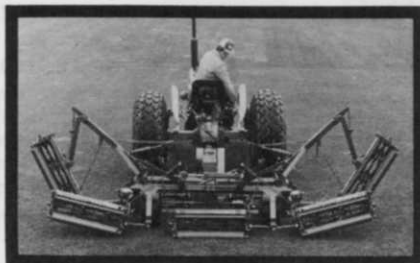


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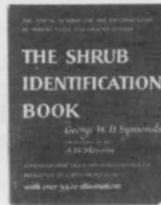
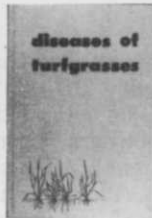
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SOIL

Workshop gives tips on seedling propagation

A five-day workshop on North American Forest Tree Nursery Soils provided close to 200 nurserymen information on how to grow better seedlings faster and at a lower cost through soil analysis and management.

Nurserymen from the U.S., Canada, and Europe heard a variety of topics from 21 speakers at the sessions, which were arranged by the State University of New York College of Environmental Science and Forestry (ESF) in Syracuse, NY. The topics were grouped into two categories: biological factors of mycorrhizae, diseases, insects, seedling quality, and composition; and nutritional and soil chemical factors of fumigation, nutrition, fertility, and soil reaction.

The workshop also included a small dedication and tree planting memorial to Albert Leaf, ESF professor who pioneered most of the recent work in nursery soil testing and analysis.

Earl Stone, professor emeritus at Cornell University, summarized the workshop's four main objectives in a final speech: to help sharpen and understand applied biology, chemistry, and soil science involved in growing tree seedlings; to develop a more exact idea about the multiple effects that individual treatments may have, or interact with each other, in effects on plant growth; to suggest how to calculate, monitor, and control soil, water, and nutrition availability to a greater degree than often done; and to systematically examine each step, operation, and material input of the nursery program with a view to what it contributes to production, efficiency, cost, and stock quality.

Proceedings of the workshop are being published. Those interested in obtaining copies should write: Dr. Donald Bickelhaupt, SUNY College of Environmental Science and Forestry, Syracuse, NY 13210.

PESTICIDES

EPA clears confusion around ban on lindane

The Environmental Protection Agency has cleared the wording of its proposal to ban the pesticide lindane to allow its continued use by commercial applicators.

Although the final outcome in the controversy surrounding lindane will

not be published until next October, the Special Pesticide Review Division's projected date, the division says certified applicators will not be barred from using it. Position Document 2/3, which was published July 3, 1980 in the Federal Register, had confused the issue of whether commercial or homeowner use was affected. The words, "commercial ornamentals," were used to describe applicators.

Zoecon Corp., a major supplier of the pesticide in the United States, evaluated EPA's initial investigation and conducted their own. The company arrived at different conclusions, which makes it seriously question the benefits against the risks. The EPA held an independent scientific advisory council, which can only advise, and recommended the use of lindane be retained.

Bob Felix, executive vice president of the National Arborist Association, met with members of the EPA to help clarify the wording of the proposal and said they were more than receptive to his suggestions. Arborists, who use lindane for borer control on oaks, ash, rhododendrons, birch, and lilacs, would not mind if it was taken out of the hands of homeowners. "If you get more homeowners out of pesticides," Felix says, "everybody will be safer."

The EPA officially closed comments toward lindane on September 15, but would still like to receive them if they contain scientific data or methods for reducing exposure. Write: Document Control Office (TS-793), Room E-447, Office of Pesticides & Toxic Substances, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460.

COMPANIES

Lakeshore Equipment hires product manager

Lakeshore Equipment and Supply Company recently hired Jack Bruns as its new product development manager for irrigation in Elyria, Ohio, and Dante Brunetti to head its nursery sales organization in Florida.

Bruns, former superintendent at the Youngstown, Ohio, Country Club, is a horticulture graduate of Iowa State University with specialization in turfgrass management and arboriculture.

Brunetti, an agricultural graduate of the University of Massachusetts, has 24 years' experience in production and marketing of nursery, fertilizer, and chemical materials.

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VEGETATION MANAGEMENT

By Roger Funk, Ph.D., Davey Tree Expert Co., Kent, Ohio

Q: What is the latest information on the control of *Cytospora* canker in blue spruce?

A: *Cytospora* canker is caused by the fungus *Cytospora Kunzei* and is most often associated with older and/or weakened trees. Improving tree vigor has been and still is the recommended treatment. This includes proper fertilization, watering, soil improvement and pruning. Pruning tools should be sterilized to minimize the potential for spreading the disease, and pruning should never be done during wet weather.

Q: Where can I get a list of crabapples resistant to scab and fire blight?

A: Write to Dr. L. P. Nichols, Pennsylvania State University, 211 Buckhout Laboratory, University Park, Pennsylvania 16802.

Q: What causes gummosis on cherry trees?

A: Gummosis is simply the oozing of sap (including gum and latex) from a wound or other opening in the bark. It often results from borer infestations.

Q: I have been reading about the adverse effect an alkaline pH has on pesticide solutions. Are there any products on the market that can be used to adjust the pH?

A: Sorba-Spray, produced by Leffingwell Chemical Company in Brea, California, and Spray-Aide, produced by Miller Chemical and Fertilizer Corporation in Hanover, Pennsylvania, will lower the pH of tank mixes.

Q: I know that the presence of certain weeds in a lawn can be used to diagnose soil problems. Can you tell me what these weeds are and the related soil condition?

A: Most weeds can grow under a wide variety of soil and environmental conditions but certain weeds may become dominant under adverse conditions because of their tolerance. For example, moss will grow in almost any soil in either shade or full sun. However, it is usually associated with excess moisture, shade and acid soils because it is tolerant of these conditions, and thus, more competitive. Such plants are known as indicator weeds because their presence indicates — but does not assure — certain growing conditions.

I have listed the most common indicator weeds for your area (Northeast) and the condition(s) under which they may dominate. You should test the soil for confirmation.

Send your questions or comments to: Vegetation Management c/o WEEDS TREES & TURF, 757 Third Avenue, New York, NY 10017. Leave at least two months for Roger Funk's response in this column.

Indicator Weed	SOIL CONDITIONS						
	Infertile	Moist	Dry	Acid	Compaction	Sandy	SHADE
annual bluegrass (<i>Poa annua</i>)		•			•		•
common chickweed (<i>Stellaria media</i>)		•					
cinquefoil (<i>Potentilla simplex</i>)	•						
ground ivy (<i>Glechoma hederacea</i>)							•
heal-all (<i>Prunella vulgaris</i>)		•					•
carpetweed (<i>Mollugo verticillata</i>)	•		•	•			
knotweed (<i>Polygonum aviculare</i>)					•		
moss (<i>Bryum, Ceratodon, Hypnum</i> or <i>Polytrichum</i> spp.)		•					•
orange hawkweed (<i>Hieracium aurantiacum</i>)	•			•			
oxeye daisy (<i>Chrysanthemum</i> <i>leucanthemum</i>)	•			•			
povertygrass (<i>Danthonia spicata</i>)	•						
rabbitfoot clover (<i>Trifolium arvense</i>)			•			•	
rough bluegrass (<i>Poa trivialis</i>)		•					•
sandbur (<i>Cenchrus pauciflorus</i>)	•		•			•	
sheep sorrel (<i>Rumex acetosella</i>)	•		•	•			
smartweed <i>Polygonum persicaria</i>)		•					
thyme-leaved sandwort (<i>Arenaria serpyllifolia</i>)			•			•	
trailing stonecrop (<i>Sedum sarmentosum</i>)		•					
violets (<i>Viola</i> spp.)		•					•
yarrow (<i>Achillea millefolium</i>)	•		•				