NASA's Quarantine Vans To House Plant Pathogens

Quarantine vans built for the astronauts have been "recycled" for use by the U.S. Department of Agriculture (USDA).

In 1971, returning Apollo astronauts were picked up from the space capsule by helicopter and were transferred immediately to \$140,-000, six-ton, 30-foot mobile isolation vans. En route to more spacious quarters at the Lunar Receiving Laboratory in Houston, Tex., the astronauts spent four days in the vans, transported by ship and flatbed trailer-trucks. Today two of these four vans are being readied for a new kind of tenant — foreign plant pathogens for research on biological control of agriculturally destructive weeds.

A gift from the National Aeronautics and Space Administration (NASA) to USDA's Agricultural Research Service (ARS), the moon mission vans have rolled again, this time to the Southern Weed Science Laboratory in Stoneville, Miss. A third van is in the Smithsonian Institution and the fourth remains in Houston.

In Stoneville scientists will test plant pathogens such as the rust fungi, Uromyces rumicis, on curly dock (Rumex crispus), and Puccinia chondrillina on skeletonweed (Chondrilla juncea). Curly dock is found nationwide and is a problem in the humid South. Skeletonweed is a problem in Washington, Idaho and in several counties in California. The weeds compete for space, nutrients and water causing increased expense for chemical controls.

Because curly dock and skeletonweed have both been introduced from foreign sources without their normal complement of natural enemies, and because native pathogens have not been able to control the weeds over large areas, foreign pathogens will be imported from those countries where the weeds are native. They will then be isolated in the NASA quarantine vans, and tested for their ability to attack and damage only the host weed and their inability to damage other plants. After the pathogens have been thoroughly evaluated under quarantine conditions they may be released to help control the weed species.

The project will include studies

on other weeds such as prickly sida, velvetleaf, spurred anoda, morning glory and nutsedge to determine if there are native pathogens with potential for biological control.

Plant Pathologist Howard D. Ohr is the ARS project leader in the study at the Stoneville laboratory.

Ciba-Geigy/Funk Merge

Ciba-Geigy Corporation announced that Funk Seeds International, Inc. has become its wholly owned subsidiary as the result of a merger of Funk and the agricultural division of Ciba-Geigy. Under the terms of the merger, stockholders of Funk prior to the merger are entitled to receive \$17 in cash for each share held.

Army Weed Controllers Transferred to USDA

Five senior scientists from the Army's Vegetation Control Division, their support staff and an installation are being transferred to the U.S. Department of Agriculture (USDA) to begin new research on weed control.

The scientific team is headed by Dr. Robert A. Darrow. Office, laboratory and greenhouse facilities, and a 140-acre research site near Frederick, Md., needed to accommodate the group are also being transferred to USDA without additional capital investment.

The unit has a data storage and retrieval system that has information on the herbicidal activity of about 31,000 compounds. With this system, USDA will be able to increase the scope of its weed research already being done by the Agricultural Research Service (ARS). The laboratory will operate as an installation of the Chesapeake-Potomac area of the ARS northeast region, as an addition to ARS's existing plant disease research laboratory at Frederick.

A major research objective for this small contingent of scientists will be to develop technology for either inhibiting weed-seed germination or to stimulate germination at times of the year unfavorable to weed survival.

The lack of preventive weed control technology hinders efforts to reduce the cost of controlling weeds and also reduces the effectiveness of weed management programs. Herbicides are now applied to more than 160 million acres. The need for such wide applications could be reduced if scientists assigned to this research mission succeed in finding ways to reduce the vast amount of weed seeds in the soil and to prevent their recycling without adverse environmental effects.



Leo Donahue (left), administrator and legislative liaison for the American Association of Nurserymen (AAN), reviews the AAN's testimony for increased research funds with Congressman William J. Scherle, Republican from the Fifth Congressional District of Iowa. Scherle is a member of the House Appropriations Subcommittee on Agricultural, Environmental and Consumer Protection, and a long-time friend and supporter of the nursery industry.

Hyacinth Control Society Convention Report

Hyacinth President Favors Certification

Certification will benefit pesticide applicators. It will bring an air of professionalism. It will set the applicator aside from untrained labor. That's the thinking of Alva P. Burkhalter, president of The Hyacinth Control Society, soon to become The Aquatic Plant Management Society, Inc.

Besides professionalism, Burkhalter believes certification will offer the applicator a better salary, better advancement potential and more job security.

Burkhalter opened the recent annual convention of the Society at Winter Park, Fla. by saying that certification will also stimulate interest in the area of biological control, leading to "integrated management of aquatic control and encouraging expansion into other fields."

Switching to the energy crisis, he warned delegates to "avoid an 'attitude shortage' or an 'internal energy crisis' . . . and get back to a hustling attitude in this Society."

The 1974 registration figure was 306 at this 14th annual convention. This was a near 30 percent increase over last year. Registered participants included delegates from several foreign countries and some 20 states. Research, sales, development, and industrial, governmental and educational progress highlighted the four-day sessions.

Appearing for the Environmental Protection Agency, John Ritch, director of the EPA Registration Division, stated "The registration division of EPA doesn't know all pesticide applicator problems, and thus doesn't have solutions, but," he said, "we're establishing contacts and learning."

According to Ritch, EPA's intent regarding federal registration is not to eliminate pesticides, but "that the use of pesticides be carefully managed to protect health and property with minimum adverse effects on the environment."

Robert D. Blackburn, formerly at the Aquatic Plant Management Laboratory of the USDA and now president of Florida Aquatic Weed Control, Inc., a private firm, traced the history of the battle against aquatic weeds in Florida and internal strifes which have delayed control. Blackburn said, "While we argued in courts about what to do, water hyacinths continued to grow . . .

"We didn't carry out what we originally set out to do — management of aquatic weed control. We have to have a management program. We've got to learn to work together," he said.



This year's annual banquet was a buffet-style luau held poolside at the hotel. Members were treated to a diving exhibition by a local high school swim team. Banquet speaker William E. Fulford, state representative of District 40, Florida, spoke on "Weeds and Politics."



Alva P. Burkhalter (right) turns the gavel over to L.V. Guerra, the Hyacinth Control Society's new president.

According to Blackburn, answers to the problems of aquatic weed control lie in integrating mechanical, biological and chemical controls and not in political circles. "Let's resolve some of our controversy by face-to-face contact instead of political maneuvering," he said.

More than 50 papers were presented in concurrent educational sessions. The research sessions featured such topics as fungi and water hyacinths, future utilization of water hyacinths for proteins and energy, hydrilla in Iowa and chemical retardation of hydrilla growth.

Applicators' sessions were devoted to operations and field techniques and treated subjects such as weed control with the bifluid invert system, effects of laser radiation on water hyacinth, boating and aquatic weed problems and various means of algae control.

Highlighting the sessions was a joint panel on what chairman John Gallagher of Amchem Products, Ambler, Pa., termed the Society's "Watergate" — the pros and cons of the herbivorous white amur.

Panel speakers included Burkhalter of the Florida Department of Natural Resources, Bill Woods of the Florida Game and Fresh Water Fish Commission, David Sutton of the University of Florida, and John Stanley of the Division of Fishery Research, Bureau of Sport Fisheries and Wildlife, Stuttgart, Ark.

The panel indicated that introduction of the white amur into Florida is still an unresolved issue, with many questions yet to be answered as the program moves from laboratory to Florida waters. Once the controversial fish is introduced into Florida, the situation may be irrevocable, so many view absolute safeguards and answers to plaguing problems as a necessity.

At the annual business meeting, the following slate of officers was approved by the Society for the coming year: president, L. V. Guerra, Texas Parks and Wildlife Department, San Antonio, Tex.; first vice president, Ray A. Spirnock, Central and Southern Florida Flood Control District, Lake Worth, Fla.; second vice president, Robert W. Geiger, The 3M Company, Pompano Beach, Fla.; past president, Alva P. Burkhalter, Tallahassee, Fla.; treasurer, Brandt G. Watson, Naples Mosquito Control District, Naples, Fla.; editor, David L. Sutton, Fort Lauderdale, Fla.; secretary, T. W. Miller, Lee County Hyacinth Control District, Fort Myers, Fla.; Nelson Virden of Jackson, Miss., and Kerry Stewart of Fort Lauderdale, Fla., as new members of the board of directors.

Next year the group will meet in San Antonio, Tex. Plans include a post-convention trip to Mexico City.



Society members listen attentively to the joint panel discussion on the pros and cons of the controversial white amur. John Gallagher of Amchem Products, Ambler, Pa., presided over the discussion.





One of the specially designed gang mowers draws attention from the members. This mower and others were demonstrated at the Larriland Sod Farm. Also featured were PTO-driven sweepers and a small spraying unit.



There's a strong new entry in the Kentucky bluegrass lawn field, selected for its attractive appearance, low growth profile and good overall turf performance, including an ability to grow in moderate shade. A selection from Rutgers University, Glade has excellent turf quality, and has demonstrated good resistance to important lawngrass diseases including stripe smut, leaf rust, and powdery mildew. Glade mixes especially well with other elite bluegrasses and fine fescues. Glade persists in areas of moderate shade where many other bluegrasses weaken because of too little sun. Nationally tested as P-29, it is one of the fastest germinating and establishing bluegrasses; quickly produces a heavy close-knit rhizome and root system, and a very attractive, leafy, persistant turf. Ask for new Glade for use in full sun or in mixtures with fine fescue for shade at your local wholesale seed distributor.

Another fine product of Jacklin Seed Company

SOD (from page 18)

tion would take that position indicated by the majority of voters. Following reports from secretary Gerry Brouwer, treasurer John Nunes and executive secretary Bob Garey, the meeting adjourned.

The sod business is an outdoor enterprise and field demonstrations and tours largely occupied members. After the annual meeting, the members visited a number of Maryland sod farms.

First stop was Fairwood Turf Farm. A box lunch was served and participants were treated to demonstrations of the newest sod harvesting and handling equipment. Beck, Ryan, Princeton, Nunes, Brouwer and Finneyfrock operated their units on Maryland's typically rocky and dry soil. A new idea in fork lifts, the Frate Lift, designed by Brouwer, attracted attention. The yellow unit featured a three-wheeled chasis, and instead of being towed to the job site, the unit links up to the rear of a truck and lifts itself into travel position, eliminating towing.

Most equipment featured at the demonstration was in the form of improvements and optional equipment for already field-proven units. Specially designed gang mowers, PTO-driven sweeper units and a surprise razing by a crop duster airplane were featured at the Larriland Sod Farm. At Dick White's Sod Farm equipment also included Pyles, Allis Chalmers and Champ fork lifts, a Barnes tiller, a Jacobsen seeder and a Roterria irrigation unit. A Harley Stone Picker was demonstrated at Stedding Turf Farm

Guest speaker at the banquet was Herbert Wallace, executive vice president of Hart, Schaffner and Marx. The newly elected officers are: president, Charles Davis, Wharton Turf Grass, Inc., Wharton, Tex.; vice president, Paul Florence, Marysville, Ohio; secretary, Charles Lain, Pine Island Turf Nursery, Inc., Sussex, N.J.; treasurer, Wallace Huggett, Huggett Sod, Marlette, Mich. New board of directors members include Norm LaGrande, Hendricks Sodding and Landscaping, Lincoln, Neb., and Thomas A. Thornton, Thornton's Turf Nursery, Elgin, Ill. Attendance at the meeting included 223 sod producers, 78 commercial representatives, 90 wives and children and 20 university members.

TREES (from page 10)

for putting trees on a golf course," says Boehm. If trees are set out in the right places "... they define the hole and make a good backdrop for the hole. We try to keep nice open fairways with a few traps around the greens for the scenic value of that nice white sand. If a golfer hits down the fairway, he's got a nice easy shot ... but if he hits out in the boonies he ought to be lost out there behind a tree. There are still some open areas, but I'm putting in trees to make those more challenging holes. Still, this is an easy course for the average golfer. Even with the trees he doesn't get penalized that much."

"I just want this place to look good and play good and be a good golf course, and the only way to do it is to define the holes. You've got a fairway on one side and a fairway on the other side and what's the use of playing one way when you might as well be playing with the other group coming the opposite direction? You don't want that; you want to be in your fairway and play your hole by yourself. You don't want to share it, except with your playing partners. Never with the party playing the next fairway."

It isn't just a matter of putting out any old tree for the sake of its being a tree. Variety and placement are important.

"I like color," says Boehm, "I like to put out the red maples and flowering trees; crabapples and purple plums. We get dark greens from our pines; red pine, white pine and scotch pine. We also use mountain ash, lindens, honey locust, sycamore and maples."

Boehm's trees are not little bitty ones. The smallest are 7-8 feet high and big enough to do some good for the course right now, although, he says, "... they gave us some little ones this year, so we found places for them."

You can't just stick in a bunch of trees and forget them.

Boehm says: "Some people don't believe in fertilizing trees." He says it as if he really means some people don't care about trees; perhaps consider them a necessary evil, existing mainly to make mowing and turf care more difficult, and in an age of soaring labor costs, more timeconsuming.

It isn't so.

"Maybe you can ignore an established tree. Some big old river cottonwood with a massive root system isn't going to have any trouble finding nourishment. But a young tree — anything less than 8-10 inches in diameter — needs food."

The old, established methods of fertilizing trees take time. You can go out with an auger and bore holes and pour in bulk fertilizer. It works, but you need the auger, a crew to run it and it's time-consuming. If you broadcast fertilizer around the tree — enough to do any good — you either make the grass grow so much faster than surrounding grass that it's unsightly, or you put down too much and burn the grass. There was no easy way.

Now there is, says Boehm. "We use Jobe's Tree Spikes. As far as I know they're the only people making fertilizer in this form."

The spikes are fertilizer compressed into a stick with one end slightly pointed and a plastic cap on the other. "You take a box of spikes, a hammer and pound one spike into the ground for each inch of tree diameter. That's all it takes. Last year, after we put in all those new trees, I sent a three man crew out to fertilize and they were done in a day and a half. Seven hundred trees. I couldn't believe they'd done them all so fast, so I checked. They had," said Boehm.

"You can see the difference it makes. There are some places on the edge of the course where similar trees were put in on the other side of the road. Ours are greener."

What about time consuming close-trimming around trees? Its been all but eliminated. "We use Casoron, a granular type product which completely kills all vegetation but doesn't hurt the tree. You put it around in the winter. when the tree is dormant, using a little spreader of any type. In the spring we put wood chips around the trees so the dead grass won't look unsightly. We also use this treatment around out-of-bounds markers and buildings. You can mow right around them with a rough mower. It eliminates about 90% of all hand mowing. you still have to do some, but you can't imagine how much it saves.

"Of course any time you put out that many new trees, you're going to have some problems. That man out there on a seven-gang mower has to learn where each of those trees is, and how to make his cut so he gets close enough, but misses the tree. Sometimes the man on the mower runs over a tree. When that happens, I send him back out with a can of tree paint, have him paint it up and stake it, and let him know he'd better not do it again. They learn fast. That's another reason for big trees — because they're easier to miss — or should be."

Boehm doesn't neglect turf care, of course. He has established regular programs of soil testing, so he can give each part of his course exactly what it needs, and aerification, to relieve the compaction caused by the muckey, clayey soil and the very heavy use of the course.

EDITORIAL (from page 6)

This simply means that segmented lobbying — such as being done now by each little group — will never be wholly satisfying in terms of favorable legislation and/or rulings by EPA, OSHA, USDA, etc.

For a time we had hopes that this could be accomplished via a "Green Industry Council" in which every organized group - associations, societies, foundations and whatever - might serve as a communications and lobbying medium whereby forces necessary to achieve needed action could be raised. Now. we are not so sure. There appears insufficient interest to develop the type of council body which could conceivably coordinate the efforts of the segmented Green Industry. Funding is a further problem. We as a magazine are open to suggestion.



25th Anniversary Planned

The Sprinkler Irrigation Association will celebrate its 25th anniversary during the annual convention to be held at the Contemporary Resort of Disney World in Lake Buena Vista, Fla., Oct. 27 to 30.

Convention activities are planned to portray the role that the Association has played in the growth of the sprinkler irrigation industry and to recognize those leaders in education, industry and government who have contributed to sprinkler irrigation progress and to the development of the Association.

Programs, registration information and room reservation forms for the convention can be obtained from the Sprinkler Irrigation Association, 13975 Connecticut Ave., Suite 310, Silver Spring, Md. 20906.

Biological Weed Control Proposed by Scientists

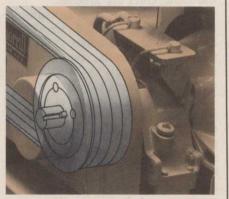
A new biological control for weeds, which would avoid the use of selective herbicides has been pro-



For more than 115 years Mitts & Merrill has been making specialized machinery for industry. A major part of our business is equipment to reduce scrap and waste. This experience is incorporated into design features on our brush chippers that result in higher efficiency and longer, trouble-free service for you. Only Mitts & Merrill brush chippers offer features like these:







Optional torque converter isolates engine and transmission from cutting shock to minimize maintenance. Makes operation virtually fully automatic; increases operator productive time. Available on all models.

• Positive safety-lock pin for greater operator safety • Swing-away, folding feed chute protects cutting chamber; allows instant access and increases maneuverability • Heavy duty construction includes coil spring, torsion-type suspension, and box tubular steel frame.



Dept. WT 94, 109 McCoskry St., Saginaw, Michigan 48601

posed by a Michigan State horticulturist and a Cornell University agronomist.

In the current issue of "Science," Alan R. Putnam and William B. Duke note the well-known phenomenon of allelopathy — that is, the ability of certain plants to inhibit the growth of other plants, such as weeds, by releasing chemicals toxic to other plants into the soil.

"If this allelopathy is an inherited trait, which is likely, attempts could be made to incorporate weed resistance into commercial crops in the same manner that insect and disease resistance were bred into plants," Putnam and Duke suggest.

Successful biological control of weeds has been limited to a few cases where insect predators have been introduced to reduce certain weeds. Plant scientists usually fight weeds by selecting strains for their ability to outgrow weeds, an advantage attributed to rapid growth.

American Garden Products Names New Vice President

American Garden Products, Inc., producer and distributor of horticulture products and related items, announced that Peter J. West has been appointed executive vice president and chief operating officer. West, formerly on American Garden's board of directors, succeeds C. A. Hellar.

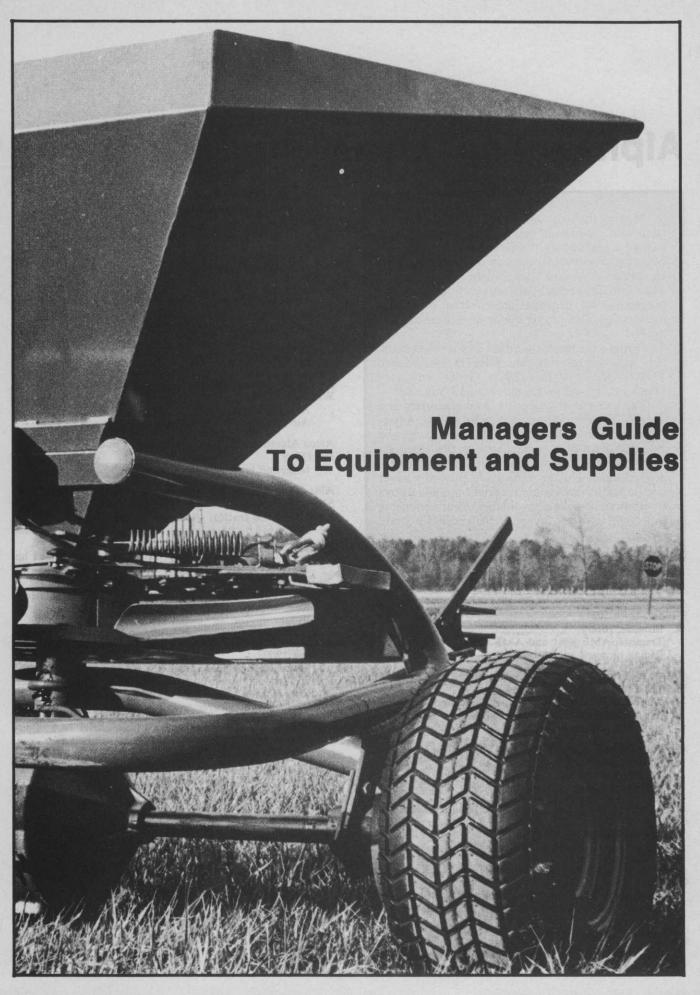
The operations of American Garden Products, Inc. include Gurney Seed and Nursery, Cole Nursery, Horton Nurseries, Western Seed, Cal-Turf and Perry's Plants, Inc.

New Agrico Division Names Sinclair President

Kenneth R. Sinclair has been elected president of Agrico International, a new division of Agrico Chemical Company, a subsidiary of the Williams Companies.

Agrico International is responsible for Agrico's overseas investments, marketing and a number of new overseas production facilities now in various stages of development.

Agrico International has overseas offices in Panama City, Paris, Milan, San Paulo and Tokyo.



Alphabetical Listing of Suppliers

Making the right decision in selection of equipment and supplies is one of the most important jobs of a manager in the Green Industry. Besides being an important item on an investment budget, equipment must also be maintained. This calls for wide initial selection, correct accounting procedures for depreciation, effective preventive maintenance and proper major maintenance when needed.

Perhaps the most important step is in selection. It is with this in mind that WEEDS TREES and TURF presents this 1975 Green Industry Manager's Guide to Equipment and Supplies.

The guide is in two parts. Manufacturers and their equipment and supplies are listed first. Advertisers are in **bold face type**. Product groupings and manufacturers of a particular item are listed second. Because manufacturers add and delete product lines, change names and generally never remain static, omissions of certain manufacturers or product lines are unavoidable. Your comments and suggestions are invited to help improve future editions.

A

AMF Western Tool Division, 3811 McDonald Ave., Des Moines, Iowa 50313

Mowers, rotary

Tractors, AMF 1281 and AMF 1293 Riding mowers, rotary

A.O.A. Research & Development, Inc. (P.O. Box 6081C) 608 Virginia Dr., Orlando, Fla. 32804

Underwater weed cutter, manually operated, spring steel, serrated, doubleaction blades cut weeds with forward and backward stroke

Ace Pump Corp., 1650 Channel Ave., Memphis, Tenn. 38113 Pumps, centrifugal Pumps, nylon roller Pumps, diaphragm

Acme Products, 1201 Kalamazoo Street, South Haven, Mich. 49090

Masks, Dust, Gas Respirators

ADS—Advanced Drainage Systems, 1880 MacKenzie Dr., Columbus, Ohio 43220

Corrugated Plastic Drainage Tubing, sizes of tubing and fittings from 4 inches to 18 inches in diameter

Adventure Line Mfg. Co., 3333 Main St., Parsons, Kansas 67357

Astro Hook, crane/ladder, truck mtd., hydraulic Highworker, platform lift, truck mtd., hydraulic Tailgate, 1,000 lb. cap. pickup mtd. tailgate, all of our equipment is designed for use on pickup trucks

Aeroquip Corporation, 300 S. East Ave., Jackson, Michigan 49203

Hose and fittings, hydraulic, fuel, air, oil, water; pressure from low to super high

Agresults, Inc., 5501 S.W. 74 St., Miami, Florida 33143 Hydrofyer Umbilla-Kal Injection System, Airifyer Adaptor for pressurized injection of pesticides, fertilizers or other chemicals into greens or tees

AgTronics Mfg. Co., 1560 State St., Barstow, Calif. 92311 Soil moisture meter

Air-Lec Industries, Inc., 3306 Commercial Ave., Madison, Wisconsin 53714

Air-Lec, aquatic weed cutter Air-Lec, aquatic weed rake

Alcoa Aluminum Co. of America, Alcoa Building, Pittsburgh, Pa. 15219

Irrigation pipe

Allis-Chalmers, 1205 S. 70 Street, Milwaukee, Wisconsin 53211

Model 620 tractor, 191/2 hp with tires rear 34.0"

Model 615 backhoe-loader, Allis-Chalmers 56 hp gasoline engine

Model 816 backhoe-loader, Perkins diesel engine 83 hp Model 918 backhoe-loader, Allis-Chalmers diesel 84 hp engine

Mower (sickle bar), length 56" tractor (620) mounted Rear mtd. Roto-Tiller, 48" size for 620 tractor Rotary mower, 48" swath for 620 tractor

Amchem Products, Inc. Brookside Avenue, Ambler, Pennsylvania 19002

Meter Miser, liquid spreader gives precision application of Weedone liquid herbicide products without the need for calibration

Directa-Spra, sprayer end unit

American Arborist Supplies, Concord Industrial Park, Concordville, Pa. 19331

Arborist supplies Chippers, Chain Saws, Hand saws, Climbers Rope, Pruning Equipment, Hardware (screw rod, cable, thimbles)

American Excelsior Corp., 850 Ave. H, East Arlington, Tex. 76010

Erosion Control Products

Soil Retention Products

American Hose & Reel Co., P.O. Box 639, Marland, Okla. 74644

Thermoplastic spray hose with working pressure of 250, 400 and 800 PSI; ¹/₄, ³/₈, ¹/₂, ³/₄-inch sizes

Fertilizer applicator tubing; ¹/₄, ³/₈, ¹/₂, ³/₄-inch sizes Hose reels; small, 300 ft., ¹/₂-inch hose, 1000 P.W.P.; large, 300 ft., ³/₄-inch; adjustable drag

American Lincoln Corp., 518 S. St. Clair, Toledo, Ohio Welders