HIGH SPEED

The ever-popular hydroseeding technique is a fast and economical method of seeding that can save you money.

by Jack Dirksing

Convenient uses for hydroseeding techniques contribute to growth in the green industry.

What started in 1953 as the answer to highway roadside seeding has evolved into a vital means of seeding for virtually any job that requires grass to be grown: landscape construction, private and commercial real estate development, golf course construction, highway roadside development, soil conservation, park construction, and many more.

When the 500-gallon HydroSeeder was introduced in 1958, the progression from seed broadcasting to hydroseeding became a natural step for many landscaping companies.

The addition of hydraulic mulch into the seeding process began in 1961 when International Paper developed Turf Fiber, a "cooked-wood" product. The methods for applying mulch together with seed and fertilizer continued to be refined throughout the '60s. By 1970, "one-step" seeding was an established practice in the revegetation industries.

Today, more landscape contracts are calling for hydroseeding. But, if need be, hydroseeding can be promoted by offering a weed-free lawn installation for less cost than sod. Small, previously impractical jobs can be made profitable by the speed and low labor demands of hydroseeding.

The process is less messy than straw, and hydraulic mulch will not blow away under normal conditions.

The equipment

Hydroseeding is relatively simple. But just as important as the decision to buy equipment is the selection of the right size machine. Consideration should be given to both current jobs and those in future plans. (For tank sizes and coverages, see accompanying chart.)

The hydroseeding process itself is simple.

Jack Dirksing is president of the Finn Corporation.

The Reinco Hydrograsser uses hydro-jet agitation with a grinder/blender feature.

Tank Working Capacity (Gal)	Acreage Per Load	
	With Seed, Fertilizer, Lime	With Wood Fiber Mulch
500	1-3/4	1/6
800	2-1/2	1/4
1000	3	1/3
1300	4	1/3 to 1/2
2500	8	2/3 to 1
3000	9	3/4 to 1-1/2

The materials put in the tank are mixed with water and kept in suspension by agitation. Seed, mulch, and fertilizer are introduced to the tank as it fills with water.

Seed protection

Hydraulic mulch of today is typically a ground wood or paper product. When applied through a HydroSeeder, it serves to protect the seed as it begins to germinate and establish itself.

A harmless green dye is added to the mulch as a marker between loads, allowing the operator to easily identify and judge the amount of material being applied. Additionally, the dye gives a green appearance until the grass begins to germinate.

Most applications call for 1,000-2,000 pounds of hydraulic mulch per acre, depending on specifications, soil conditions, and type of mulch.

Additional products to enhance the seeding operation and satisfy specific needs are available. These can be added to the "recipe" during tank loading. Mulch tackifiers, water retention agents, and fiber length enhancers are typical additives.

The slurry is then pumped to the discharge assembly and directed onto

Reinco's Power Mulcher.

the seedbed by the machine operator. Discharge of the slurry (the mix of all materials) is done either from a tower-mounted gun on the tank or, for a more controlled application, through a hose and a remote valve.

HydroSeeders come equipped with a variety of nozzles to allow the selection of several different spray patterns: wide fan, narrow fan, and long-distance.

A discharge tower is standard equipment on all but the smaller HydroSeeders, where it is not considered necessary.

An electric (or manual crank) hose reel can be mounted on any size Hydroseeder. This allows the convenience of 200 feet or more of hose for jobs not permitting the machine to be close to the work. Most owners prefer the electric reel, as the small added cost of the motor outweighs the time and labor involved in hand cranking.

Few problems

Problems associated with hydroseeding are minimal. However, certain practices must be observed.

Seedbed preparation — The time spent in preparing a good seedbed will yield higher germination and turf density. Highway roadsides, mining reclamation, and landfill seedings require considerably less preparation.

Seed selection and application — Seed selection depends on many variables: width of grass leaf, erosion control ability, drought resistance, disease and fungus resistance, and soil conditions.

In most instances, cereal crop seeds are blended with turfgrasses. The cereal crop or nurse crop seed gives rapid germination and plant growth, protecting the primary grass seed from erosion and the elements. Typically, nurse crop seed germinate in less than seven days while primary grass seed takes at least 14 days.

Rate of seed application is determined by needed turf density and percentage of seed germination. Local seed suppliers are often the best source of information on seed and application rates.

Soil amendments — The selection of fertilizer, lime, and other soil amendments is often overlooked. However, selection is vital to the turf's establishment. The soil's nutrient level and pH additives determine the grass plant's vigor and vitality.

An inexpensive soil test kit can be used to determine the amendments needed. After taking the test, a suitable fertilizer plus pH additives can be added to the HydroSeeder slurry. Again, local suppliers can be a good source for this information.

Moisture retention — After the hydroseeding is completed, regular watering is necessary for the development of healthy turf. This is especially important in arid areas or in summer months when rainfall is limited.

The hydroseeding mulch will absorb and keep water available for the germinating seed. The mulch's ability to hold water varies. Mulches also tend to insulate the seed and soil, protecting it from direct exposure to the elements.

Temporary irrigation on small to medium size projects is rapidly gaining acceptance in areas where little precipitation is expected.

Erosion — Seed and seedbed erosion are probably the most difficult problems to solve, and the most important consideration to make while hydroseeding. Landscape and seeding contractors are constantly faced with washout due to heavy rain. Hydraulic mulches control erosion to a greater or less degree, depending on their derivation and fiber length.

For additional insurance against erosion of the mulch and seedbed, tackifiers or tenacious synthetic fiber should be added to the slurry. Tack

The Finn Corporation's HydroSeeder.

ifiers bind individual fibers of the mulch together with a water-insoluble, semi-porous film or crust. Tenacious synthetic fibers (mulch fiber enhancers) add fiber length to the slurry and entangle with the fibrillated fiber of the mulch.

The list of erosion control products for use with HydroSeeders grows as new technology is developed. Using an additional product depends, in part, on cost, site condition, rainfall and guarantees of the contract or specifications.

A brief history

Back in 1949, the term "hydroseeding" didn't exist. The technique used to seed was a far cry from today's advanced technologies.

Seeding was seeding, no matter where it was being done...highway or agricultural areas.

On flat areas, scarification and seedbed preparation was followed by the use of agricultural grain drills which placed the seed. On steep slopes, the cyclone hand-operated seeding maching or hand broadcasting the seed were the only methods available.

After planting seeds, a light raking with hand rakes, followed by hand-mulching, finished the job.

Not until the development of the Highway Trust Fund and Federal Interstate programs was it clear that a more rapid, effective, mechanized piece of equipment was needed.

In 1953, Charles Finn of the Finn Equipment Co. developed the first commercially successful HydroSeeder. It mechanically mixed seed, fertilizer, and lime with water, producing a slurry mixture, which was then applied to the seedbed.

The first machine was a two-piece unit consisting of a 1,000-gallon tank set in a small wheelbase dump truck with a separate pumping unit towed behind. As years passed, demands for a more compact piece of equipment were met.

Through the years, hydroseeding has evolved into perhaps the most economic means of establishing vegetation. It's a proven time-saver, labor-saver and profit-enducer. **WT&T**