

How Cal-Turf Plants and Grows Bermuda Stolons

While the turgrass industry in California is very young in comparison to other parts of the country, rapid advancement has been made in stolon handling and planting methods in its few short years of existence.

Introduction of the improved Tifton-developed hybrid bermudagrass has contributed a great deal to the turf industry in the West. These new varieties are filling a very definite need for the buyer who wants a quality recreational turf, which often must serve the heavy demands of multiple recreation uses.

At present, three varieties of hybrid bermudas, Tifway, Tifgreen, and Sunturf, are grown at two locations. Several characteristics differentiate the hybrid bermudas from the common variety. Most noticeable is the finer texture of the hybrids. The fineness of leaf and stem enables them to form a tight, dense turf which resists wear. Weed infestation is minimized by the tightness of the turf. A longer growth period allows the hybrids to begin growing earlier in the spring and continue longer in the fall, thus holding their color longer than the common bermuda. Seedheads of the hybrids are sterile, making confinement to a given area much easier. The rate of

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establishment of these improved bermudas by planting stolons is considerably faster than by seeding, an important fact to consider when time is essential.

The combined factors of large areas, heavy use, and limited maintenance make up the usual problem that schools, parks, and recreational areas must solve. Turf installations are often subjected to abnormally hard and prolonged use. All too often, these large, heavily used grass areas are maintained under a very limited budget. To survive under these conditions, the grass must be especially hardy, disease resistant, wear resistant, and have fast and complete recovery characteristics from wear. The hybrid bermudas are outstanding in all these respects, when planted in their adaptable areas throughout California.

To date, the most common installation for hybrid bermudas has been football fields, but wider use on golf fairways and other athletic facilities is becoming more popular. Two of the first golf courses in California to plant hybrids on all fairways was the La Canada Country Club and the San Marcos Golf Course lo-

cated in those respective cities. The expanding market and new applications include some highway rights-of-way, parks, and industrial sites.

Present company policy is to concentrate solely on the growing and supplying of material and planting equipment to landscape contractors and custom applicators. In some cases where the buyer is doing the installation and no contractor is involved in the work, we offer assistance and make the specialized planters available at the same rental charge as offered contractors.

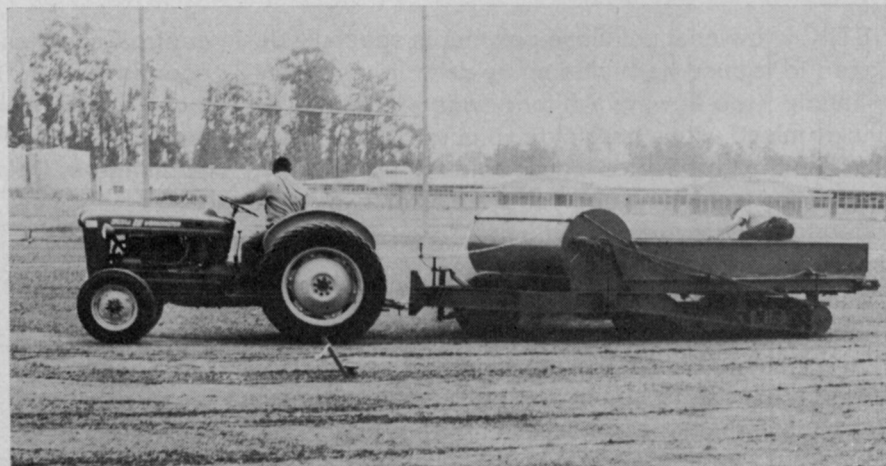
At both of our turfgrass farms, the Camarillo location and the northern growing grounds located at Patterson, California, a constant effort has been made to produce and plant good quality stolons with as little labor and handling as possible.

Growing

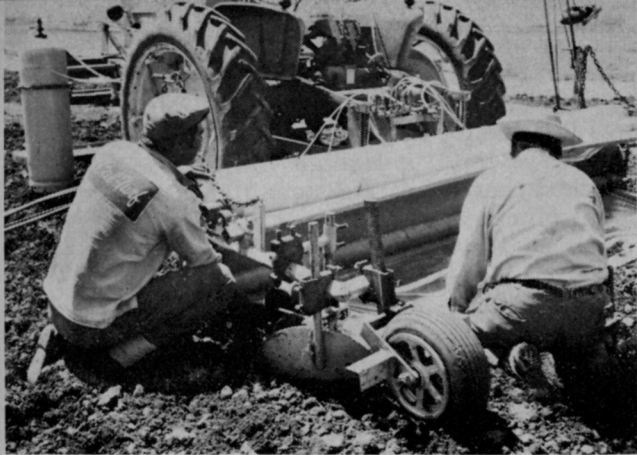
In the production phase of our operation, a modernization program meant the introduction of a system of fumigation that could handle the job of application of fumigant to all growing grounds prior to planting. Initial efforts to attempt this preplant operation of weed, disease, and nematode control on all areas where sod and stolons were to be grown proved costly. A system has been



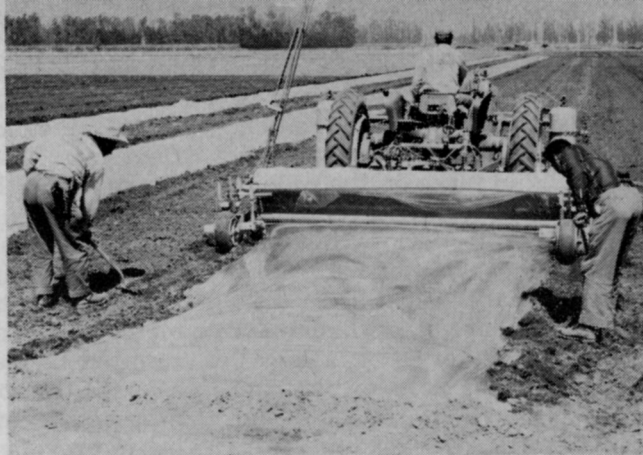
Small area planter automatically distributes and presses bermuda stolons into soil and plants half acre per hour. Capacity is 10 bushels.



Large area stolonizer has sufficient weight to leave new-planted areas smooth. The machine is drawn by a tractor with a three-point hitch. Working capacity of this larger planter is a total of 20 acres per day. Cal-Turf rents this unit to contractors buying its stolons.



Plastic sheeting is readied for field fumigation. Disc in foreground tosses soil into plastic; rubber wheels follow to seal edge into soil.



Three men can fumigate one to two acres per hour. Direct injection method is used with pressurized fumigant cylinders mounted on tractor.

developed and at the present time costs have been reduced to an average of \$400.00 per acre. A direct line injection method is employed with pressurized cylinders of fumigant mounted on a tractor with control valves within easy reach of the operator. Plastic tarp laying follows immediately from the rolls mounted on the back of the tractor. Three men can fumigate from one to two acres per hour, depending on the length of the field run. Ideal conditions require little to no wind, and adequate soil moisture. Recent development of a machine to remove the plastic sheeting from the fields, by the Tri-Cal Co. of Placentia, Calif., a firm that specializes in fumigation techniques, may further reduce costs.

In a master plan for the growing areas, an attempt to isolate various varieties has been made. Every employee is made aware that purity of strain is of utmost

importance and a necessary requirement for a solid foundation, for future sales and company growth. Special equipment is assigned to each variety and when moved into a different block due to unavoidable conditions, the equipment is thoroughly cleaned with air hoses and then steam cleaned, to avoid any contamination.

Introduction of a certification program by the California Crop Improvement Association, calls for a 50-foot strip between similar species. This restriction has emphasized the need for careful planting of future growing areas to utilize all land to the best advantage. Only basic material of a known origin is used for any planting. The aim of our production crews is to harvest only mature material; experience has proven the best stolons have a large number of nodes and the material has been hardened off to reduce transplanting shock.

All hybrid bermuda stolon growing blocks are kept at approximately two inches high, with minimum water and fertilizer applications. Since it is our desire to harvest material that consists of a majority of heavy rhizome growth that can withstand some possible neglect conditions after planting, only material that is at least one year old is harvested.

Harvesting

Our harvesting operation begins with the area being cut with a sod cutter slightly below the soil level. The stolon harvester, pulled by a tractor, feeds the cut material onto a conveyor belt that carries it into the machine which cuts, shreds, and screens it. Cutting knives are set to cut the majority of the material two and one half inches long. It is then fed automatically into the bins which are carried on the



New machine, developed by Tri-Cal Co., fumigation technique specialists, quickly removes sheeting prior to planting; reduces labor costs.



Hybrid bermuda harvester shreds, chops, and screens stolons in one operation; conveys them into bulk bins carried on back of machine.

back platform of the machine. One bin is always in reserve to avoid any delay in the operation. As one bin is filled, the reserve bin is slid in place on the rollers. The new harvester, developed at the Camarillo farms this past winter, is capable of harvesting up to 1200 bushels per hour. Two sizes of bins are used; the largest has a capacity of 90 bushels.

A forklift is used to pick the filled bins out of the field and deliver them to the loading ramp, where they are iced and loaded

for shipment. Most harvesting is scheduled for late afternoon when the stolons have lost their field heat. With this new system of handling bulk packed bermuda stolons, an equal amount of material can be harvested in one hour, that only a year ago took eight hours. This new method of stolon handling has resulted in fresher material because of the speed and thoroughness of the operation, and is a big improvement on older methods. Although only one of these

machines has been built for the southern farms, work has already begun in our shops to build a similar one for the Patterson farms since it has proved satisfactory.

Planting

In the Southwest, the ideal planting season for hybrid bermudas is short. Because of the wide climate variations, no exact dates can be set, but the most favorable time is considered from the middle of March until the end of September. During the cool season, more planting is being done with an overseeding, usually Creeping Red fescue is specified at 80 to 100 pounds to the acre.

Very little fumigation of the sites to be planted is done, even with the excellent application equipment available. Where fumigation does precede planting, it is very evident that it is an excellent practice and pays dividends in the absence of weeds and getting a fast stand of grass. Much of the planting is done in heavier type soil that has been amended, usually with redwood, sawdust or chips, or in some cases, large quantities of steer manure is used. For ideal planting, the top couple of inches of soil should be loose with some moisture.

New Stolon Planter

Development of a new stolonizer this year is the result of five years of work with varying methods of planting that started with a four-man row sprigger. The machine automatically distributes stolons evenly on the prepared surface and simultaneously presses them into the soil and rolls the area smooth. The machine is drawn with a tractor and is capable of planting up to 20 acres a day. The rate of planting can be varied according to the amount of plant material placed in the self-feeding hopper. A steel hood was incorporated over the distribution tines, which directs the material downward. This hood is especially useful when planting during high winds to prevent any blowing of stolons.

A set of cup discs can be lowered to break any surface soil

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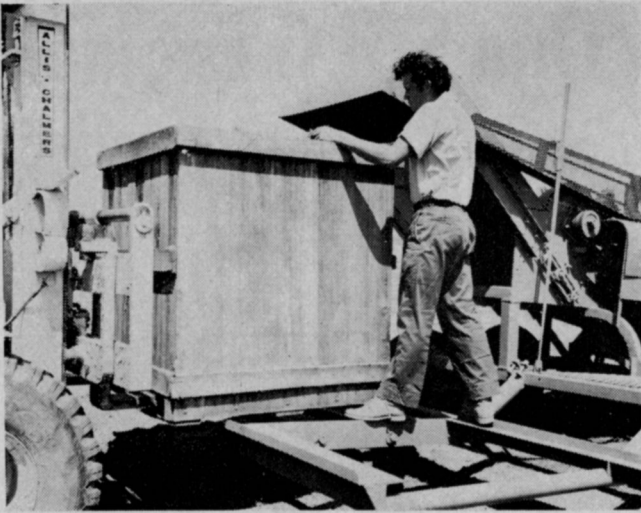
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Large bins are easily unloaded from harvester. Loaded, bins weigh 900 lbs. Empty bin is quickly slid in place for continuous harvesting.



Stolons are bagged right in the field to assure freshness. Operation is scheduled for late afternoon when stolons have lost field heat.

crust. Two sets of offset straight discs, spaced two inches apart, presses the material into the soil for good contact.

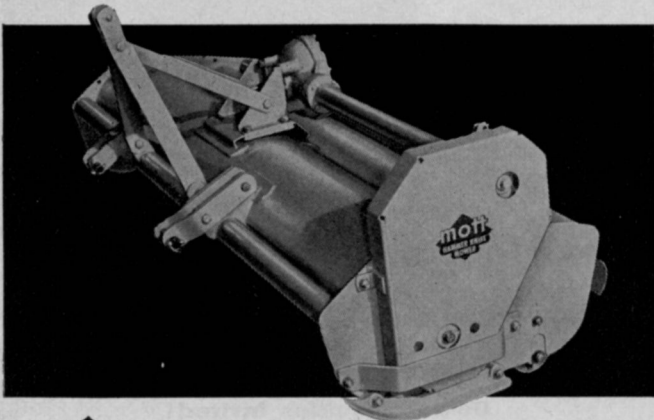
Stolon Placement Controlled

The majority of the stolons are placed in the top one-half inch of soil. Incorporated in the new machine is a guide wheel that can be raised or lowered to con-

trol depth of stolon placement. The last operation of the machine is a roller of sufficient weight to pack the soil around the plants and leave the surface level. Rate of coverage depends on amount and quality of the material applied, the temperature and weather, and of course, the care after planting. Water also plays the critical role in maintenance

after planting. Stolonizing is always done with regard to the layout and the sprinkler sequence pattern; care is always taken not to plant too far ahead of watering. A maximum time delay before watering is very dependent on whether it is a bright, hot day or a cool and cloudy day, but never do we exceed this general guide: (100°-15 minutes,

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Bagged stolons, two and a half inches long, are loaded onto huge trailer and then quickly iced to protect quality during transport.

90°-20 minutes, 80°-30 minutes, 70°-1 hour). When possible, all planting is scheduled for early morning or late afternoon, especially during extremely hot weather.

After planting, quick coverage becomes the immediate objective. This means adequate irrigation, fertilization, and early and regular mowing. The results of

the planting will depend, to a great extent, on the willingness of the buyer to provide a good maintenance program.

In an effort to observe new varieties being developed throughout the country, the company has established plots at both growing grounds. The most promising varieties are being observed for possible future plant-

ings after they are proven to have desirable characteristics and will adapt to the varied California soil and climatic conditions. With regard to expansion, options have been taken on new growing grounds, to insure the firm areas to expand, to keep pace with this young, but fast-growing turf industry throughout the state.

try this simple test...



Take an object weighing twenty pounds into your hands (the vacuum cleaner is just fine) . . . Kneel down with it . . . Now, still crouching . . . move ahead five feet . . . now five more . . . stand up . . . kneel down . . . move ahead another five feet . . .

Tiring, isn't it?

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