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brown, dead,
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tion time, Balan will prevent the new crop of *Poa annua* seeds from sprouting. Eliminates most of your future problems with *Poa annua* before they start. Gives your desirable grasses a chance to fill in. **UNIQUELY WATERPROOF.** Many herbicides are highly soluble in water, and leach too deep into the soil. Not Balan. Heavy

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and field stations. Recommended by many universities. Used by top golf courses. In fact, USDA registration acknowledges what many turfgrass professionals have long known from their own testing. Balan stops virtually every annual weedgrass, including *Poa*. See for yourself.



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(alias crowfoot,
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Crabgrass

(smooth and hairy)

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(green and yellow)

Balan stops the annual weedgrasses on your most unwanted list.

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USE BALAN CONFIDENTLY. If you've never tried dependable Balan, only one thing will convince you. Actual use. So you be the judge. See if Balan doesn't give you more dependable per-

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And no wonder. Balan Granular is the one herbicide formulated to make a turfgrass professional's life easier. Why have it any other way?

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Goes
...all out
...all over
all season.



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Turfgrass research review

by Dr. James B. Beard

Evaluating performances of overseeded grasses

Selection of Grasses for Overseeding.

H.G. Meyers and G.C. Horn. 1967 *Proceedings of the Florida Turfgrass Management Conference*. 15:47-52. 1967. (from the *Department of Ornamental Horticulture, University of Florida, Gainesville, Fla. 32603*).

The performance of five commonly used cool season turfgrasses overseeded alone and in mixtures were evaluated. The experiments were conducted on an established Tifdwarf bermudagrass turf maintained under putting conditions with a duplicate experiment also conducted on Tifgreen-328 bermudagrass. The grasses and seeding rates in pounds per 1,000 square feet used for the pure stands were as follows: Penncross creeping bentgrass (4.2), Pennlawn red fescue (30), Kentucky bluegrass (10), domestic ryegrass (50) and rough bluegrass (10). In

continued on page 26

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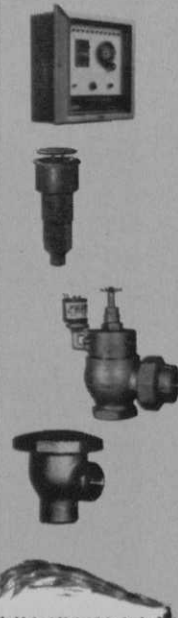
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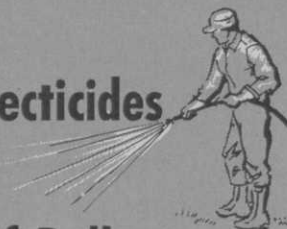
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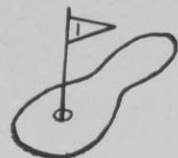
addition to the individual plantings, mixtures containing all possible combinations of the five grasses were tested with the mixtures containing either two, three, four or five of the grasses. The plot size was three by four feet. One week prior to seeding, the bermudagrass was vertically mowed twice and the clippings removed. The vertical mowing was at a 0.5 inch blade spacing with a depth of cut which penetrated the soil slightly. Immediately following the vertical mowing the test sites were seeded and top-dressed with one-sixteenth of an inch of sterilized topsoil. The top-dressed plots were dragged once with a burlap covered steel drag, watered lightly and sprayed with 35 per cent WP Dexon at the rate of four ounces of material per 1,000 square feet.

The ryegrass and rough bluegrass germinated in approximately seven days. The germination of bentgrass, red fescue and Kentucky bluegrass was much slower, occurring in approximately 10, 14 and 21 days, respectively. The germination rate was slow due to the occurrence of low temperature during the establishment period. The rate of establishment of the five grasses was in the same order as the germination.

Appearance ratings of pure stands of the five grasses under evaluation indicated that creeping bentgrass, rough bluegrass and Kentucky bluegrass gave equally high appearance ratings while the appearance of red fescue was somewhat less and that for the ryegrass was definitely inferior.

The appearance rating of the established mixture was never better than the pure stand rating of the best grass in the mixture. The two and three grass component mixtures ranked highest in appearance and all contained Kentucky bluegrass or rough blue-

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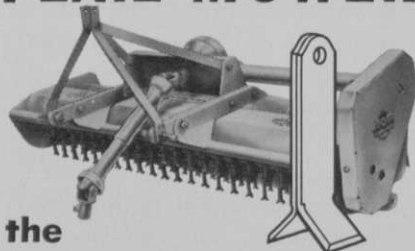
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tem designed to keep installation and maintenance costs to an absolute minimum. A system that over the years will resist corrosion and return maximum value for each dollar invested. Little wonder J-M Ring-Tite pipes are the most widely used pipes in turf irrigation today.

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Beard

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grass. Most of these mixtures also contained red fescue which established rapidly and did not decrease the appearance of mixtures as much as the ryegrass. No advantage was achieved from mixing either four or five of the grasses and in general, the appearance of mixtures containing these four or

five grasses was poorer than ratings for the pure stands of the same grasses. The best mixture in terms of appearance ratings was a combination of red fescue and Kentucky bluegrass.

Comments: The criteria to be utilized in the selection of a grass or mixture of grasses for overseeding of bermudagrass turfs includes (a) overall appearance, including color and texture, (b) putting qual-

ity, (c) rate of establishment, (d) establishment and maintenance costs, and (e) ease of transition from bermudagrass to the overseeded grass in the spring and fall. The report by the above authors is concerned primarily with overall appearance and with rate of establishment. Ryegrass and rough bluegrass were the most rapid in the rate of establishment followed by creeping bentgrass, red fescue and Kentucky bluegrass. The ryegrass produces an inferior quality turf whereas the creeping bentgrasses are finer textured and result in improved putting quality. □

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Other papers of interest:

1. *Turfgrass variety comparisons*. G.C. Horn. 1967. Proceedings of the Florida Turfgrass Management Conference. 15:91-99. (from the Department of Ornamental Horticulture, University of Florida, Gainesville, Fla. 32603).

2. *Control of dollar spot, copper spot, and brown patch from 1948 to 1963 with various fungicides and combinations*. S.H. Davis, Jr., S. Bachelder, and R.E. Engle. 1966. Report on Turfgrass Research at Rutgers University. New Jersey Agricultural Experiment Station Bulletin 816. pp. 99-108. (from the Department of Plant Biology, Rutgers, the State University, New Brunswick, N.J. 08903).

3. *Investigations on the control of annual meadow-grass*. V.A. Gi-beault. 1967. Journal of the Sports Turf Research Institute. 42:17-40. (from the Sports Turf Research Institute, Bingley, Yorkshire, England).

4. *Why nitrogen fertilization controls the dollar spot disease of turfgrass*. R.M. Endo. 1967. California Turfgrass Culture. 17(2): 11. (from the Department of Plant Pathology, University of California at Riverside, Riverside, Calif., 92502).