

# OVERSEEDING WITH QUALITY

*Selection of grasses, establishment and maintenance for bermudagrass*

Even in the South — where bermudagrass is king — there is enough frost in the winter to cause turf dormancy. Overseeding is the answer to provide a uniformly dense playing surface and desirable green turf, according to A. R. Mazur, assistant professor of horticulture at Clemson University.

"Overseeding straw-brown bermudagrass turf is necessary to provide the surface and an aesthetically pleasing sward," Mazur told GOLFDOM. "Overseeding also prevents attrition damage to bermudagrass and is prompted by the fact dormant turf areas become unsightly when they are readily invaded by a host of winter annual weeds when competition is lacking."

Mazur has compiled information on overseeding periods in various regions of the country, attributes and criteria for selection of overseeding grasses and guidelines for establishment and maintenance of overseeded areas.

The length of the overseeding period ranges from three months in the lower south and coastal regions to seven to eight months in more northern areas, Mazur said. During this period overseeded grasses, particularly those on greens, must persist under close frequent mowing and heavy foot traffic. He said basic attributes and criteria for the selection of overseeded grasses are:

- rapid germination and establishment
- tolerance to disease, close frequent mowing, traffic and frost
- gradual transition back to bermudagrass in the spring.

"Annual ryegrass has been used traditionally for overseeding purposes mainly because of its rapid germination, fast establishment, good wear resistance, low cost and wide availability," Mazur said. "However, susceptibility to *Pythium*, coarse texture, low frost tolerance and rapid loss in the spring created a need for alter-

natives to annual ryegrass."

He said during the 1950s research was conducted to evaluate the overseeding potential of other cool season grasses<sup>11</sup>. Studies have shown that red fescue maintained good density on putting surfaces during winter and exhibited excellent spring transition<sup>8</sup>. *Agrostis* species were found to be slow in establishment, provide inferior turf during winter and exhibited excellent prior to and during spring transition<sup>7</sup>.

Research in Florida<sup>5</sup> showed little difference in performance of monostands of red fescue, Kentucky bluegrass, creeping bentgrass or rough bluegrass. However, results from Texas<sup>4</sup> and Virginia<sup>8</sup> indicated rough bluegrass was the first grass to decline in the warm spring weather. In the Texas studies<sup>4</sup> rough bluegrass showed quicker establishment than Kentucky bluegrass while the slower establishing bentgrasses exhibited a smoother transition. Mazur said studies have shown annual ryegrass and rough bluegrass are more effective in masking the presence of weedy annual bluegrass because of their light color<sup>6</sup>.

"Attempts have been made to improve overseeding quality through mixtures and blends of cool season grasses by taking advantage of the strong characteristics of individual grasses," he said. It has been demonstrated, however, that pure stands of grasses are generally superior to mixtures of two or more grasses<sup>5</sup>. Turf quality of mixtures was shown to be correlated with the amount of superior grass in the mixture. He said in the last six or seven years a great number of improved turfgrass cultivars have been developed and provided a new source of materials for overseeding. Several perennial ryegrass and red fescue varieties in particular have shown superior results<sup>10</sup>.

These improved cultivars have shown less seedling mortality,

greater seedling vigor and/or tiller production as well as greater disease tolerance<sup>2</sup>. The perennial ryegrasses in particular exhibit improved wear and frost tolerance while the red fescues provide finer leaf texture and upright growth habit preferred by golfers<sup>2 10</sup>. Although bentgrass provides dense and upright growth it tends to remain soft and lacks the resiliency necessary for a quality putting surface, he said.

Proper timing, seeding rate and method of establishment are instrumental in the success of an overseeding both in terms of quality and cost.

Overseeding too early in the season can result in failure because of high incidence of *Pythium* under warm humid conditions and/or excessive competition from bermudagrass. Seeding dates range from early October in Virginia<sup>7</sup> to a late November in Florida<sup>5</sup>. The best indicator of optimum seeding period is when the night temperatures are consistently in the 50s<sup>10</sup>.

Method and degree of seedbed preparation have also been shown to have a pronounced effect on overseeding establishment rate and quality<sup>1 8</sup>. The ideal situation in the transition from warm to cool season grass would be to cause little or no reduction in putting quality. Traditionally, the accepted method to insure uniform germination and reduce bermudagrass competition was to mow vertically in at least two directions and scalp the bermudagrass turf. Vertical mowing, in addition to reducing bermudagrass competition, physically removes thatch that can reduce germination. A layer of topdressing (4-6 mm) has been shown to improve rate and uniformity of overseeding germination<sup>10</sup>.

Overseeding rate is a factor of the number of seedlings that will develop for a particular species during the winter months. Rates are generally high because plants on the whole remain in the seedling stages and mortality rates are high due to disease, competition and traffic. Generally, we think of a range of 10-25 millions seeds per 1,000 square feet for overseeding putting greens. The great variability in range is due primarily to seed size.

"With the larger seeded and more vigorous species such as *Lolium* we think in terms of 10-15

## OVERSEEDING continued

million seeds per 1,000 square feet, while with the smaller seeded less vigorous species such as *Agrostis* we need 20-25 million seeds per 1,000 square feet," he said<sup>2 10</sup>. Quality overseedings on putting greens have been obtained with red fescue at 17-26 pounds per 1,000 square feet, annual ryegrass at 50-60 pounds per 1,

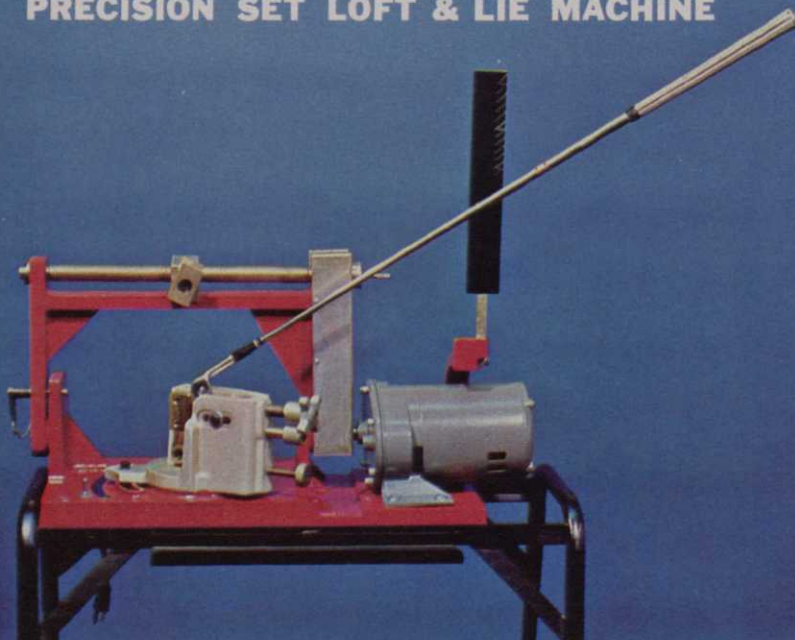
000 square feet and bluegrasses at 10 pounds per 1,000 square feet<sup>9 10</sup>.

Frequent fertilizer applications are important for the maintenance of turf quality during the winter months. Applications of one pound of nitrogen per 1,000 square feet from a soluble source have been shown to adequately supply these needs<sup>7</sup>. The first fertilizer application should be delayed until two or

three weeks after germination. Fertilizer materials should be watered in thoroughly to avoid salt burn injury to seedlings.

Mowing schedules should be established as soon as necessary and maintained with adequate frequency so that no more than one-third of the leaf surface is removed at any time. Height of cut will vary depending on use from 1/4 inch on putting greens to three inches on some lawn areas. Putting surfaces are initially mowed at 1/2 inch and gradually decreased 1/16 inch with time as conditions permit until the desired 1/4 inch is attained. Depending on environmental conditions and quality requirements, overseeded greens should be mowed between three and six times weekly.

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