

Additional data were collected on field nursery and evaluation plots of zoysia selections established in 1980 and 1981. In general, data for rust infection, drought tolerance, and turfgrass quality agreed with earlier data. Thatch accumulation was directly associated with plant density and leaf width. In general, Zoysia japonica selections were more drought tolerant than Zoysia matrella selections. However, after complete dormancy was reached this summer, the matrella selections greened up quicker following rain than japonica selections.

Two seed establishment studies were undertaken this summer. The first was to determine the effect of using straw or plastic mulch on seed germination and establishment. The other study is to determine the influence of mowing height and nitrogen levels on seedling establishment. Both studies will continue through next year.

R-70610
TEXAS AGRICULTURAL EXPERIMENT STATION - DALLAS - Dr. M. Engelke, Project Leader
 and

U. S. DEPARTMENT OF AGRICULTURE - Dr. J. Murray, Project Leader

Funds Granted \$5000 Maintenance of zoysia germ plasm collections.

An additional grant of \$2500 was made to each of the above institutions in August, 1983 in support of the zoysia germ plasm collections made throughout Southeast Asia in 1982. This support was deemed essential in view of the serious disease problem encountered with the zoysia collections. The funds were used for additional greenhouse maintenance and disease study.

GOLF SHOE STUDY - Bengueyfield, Gibeault* and Youngner*, Project Leaders

R-70611
 Funds Granted \$2000 Study of turfgrass wear caused by golf shoes.

With the introduction of new multi stud golf shoes in 1982, many complaints from club officials and golf course superintendents were received regarding the effect of these shoes on putting surfaces. This experiment was carried out at Industry Hills Golf Club after being developed and designed by Drs. Gibeault and Youngner at U C Riverside. The experiment was reported in detail in the September/October, 1983 issue of the USGA Green Section Record.

In summary, the exhaustive tests showed that the conventional spiked golf shoe caused the greatest amount of turfgrass damage and wear. The multi stud golf shoes caused medium turfgrass damage and wear. The "teaching" type golf shoe caused a very minimal amount of turf damage or wear. The above results were found on both 'normal' and 'wet' putting surfaces.

Putting quality was also tested under normal putting green conditions. This subjective test showed that the plots with the poorest putting quality ratings were those of the conventional spike golf shoe. The multi stud shoes and the teaching shoe received a much more favorable putting rating.

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