Table 3. Effects of three heights of cut and three nitrogen (N) fertilization levels on the surface hardness, expressed as five-year means of the Clegg Impact Values, of turfs grown on a modified high-sand root zone. 1989-1994.

Height of Cut in mm (inch) Treatment	Nitrogen Rate Per Growing Month as N kg/100 m^2 (lb/1,000 ft^2)	Clegg Impact Value (g) (2.25 kg Hammer)
12 (0.5)	0.25 (0.5)	62 a*
12 (0.5)	0.50 (1.0)	58 ab
12 (0.5)	0.75 (1.5)	53 b
25 (1.0)	0.25 (0.5)	58 ab
25 (1.0)	0.50 (1.0)	53 b
25 (1.0)	0.75 (1.5)	60 ab
37 (1.5)	0.25 (0.5)	60 ab
37 (1.5)	0.50 (1.0)	59 ab
37 (1.5)	0.75 (1.5)	55 b

*Means followed by the same letter within the same column are not significantly different at the 5% level, LSD t-Test.

Turfgrass Cultivar Effects

The effects of six *Zoysia* cultivars and two heights of cut, assessed with the 0.5 kg Clegg hammer and the fourth drop, indicate that surface hardness can be modified by cultivar selection and by height of cut. The softness benefits exceeded 50% among the six cultivars (Table 4). The increasing softness among cultivars was associated with an increase in shoot density and a higher leaf-to-stem ratio. The effects of an increased cutting height on enhanced softness of the surface were substantial as reported earlier.

ROOF GREENING

Roof greening involves the development of a root zone and the establishment of turf and/or landscape plantings on the flat roofs of buildings. This is an issue that is gaining favor in Germany. Cities have actually enacted roof greening regulations for specific buildings and in some cases provide financial support for this effort. Some German states provide recommendations relative to roof greening, with the objective of improving the ecological and aesthetic environment of urban areas.

Table 4. Effects of six mature *Zoysia* cultivar turfs and two heights of cut on the surface hardness expressed as the Clegg Impact Values (CIV), when grown on a modified high-sand root zone.

Zoysiagrass Cultivar Treatment	Height of Cut - mm (inch)		Percent Change from 12 to 25 mm Cutting Heights
	12 mm (0.5 in.)	25 mm (1.0 inch)	
Belair	69 a*	41 a	-41
El Toro	54 b	39 a	-28
Korean Common	55 b	35 a	-36
Meyer	48 bc	33 a	-31
FC 13251	44 c	31 ab	-30
Emerald	32 d	22 b	-31

*Means followed by the same letter within the same column are not significantly different at the 5% level, LSD t-Test.

References:

- Beard, J.B and S.I. Sifers. 1990. Feasibility assessment of randomly oriented interlocking mesh element matrices for turfed root zones. American Society of Testing Materials, Standard Technical Publication 1073. pp 154-165.
- Beard, J.B and S.I. Sifers. 1993. Stabilization and enhancement of sand-modified root zones for high traffic sports turfs with mesh elements. Texas Agricultural Experiment Station, Texas A&M University System. B-1710, 40 pages.
- Beard, J.B and S.I. Sifers. 1989. A randomly oriented, interlocking mesh element matrices system for sport turf root zone construction. Proc. Int. Turfgrass Res. Conf. 6:253-257.

UPCOMING JB VISITATIONS:

Provided for Institute Affiliates who might wish to request a visitation when I'm nearby:

- March 1 to 5 - Montreal Canada.
- March 11 to 14 - Columbus, Ohio.
- April 14 to 17 - Washington, D.C.
- April 21 to 22 - Phoenix, Arizona.
- May 21 to June 6 - UK, Netherlands, Belgium, & Germany.
- May 7 to 14 - Italy.