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Identifying Agrostis cultivars


The objective of this study was to develop methods for distinguishing species and cultivars of Agrostis while in the seedling stage. The studies were conducted in controlled climate growth chambers with continuous light with a complete nutrient solution supplied. The experiments were terminated five weeks after the grass seeds were planted. The data collected included growth habit, leaf sheath color, stem diameter, leaf blade length, leaf blade width, stem length and stem number. Cultivars evaluated in the study were common redtop (Agrostis alba L.), 'Kingston' velvet bentgrass (Agrostis canina L.), 'Penncross' and 'Seaside' creeping bentgrasses (Agrostis palustris Muds.) and 'Exeter' and 'Highland' colonial bentgrasses (Agrostis tenuis Sibth.)

Differences among species were evident within three weeks following planting. Creeping bentgrass plants were characterized by long stems, an intermediate leaf size and a prostrate or decumbent growth habit. Velvet bentgrass plants had small leaves, many stems, a small stem diameter and a prostrate or decumbent growth habit. Colonial bentgrass plants were short, intermediate in leaf size and upright in growth habit. Redtop plants were characterized by a large leaf size, relatively few stems, a large stem diameter and an upright growth habit.

A comparison between the two colonial bentgrass cultivars, Exeter and Highland, showed Exeter to have twice as many leaf sheaths with a red coloration as was observed with Highland. The Highland cultivar had a greater number of stems per plant, a greater stem length and a significantly higher percentage of decumbent plants. In contrast to the differences observed between the two colonial bentgrass cultivars, no significant differences were observed between seedlings of the two creeping bentgrasses.

Seed analysts can identify most Agrostis turfgrass seed as to species but distinguishing cultivars is much more difficult. The authors have concluded from this study that Agrostis species and certain cultivars can be distinguished in the seedling stage. Thus, such a technique could be used to determine if seed of certain species is correctly labeled as to the specific cultivar.


The objective of this study was to determine the optimum light intensity for turfgrass growth and development as affected by two types of light quality: (a) blue, with sunlight transmission primarily in the 410 to 510 millimicron range and (b) gray, with sunlight transmission from 390 to 760 millimicrons. Mature sods of Tifgreen bermudagrass and Windsor Kentucky bluegrass were utilized in this study. The cultural practices included a weekly clipping at 1.5 inches, watering three times per week and a monthly application of one pound of actual nitrogen per 1,000 square feet. The sod pieces were placed under transparent, acrylic plastic panels having varying light transmission properties in the blue and gray light transmission ranges. The light intensities used in the study ranged from 18 to 74 per cent of full sunlight for the blue transmitted light treatment and from 15 to 71 per cent for the gray trans- (Continued on page 35)
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mitted light. Data taken included fresh weight of clippings removed and plant height, plus visual ratings of turfgrass quality, color, shoot density, seedhead formation and mildew incidence.

Comparisons of turfs grown under blue light versus gray light showed better turfgrass color and quality when grown under the blue light whereas fresh weight clipping removal and plant height were less. These differences were most evident at light intensities ranging from 25 to 45 per cent of full sunlight. In the case of bermudagrass, seedhead formation was reduced when grown under gray transmitted light compared to turfs grown in full sunlight. In contrast, seedhead formation was stimulated when grown under blue light as transmission values of more than 40 per cent of full sunlight.

Comparisons of light intensity affects showed that turfgrass shoot density was not influenced by the two types of light quality except at low light intensities. The minimum light intensity for acceptable growth and turfgrass quality of the two turfgrass species was 40 to 50 per cent transmittance of full sunlight when grown in blue transmitted sunlight and 60 to 70 per cent transmittance when grown in gray transmitted sunlight.

In summary, these data show that over-all turfgrass quality and performance are better when turfgrasses are grown in blue transmitted sunlight rather than in gray light, and that turfgrasses can tolerate a lower light intensity when grown in the blue transmitted light.

Comments: Light is one of the essential environmental factors required for the growth and development of turfgrasses. Light can be measured in terms of (a) intensity or quantity, (b) quality and (c) duration or day length. Both turfgrass quantity and quality are significantly altered under shaded environments. The decrease in light intensity under shaded environments results in a reduction in radiation energy available for the photosynthetic process. Due to a lack of carbohydrate synthesis, there is a general decline in turfgrass quality including a reduction in shoot density, rooting depth and rate of shoot growth. Associated with this is increased succulence, thinner cell.

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Beard
continued from page 35
walls and a more delicate cell structure which is quite prone to disease invasion, traffic damage and heat, cold or drought injury. The above study shows that the minimum light intensity for adequate turfgrass quality and growth will vary depending on the quality of light transmitted and turfgrass species involved.

The quality of light under a tree canopy is substantially altered. There is a general reduction in the blue and red wave lengths of the visible light spectrum and an increase in the percentage of green and far-red wave lengths. It is primarily the blue and red wave lengths which are absorbed by chlorophyll and utilized in the photosynthetic process. The importance of blue light is very well illustrated in this study. It is also the blue and red wave lengths which are “screened-out” by the tree foliage. This results in a predominance of green and far-red wave lengths under the tree canopy. Thus, the light quality under a tree canopy is reduced in those wave lengths which are most important for turfgrass growth.

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LITERATURE

Modern Golf Course Superintendent
By Dick Viergever
Thomson Publications
Fresno, Calif. $9.50

Viergever's compactly written 100 pages cover the superintendent's professional picture and prospects, his education, responsibilities, his management operations and relations, the structure and training of his crew, his maintenance of property and equipment, his budget management, his appraisal of his job and his personal and family position in the community picture.

This book is an excellent roundup of the superintendent's duties at his course and as a citizen involved in a highly important business. "The Modern Golf Course Superintendent" will contribute to the superintendent's self-examination and progress and to the mutual understanding of superintendent and club officials. It is a practical supplement to the classic "Turf Management" by the late Burt Musser and others and to those historic items "Turf for Golf Courses" by Piper and Oakley and "Golf Course Common-sense," edited by Gertrude Farley.

—Herb Graffis

Jacklin The Champion's Own Story
By Tony Jacklin
Simon and Schuster
New York, N.Y. $6.50

“There is a natural law in games by which, periodically, a genius arises and sets the standard of achievement perceptibly higher than ever before. He forces the pace; the rest have to follow as best they can, and end by squeezing out of themselves just a yard or two more than they would have believed possible.” Bernard Darwin wrote that in 1932 about the triumvirate: Harry Vardon, J.H. Taylor and James Braid.

It could have been written about young Tony Jacklin, who captured the 1970 U.S. Open at the Hazeltine National GC and proved that Great Britain at least for his time in the sun was no longer a second rate golfing power. Coupled with his British Open victory the previous year, he became the only Briton ever to hold both titles at the same time.

In "Jacklin The Champion's Own Story," we see how he set the pace at Hazeltine with a brilliant first round in murderously high winds and later how he responded to mounting tension and leg cramps during the final round when his lead became precarious.

“It’s difficult to describe how I felt,” he writes. “One minute everything is going for me, the next that odd feeling of loneliness and isolation which is heightened by the fact there seems to be millions of people around but none of them can help.

“After winning the British Open," Jacklin writes, “the first fellow I spoke to was Nicklaus. I said, ‘God, Jack, I never knew anyone could be so scared, so frightened.’ He grabbed me warmly and said, ‘Don’t worry. It happens to everyone in the big ones. It happens to everyone in the big ones. It even happened to Hogan.’ ”

Indeed, this is a warm and insight-ful book by one of the brightest per- sonalities on the world’s golf scene.

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