Turfgrass research review

by Dr. James B. Beard

There are a number of new turfgrass varieties which have recently been released or will be released in the near future. The purpose of this article is to bring together a summarization of the origin, development, adaptation, characteristics and management requirements of many of these newly developed turfgrass varieties.

This information was obtained from the originating institution or company. Some of the varieties have not been widely tested throughout the United States; therefore, it is suggested that the reader confer with his own state agriculture experiment station concerning the performance of a specific variety which he is interested in under the soil and environmental conditions of his area.

There is a trend toward developing individual turfgrass varieties for a particular environment or soil condition of a specific region. Thus, a particular variety may not have wide adaptation and use. This is an important concern to an individual considering the use of a new variety.

Name:
EXETER COLONIAL BENTGRASS
(Agrostis tenuis Sibth.)

Development: Selection made by the personnel of the Department of Agronomy, University of Rhode Island from an old pasture in southern Rhode Island near the town of Exeter. The variety was released in 1963 and was commercially available in 1964. It has been under evaluation since 1940 at numerous locations across the United States as well as in Europe.

Adaptation: Exeter is adapted to the northern cool, humid region in the usual areas of colonial bentgrass adaptation. It posesses excellent winter hardiness; good heat tolerance being better than Astoria; drought tolerance comparable to Astoria; and poor shade tolerance comparable to Astoria.

Characteristics: Exeter posesses an erect growth habit with short stolons. Its density is excellent, being better than Astoria during the summer months. It has a bright, apple green color and a leaf texture which are both similar to Astoria. The rate of establishment is rapid. The thatching tendency and wear tolerance of Exeter are similar to Astoria. The disease resistance of Exeter is comparable to Astoria except that Exeter has slightly less resistance to *Typhula* snowmold. During the winter, Exeter becomes very brown and dormant.

Use and Management Requirements: Exeter is an erect growing type of colonial bentgrass with unusally good summer quality. It is recommended for uses similar to other colonial bentgrasses. Also, the management requirements are comparable to colonial bentgrass with a suggested mowing height of between ½ and ¾ inch and a fertilization frequency of between one and three times per season. The mowing quality is excellent.

Name:
SANTA ANA BERMUDAGRASS
(Cynodon hybrid)

Development: Selection made by V.B. Youngner of the California Agricultural Experiment Station. It is a selected hybrid of *Cynodon dactylon* and *Cynodon transvalensis*. The variety was released in 1967 and was commercially available in 1968. It has been under evaluation for ten years in many California locations and at the University of Arizona.

Adaptation: Santa Ana is well adapted to California and the Pacific southwest. At present it is not recommended for other areas because of insufficent testing. It posesses excellent drought tolerance similar to Tifway, excellent heat tolerance and is highly tolerant of salinity. The shade tolerance is poor. The winter hardiness of Santa Ana is about the same as Tifway and not as good as U-3. Santa Ana has good winter color retention in mild areas.

Characteristics: Santa Ana has a rapid establishment rate which is greater than Tifway. It forms a very dense, semi-prostrate turf similar to Tifway. The leaf texture is fine, comparable to Tifgreen. It has a dark blue-green color. Santa Ana has excellent rhizome and stolon vigor which causes it to heal rapidly following injury with the rate being faster than Tifway. The thatching tendency is less than that of Tifway. To date, Santa Ana has not shown any disease problems in California and is highly resistant to the Eriophyid mite of bermudagrass. Santa Ana has a high tolerance to smog injury and is also one of the most wear tolerant bermudagrasses.

Use and Management Requirements: Santa Ana was introduced specifically for heavy duty turf uses such as playgrounds, athletic fields, tees, etc. Management requirements are similar to any of the other bermudagrass varieties. The mowing quality is similar to Tifway.

Name:
MANHATTAN PERENNIAL RYEGRASS *(Lolium perenne L.)*

Development: Selection made by C.R. Funk and R.E. Engel of the New Jersey Agricultural Experiment Station. Origin of the selec-

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tion was from a collection of plants from old turfgrass areas in Central Park, Manhattan Island, New York City. The variety is presently available in very limited quantities with production being increased.

Adaptation: Manhattan performs best in cool, moist marine type climate or during the cool moist growing weather of spring and fall in temperate zones. It has been outstanding in tests in the northeastern states and the Pacific northwest. It has also been promising in the north central states, but further testing is needed in this area. The cold, heat and drought tolerance of Manhattan has been slightly better than most other ryegrass varieties. It retains good color longer into the early winter and greens up early in the spring.

Characteristics: Manhattan exhibits good density with significantly more shoots and leaves per square inch than other ryegrass varieties. It has an attractive, dark green color and blends better with the Kentucky bluegrasses than most other ryegrasses. The growth habit is a leafy, moderately low growing type with a slower rate of vertical growth than any other currently available ryegrass variety. The leaf texture is somewhat finer than other available ryegrass varieties. Manhattan exhibits profuse tillering under favorable conditions with moderate spreading ability. The decumbent stems may root at the nodes. Its rate of establishment is excellent, comparable to other ryegrass varieties. Manhattan exhibits less injury to snow mold than most ryegrasses. It is moderately susceptible to rust and has above average resistance to large brown patch and *Fusarium* compared with the other ryegrass varieties. Thatching has been no problem in tests to date. The wear tolerance of Manhattan is excellent during the cool periods of fall and spring.

Use and Management Requirements: Manhattan is valuable for use on sports turfs receiving heavy traffic during the spring and fall where rapid reestablishment of good turf is important. A cutting height of one and one-half to two inches appears optimum. However, plots being mowed at 3/4 to one inch are doing well. Manhattan will tolerate moderately acid, sandy or poor soils but does best where properly limed and fertilized. It will also tolerate moderate summer droughts without irrigation if not fertilized excessively.

Name: COUGAR KENTUCKY BLUEGRASS (*Poa pratensis* L.)

Development: Selection made by A.G. Law and J.L. Schwendiman of the Washington Agricultural Experiment Station. The original selection was made from a Denmark plant introduction. The variety was released in 1965 and became commercially available in 1966. It has been under evaluation for eight years in locations throughout the United States, Canada and Europe.

Adaptation: Cougar is well adapted to the inland empire region of the Pacific northwest and to Kansas, Iowa and Missouri. The cold, heat, drought and shade tolerance of Cougar are comparable to Merion.

Characteristics: Cougar has a very rapid establishment rate with emergence occurring in four to seven days in comparison to 10 to 14 with Merion. Under high fertility it possesses a superior density in comparison with Merion. Cougar has a dark green color and will remain dark green for two to three weeks later in the fall than Merion. Its growth habit is a low growing, strongly rhizomatous type possessing many tillers. Cougar has a comparatively high rate of thatch formation. It is resistant to powdery mildew and leaf rust but is quite susceptible to leafspot. The wear tolerance is similar to Merion.

Use and Management Requirements: Cougar is used for recreational areas which receive heavy use including tees, fairways, athlectic fields and parks. Cougar forms an excellent turf at cutting heights of one-half to one inch. It responds to high nitrogen fertility levels of from six to eight pounds of nitrogen per 1,000 square feet per year. Also, it responds to higher irrigation levels.

This is the first of a three part series on new grass developments. □