

Bentgrasses: Past, Present and Future

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Not long ago, the golf course superintendent had very few choices of creeping bentgrasses for new green construction or overseeding of existing putting greens. Since 1987, the choices seem to have grown exponentially. Because of the introduction of so many new bentgrasses, knowing which bents do what, where and for whom is getting to be a full time job in itself.

So how is a superintendent to keep up with the barrage of new varieties entering the bentgrass market? Study, study, study. Perhaps the next few paragraphs will provide you with a brief guide to the bentgrass market's past present, and possible future.

The Past

As golf was emerging on the North American continent, the only bentgrass seed for greens available to the market was the South German Bentgrass. This was little more than a collection of *Agrostis* sp. seed from southern Germany that was cleaned and resold.

The purchaser of this seed was likely to get a wide range of plant materials from creeping to colonials, highlands to redtops, to velvet bentgrasses.

The first improvements to bentgrass putting greens took off in two directions: vegetative selections and improved seeded varieties. After 1920, several vegetative varieties became available to the market. Among those were Toronto, Cohansey, Washington and Pennpar. Although these varieties were fairly uniform, regional adaptation and the lack of genetic diversity limited their long term success.

The first improved, seeded variety of creeping bentgrass in the U.S. was "Seaside" in 1923. This was significant to the market because Seaside was more uniform than the South German seed sources. Also, an improved seeded variety was significant because the seed could be shipped and stored more easily than vegetatively propagated varieties. By modern standards, little or no advancement in disease resistances, color uniformity, or wear tolerance was bred into this variety.

The next (and undoubtedly) significant development in the U.S. creeping bentgrass

market came with the release of Penncross in 1954 from Penn State University. Penncross was something of a hybrid of the two production philosophies. In order to maintain the uniformity of the variety, three genetically different plant materials were vegetatively planted in the production field, grown to seed, and harvested.

This production process brought to the market a relatively uniform variety. Penncross would only segregate in to 3 different colors, textures and growth habits. It was coarse, aggressive and susceptible to nearly every disease of putting green turf. However, Penncross's adaptability, persistence, popularity and impact on the market allowed it to become the industry standard until the late 1980's.

The Penn State breeding program, realizing that Penncross tended to be too thatchy for fairway use, bred and released 'Penneagle primarily for fairway use in 1978. This was significant because it marked the first time that a variety had been developed for a specific use. Although Penneagle has been used on putting surfaces, it is best suited to fairway use.

The Present

At the end of the 1960's, several university breeding programs were working hard to improve creeping bentgrasses in North America. Researchers were making improvements in disease resistance, darker color, finer texture, reduced thatch accumulation and greater traffic tolerance.

In 1986, the floodgates opened to several new varieties. Among the most significant entries to the market were 'SR 1020', 'Providence' (SR 1019), and Pennlinks. Each was developed for a specific purpose, and have lead the way for further generations of bentgrass variety development.

SR 1020 - Developed by Dr. William Kneebone at the University of Arizona. SR 1020 was nearly 20 years in the making. Dr. Kneebone collected and evaluated bentgrass germplasm from across the southern tier of the U.S., looking for a putting green variety that would be extremely heat, drought and wear tolerant. SR 1020 was bred to be

very fine textured and upright to reduce the need for mechanical grooming and increased putting speeds at higher mowing heights. Furthermore, Dr. Kneebone's breeding and evaluation process produced an extremely uniform 5-clone synthetic variety. By the selection of five very dark green and texturally similar clones, SR 1020 has almost no segregation, unlike its seeded predecessors.

Although it was released in 1986 as the first creeping bentgrass developed specifically for the southern U.S., over the past eight years SR 1020 has proven that its range of adaptation is not so limited. SR 1020 has been a top performer in the far south from Georgia to Texas to Arizona to California. It has also been very successfully managed well north of the Mason-Dixon line, and continues to perform well throughout the Midwest and Great Plains states.

PROVIDENCE (SR 1019) - Providence creeping bentgrass was developed at the University of Rhode Island by Dr. Richard Skogley. Like Dr. Kneebone with the University of Arizona breeding program, Dr. Skogley spent nearly 20 year's collecting bentgrasses from Old South German greens throughout the Northeast. The result of Dr. Skogley's hard work and patience has been one of the market's most uniform, dark green and upright varieties to date. Because of its extensive evaluation under a wide variety of disease pressures, Providence has shown extremely good resistance to all major turfgrass diseases. In addition, Providence's fine texture and upright growth has made it a very fast putting surface that is very resistant to spiking.

Over the last three years, the 5-clone synthetic Providence has been the #1 creeping bentgrass in all three NTEP bentgrass trials (Modified Green, Native Soil Green, and Fairway/Tee).

PENNLINKS - Just as Penneagle had been developed to replace Penncross for fairway use, so too was Pennlinks developed to surpass Penncross's performance on greens. Pennlinks was developed by Dr. Joe Duich at Penn State University and released in

1986. Pennlinks has produced very good putting surfaces under a wide variety of growing conditions. Although it is more upright and uniform than Penncross, Pennlinks is not quite as fine textured, upright, dark green and uniform as other varieties available on the market.

PUTTER - Developed at Washington State University by Drs. Stan Braun and Roy Goss, Putter is a 2 clone synthetic developed primarily for Take-All Patch resistance. Putter is one of the darker varieties on the market with a fairly fine leaf texture. Putter had done well at putting green height, and has shown good heat tolerance in transitional climates.

COBRA - Cobra was developed at the New Jersey Agricultural Experiment Station by Dr. Ralph Engle. It is a 7-clone synthetic with very good leaf spot resistance and a less thatchy growth habit. The latter has made Cobra a good fairway grass. Cobra has been highly rated in California and Texas NTEP sites.

CRENSHAW (Syn 3-88) - Developed by Dr. Milt Engelke of Texas A&M and Dr. Virginia Lehman of Lofts Seed Company, Crenshaw is a 6-clone synthetic developed out of many of the same materials that brought SR 1020 to the market (in fact 3 of the 6 clones are believed to be in common with SR 1020).

Developed in the 1980's on heat benches at the Texas Agricultural Station in Dallas, Crenshaw was bred to have excellent heat and drought resistance. It is fairly finely textured, aggressive and dark green. Crenshaw seems to perform best in climates with prolonged heat and drought seasons.

Crenshaw was not entered into the 1989 NTEP National Bentgrass Test. Until the results from the 1994 plantings are published, there is no NTEP data for either Crenshaw or its sister, Cato.

CATO - Like its sister, Crenshaw, Cato was developed by Drs. Eugelke and Lehman at the Texas Agriculture Experimental Station in Dallas. Cato produces a fairly fine textured, dark green turf, while exhibiting more Dollar Spot resistance than Crenshaw.

SOUTHSHORE - Dr. Reed Funk at Rutgers University and Dr. Richard Hurley of Lofts Seed Company developed Southshore after collecting hundreds of plant materials from the Mid-Atlantic states.

Palmer, Nicklaus Outings Lead Auction Items

Far Hills, NJ—A round of golf for four at Bay Hill Club and Lodge in Orlando, Fla. with Arnold Palmer, and golf and dinner with Jack Nicklaus, headline the 15 live auction items to be offered on June 13 at the "Auction of the Century"; in New York City, to commemorate the United States Golf Association's 100th anniversary.

Golf Magazine, in cooperation with the USGA and Christie's Auction House, will hold a black-tie dinner and auction in The Grand Ballroom of the Waldorf-Astoria Hotel. A collection of one-of-a-kind golf treasures and fantasy experiences has been assembled for this evening with one hundred percent of the proceeds designated to various charities selected by the donors.

The Bay Hill outing includes transportation to and from Florida, a tour of the Golf Channel studios and a live on-air appearance. Nicklaus has donated his time for golf and dinner (for up to eight people) followed or preceded by seven days of golf at Nicklaus courses around the United States, all-expenses paid.

Other live auction items confirmed at this time include a VIP golf ticket package (four tickets apiece to the 1995 Ryder Cup matches, 1996 Masters, 1996 U.S. Open (Shinnecock Hills) or 1996 U.S. Open (Oakland Hills), 1995 British Open (St. Andrews) or 1996 British Open (Royal Lytham) and the 1995 PGA Championship (Riviera) or 1996 PGA Championship (Valhalla). Also offered is a framed tableau of 49 signed final-round scorecards (reproductions with original signatures) from U.S. Open champions.

Christopher Burge, chairman of Christie's, will conduct the live auction. A silent auction

of golf art and memorabilia will take place during a cocktail reception. Proceeds will benefit the USGA Foundation.

Updated lists of auction items will appear in Golf Magazine, Golf Journal and Met Golfer throughout the next few months. Item and ticket information are available by calling 1-800-393-USGA.

Southshore's 200+ clones exhibit a medium green, medium textured growth with improved Brown Patch resistance. Although test plots of Southshore have been planted along side the NTEP bentgrass trials at Rutgers, Southshore was not entered in the 1989 NTEP National Bentgrass Test.

The Future

No longer does the golf course superintendent need to settle for just one choice of bentgrass. It appears that there will be many more new varieties released over the next several years. Many of these varieties will need to be looked at very carefully to determine their range of adaptation, disease tolerance, management requirements, and their durability under play.

Not all of these new varieties have been entered into the NTEP's. Great caution should be taken when reviewing non-NTEP research data. With more and more varieties appearing in the marketplace each year, first hand knowledge may be the best way to select your next creeping bentgrass.

The challenges facing the seed industry, are similar to those facing the superintendent. We are working to provide creeping bentgrasses that require less mechanical management, fewer irrigation, pesticide and fertilizer inputs, while providing excellent playing surfaces. Our work has only just begun.

A Newsletter Change

You may notice that your newsletter does not always arrive prior to a monthly meeting. When it doesn't there has been a meeting notice flyer sent.

Often the newsletter may be ready but the meeting cost or times have not be finalized; or the newsletter isn't ready in time to meet a printing deadline required to mail in time for the meeting.

To get away from the editing crunch associated with meeting quick deadlines prior to a meeting we are working to provide meeting information in both the newsletter and through flyers. Look for the same number of newsletters (10 each year), but there will be flyers sent out at various times to help with the meeting coordination. This will assist in allowing for a better quality newsletter.