



REAL FEDERACIÓN ESPAÑOLA DE GOLF



TRES CANTOS GRASS SELECTION

There is a lot of information about bentgrass trials in the NTPE. Also, it is possible to find information about agrostis palustris cultivars in the AGCSA , GCSAA, etc. However, we do not have any information about bentgrass trials in Spain. The only information that we have is the experience that the Spanish greenkeepers have with the management of their greens. There are not many new golf courses in Madrid. The bentgrass cultivar seeded in the new golf course have been :

L-93 at Banco Santander Golf Course.

Brighton (SRX 1120) at Centro Nacional de Golf.

T1 at El Encín and at Los Angeles de San Rafael Golf Course.

The Green keeper at Banco Santander has been doing interseeding with G2 in the L-93 greens. The L-93 quality was not good enough for the owner expectation.

The greenkeeper at Centro Nacional de Golf is very happy with the Brighton quality and performance. However, the Brighton fall density and the fall color are not very good.

The greens seeded with T1 are not open yet. So, we only have some information about some problems with the establishment and with diseases.

There is some much information about turfgrass quality ratings for bentgrass cultivars that is very difficult to select the information that you need to choose the best cultivar for you golf course.

The weather in Madrid could be similar to the weather in some areas in the transition zone in USA. The following is a list of the best cultivars for putting green in at least five of ten transition zone evaluation sites, 1998-2000, and at least six of eleven transition zone sites, 1993-1997, of the national Turfgrass Evaluation Program:

Cato Penn A-2 Penn G-2

L-93 Penn A-4 Penn G-6

Penn A-1.

This list of cultivars, except Cato and G-2, are ranked in the top six in the summary of turfgrass quality ratings for bentgrass cultivars in the 1998 National Bentgrass (Putting Green) Test.



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APPENDIX TABLE. SUMMARY OF TURFGRASS QUALITY RATINGS FOR BENTGRASS CULTIVARS
IN THE 1998 NATIONAL BENTGRASS (PUTTING GREEN) TEST */
1999-2002 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF **/

NAME	STATISTICS FOR ALL LOCATIONS						
	ALL LOCATIONS		SUM OF RANKS 3/	RANK 4/	HIGHEST RANK 5/	LOWEST RANK 6/	MAXIMUM IN TOP 25% 7/
	MEAN 1/	RANK 2/					
ABT-CRB-1	5.8	17	415	21	4	28	8.3
BACKSPIN	5.7	24	494	25	15	27	0.0
BAR CB 8US3	5.8	21	412	20	1	28	16.7
BAVARIA	4.0	29	690	29	27	29	0.0
BENGAL (BAR AS 8FUS2)	6.1	10	285	10	2	27	25.0
BRIGHTON (SRX 1120)	5.8	18	391	15	5	26	8.3
CENTURY	5.9	15	402	18	2	27	8.3
CRENSHAW	5.7	22	423	22	5	26	12.5
IMPERIAL	5.9	14	379	14	4	25	4.2
ISI AP-5	6.0	12	305	12	2	25	16.7
L-93	6.2	5	193	5	1	25	50.0
PENN A-1	6.4	1	144	1	1	28	79.2
PENN A-2	6.3	4	172	3	1	24	58.3
PENN A-4	6.3	2	176	4	1	25	70.8
PENN G-1	6.3	3	154	2	1	14	62.5
PENN G-6	6.1	6	269	7	2	25	37.5
PENNCROSS	5.2	27	553	27	2	28	4.2
PENNLINKS	5.3	26	558	28	7	28	4.2
PICK CB 13-94	5.8	20	408	19	8	26	0.0
PROVIDENCE	5.7	23	468	24	3	28	4.2
PST-A2E	6.1	7	278	8	1	26	41.7
SR 1119	5.8	16	393	17	3	24	16.7
SR 7200	5.1	28	495	26	1	29	20.8
SRX 18PAA	5.8	19	392	16	4	27	12.5
SRX 1N1H	5.9	13	359	13	3	29	25.0
SYN 96-1	6.1	9	260	6	1	21	29.2
SYN 96-2	6.1	11	288	11	1	25	29.2
SYN 96-3	6.1	8	280	9	1	26	25.0
VESPER (PICK MVB)	5.3	25	428	23	1	28	29.2
LSD VALUE	0.2						
C.V. (%)	8.9						

- */ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).
- **/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.
- 1/ MEAN - AN AVERAGE OF ALL THE TURFGRASS QUALITY RATINGS FROM ALL LOCATIONS.
- 2/ RANK - RANKING OF THE MEAN OF ALL QUALITY RATINGS.
- 3/ SUM OF RANKS - A SUM OF ALL THE RANKINGS FROM THE VARIOUS LOCATIONS.
- 4/ RANK - THE RANKING OF THE SUM OF RANKS.
- 5/ HIGHEST RANK - THE HIGHEST RANKING ACHIEVED BY THAT ENTRY AT ANY ONE LOCATION.
- 6/ LOWEST RANK - THE LOWEST RANKING ACHIEVED BY THAT ENTRY AT ANY ONE LOCATION.
- 7/ MAXIMUM IN TOP 25% - THE PERCENTAGE OF LOCATIONS WHERE THAT ENTRY FINISHED IN THE TOP 25% OF ALL ENTRIES.

So, the best bentgrass cultivars for the putting greens at Tres Cantos could be Penn A-1, Penn A-2, Penn A-4 and Penn G-6.

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APPENDIX TABLE. SUMMARY OF TURFGRASS QUALITY RATINGS FOR BENTGRASS CULTIVARS
GROWN ON A GREEN */
2004-07 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF **/

NAME	QUALITY	MAXIMUM
	MEAN 1/	IN TOP 25% 2/
007 (DSB)	6.4	41.7
13-M	6.2	25.0
ALPHA	6.0	16.7
AUTHORITY (235050)	6.4	37.5
BENCHMARK DSR	6.1	25.0
BENGAL	6.0	8.3
COBRA 2 (IS-AP 9)	6.2	29.2
CY-2	6.4	37.5
DECLARATION	6.4	41.7
GREENWICH	5.2	8.3
INDEPENDENCE	6.2	16.7
KINGPIN (9200)	6.1	12.5
LEGENDARY	5.2	12.5
LS-44	6.2	37.5
MACKENZIE (SRX 1GPD)	6.3	25.0
MEMORIAL (A03-EDI)	6.3	41.7
PENN A-1	6.2	12.5
PENNCROSS	5.1	12.5
PENNLINKS II	5.6	12.5
SHARK (23R)	6.4	45.8
SR 7200	4.9	8.3
T-1	6.1	20.8
TYEE (SRX 1GD)	6.4	37.5
VENUS (EFD)	5.2	8.3
VESPER	5.0	4.2
VILLA (IS-AC 1)	5.3	12.5
LSD VALUE	0.2	
C.V. (%)	9.0	

*/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

**/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

1/ MEAN - AN AVERAGE OF ALL THE TURFGRASS QUALITY RATINGS FROM ALL LOCATIONS.

2/ MAXIMUM IN TOP 25% - THE PERCENTAGE OF LOCATIONS WHERE THAT ENTRY FINISHED IN THE TOP 25% OF ALL ENTRIES.

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TABLE 7A. MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS
GROWN ON A GREEN AT PINEHURST RESORT GOLF COURSE IN PINEHURST, NC 1/
2009 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	SPRING GREENUP	DENSITY SUMMER	DENSITY FALL	WINTER COLOR	MAY	JUN	JUL	QUALITY RATINGS					NOV	DEC	MEAN
MVS-AP-101	8.0	8.3	7.7	5.7	8.0	7.0	8.3	7.7	7.7	8.0	7.7	8.0	7.8		
PST-OJO	6.7	8.3	8.7	6.0	7.7	6.3	7.7	7.3	8.3	8.3	8.0	8.0	7.7		
LTP-FEC	7.7	8.7	7.0	7.0	8.0	7.3	8.3	7.0	7.3	7.7	7.7	7.7	7.6		
PIN-UP (HTM)	7.7	8.3	7.7	7.3	7.7	7.0	8.0	7.3	8.0	7.3	7.7	7.7	7.6		
A08-TDN2	7.0	7.7	8.0	7.3	7.3	7.0	8.0	7.3	7.7	7.3	7.3	7.3	7.4		
V8	7.7	8.3	8.0	7.0	7.7	8.0	8.0	6.3	7.0	7.7	7.3	7.3	7.4		
T-1	7.0	8.3	8.0	7.0	7.3	8.0	7.7	6.3	8.0	8.7	6.3	6.3	7.3		
DECLARATION	7.3	8.0	7.3	6.0	7.3	7.3	7.7	6.0	7.0	7.3	7.3	7.3	7.2		
AUTHORITY	6.3	7.3	7.3	7.3	7.3	7.3	7.3	5.7	7.3	7.3	7.0	7.0	7.0		
SRP-1GMC	7.7	8.3	7.0	6.7	7.3	7.3	8.0	5.3	7.7	7.3	6.7	6.7	7.0		
AFM	6.7	7.3	7.0	6.3	7.0	6.7	7.0	6.0	7.3	6.7	6.7	6.7	6.8		
SRP-1BLTR3	5.7	7.0	7.7	6.7	6.7	6.3	6.0	6.0	7.0	6.7	6.3	6.3	6.4		
ALPHA	6.0	7.3	6.7	6.0	6.3	6.0	6.7	5.7	6.7	6.3	6.3	6.0	6.3		
PENN A-1	6.0	6.0	7.0	7.0	7.0	5.7	5.7	5.3	6.7	6.3	6.0	6.0	6.1		
L-93	5.7	5.7	6.7	6.7	6.0	6.0	5.7	4.7	6.0	6.0	6.7	6.3	5.9		
PENN A-2	5.7	4.0	6.3	6.0	5.3	5.7	4.3	4.3	6.3	6.3	5.7	5.7	5.5		
VILLA	4.7	8.7	8.7	8.0	5.7	4.3	5.3	3.3	4.7	4.7	6.7	6.0	5.1		
SR 7200	5.0	7.7	8.7	8.0	5.7	4.3	4.7	3.3	4.3	4.7	6.0	5.7	4.8		
PENNCROSS	5.0	4.0	5.3	4.0	4.7	3.7	4.0	3.3	4.7	4.0	4.0	4.0	4.0		
LSD VALUE	0.8	1.0	0.8	1.0	0.8	1.3	1.2	2.4	0.9	0.7	0.9	0.9	0.6		
C.V. (%)	8.1	8.9	7.0	9.1	7.9	12.7	11.5	22.9	8.5	7.1	8.7	8.6	6.4		

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.



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T-1 could also be a good cultivar for the putting greens at Tres Cantos. The quality mean for T-1 in the summary of turfgrass ratings for bentgrass cultivars grown on a green, 2004-2007, is 6,1. The quality mean for Penn A-1 is 6,2. There are not significant differences. However, there are significant differences among Penn A-1 and T-1 at Pinehurst (North Carolina), 2009. T-1 quality mean is 7,3. The quality mean of Penn A-1 is 6,1 , and the quality mean of Penn A-2 is 5,5.

We could observe the T-1 quality at “El Encín”. The Madrid Master could be hosted at “ El Encín”. If this tournament is played there, we will see the real quality of T-1 bentgrass cultivar under stress championship conditions.

At this moment, we think that the best agrostis palustris cultivars for the putting greens at Tres Cantos are Penn A-1, Penn A-2, Penn A-4 and Penn G-6.

Aurora Gold is a Glyphosate- Tolerant Hard Fescue that produces a dark green, fine leafed, dense, low-growing turf of excellent quality. Aurora Gold excels where mowing, water, and fertilization requirements are low or non-existent. Aurora Gold should be used as a monostand to take advantage of its glyphosate tolerance. However, The Scotts information about Aurora Gold does not say anything about glyphosate tolerance. Also, It says that Aurora Gold mixes well with Seabreeze and Florensate for superior weed control.

The secondary roughs or extreme roughs at Banco Santander Golf Course were seeded with Aurora Gold. Glyphosate, at low rates, is used for weed control. It could be interesting to visit Banco Santander Golf Course to see Aurora Golf natural areas, and also how is working the G-2 interseeding at L-93 putting greens.

We think that Aurora Gold could be a very good grass for the extreme roughs at Tres Cantos because the dark green color, excellent cold tolerance and good heat tolerance.

Departamento de la Green Section
Federación Española de Golf

