



Sub-Freezing Temperatures Challenge Bermudagrass Survival

January 2014

TWarm-season grasses, better adapted to the South, will have a tough time surviving the arctic cold that has crept across the United States.

However, improvements in bermudagrass varieties such as 'Latitude 36', 'Northbridge' and 'Patriot' should be up to the challenge. With financial support from the USGA, plant breeders at Oklahoma State University have specifically developed these varieties to survive periods of sub-freezing temperatures.



Winterkill is a relative term where part of a grass plant or entire turfgrass stand dies during the winter. (Green Section)

The cold-hardy bermudagrasses are ideal for use in parts of the eastern, western and southern United States for golf course fairways and tees, sports fields, commercial grounds and residential lawns, in part, because of its excellent traffic tolerance and recuperation rate once it is damaged.

Tested for seven years at Oklahoma State University before entering a national testing phase, Latitude 36 and Northbridge then underwent rigorous independent evaluation by researchers at land-grant universities across the southern and central transition zone of the United States. At the conclusion of the 2007-2012 [National Turfgrass Evaluation Program \(NTEP\)](#) bermudagrass trials, Latitude 36 claimed overall top honors, beating out many strong competitors.

Of particular importance is the performance for these grasses in sub-freezing, winter conditions. Percent winterkill data was collected at Oklahoma State University and Virginia Tech University (see Table 1) after the 2009-10 winter. During that winter, freezing temperatures were much below normal for the south and central U.S. (see Figure 1). The good news is that several bermudagrass varieties survived the arctic blast.

Table 1. Percent Winterkill Ratings of Bermudagrass Cultivars. (Adapted from 2007-12 National Bermudagrass Test Data, National Turfgrass Evaluation Program)¹

Name	Company	Establishment	Locations ^{2,3}		Mean
			Okl.	Va.	
SWI-1117	Seeds West	seeded	94.0	58.3	76.2
* NUMEX-SAHARA	Pennington Seed	seeded	94.5	40.0	67.3
* VERACRUZ	Seed Research/Pickseed	seeded	63.3	63.3	63.3
* SUNSPORT	LESCO John Deere	seeded	86.0	38.3	62.2
* PRINCESS 77	Pennington Seed	seeded	73.0	50.0	61.5
SWI-1057	Seeds West	seeded	73.3	41.7	57.5
PSG 91215	Pickseed USA	seeded	85.0	25.0	55.0
SWI-1113	Seeds West	seeded	65.0	40.0	52.5
PSG 94524	Pickseed USA	seeded	79.7	18.3	49.0
IS-01-201	DLF International Seeds	seeded	65.0	26.7	45.8
* GOLD GLOVE (PST-R6FLT)	The Scotts Company	seeded	60.0	23.3	41.7
* PYRAMID 2 (IS-CD10)	DLF International Seeds	seeded	78.3	5.0	41.7
SWI-1081	Seeds West	seeded	66.3	10.0	38.2
SWI-1070	Seeds West	seeded	63.3	8.3	35.8
SWI-1083	Seeds West	seeded	54.7	15.0	34.8
SWI-1122	Seeds West	seeded	51.7	11.7	31.7
* ROYAL BENGAL (PSG 9BAN)	Seed Research of Oregon	seeded	40.0	15.0	27.5
PSG PROK	Seed Research of Oregon	seeded	41.7	10.0	25.8
PSG 9Y2OK	Seed Research of Oregon	seeded	31.7	0.0	15.8
* TIFWAY	Standard Entry	vegetative	16.7	6.7	11.7
PREMIER	Standard Entry	vegetative	23.3	0.0	11.7
BAR 7CD5	Barenbrug USA	seeded	21.7	0.0	10.8
OKS 2004-2	Oklahoma Ag. Expt. Station	seeded	16.7	0.0	8.3
RAD-CD1	Desert Sun Marketing, Inc.	seeded	16.7	0.0	8.3
* HOLLYWOOD (J-720)	Jacklin Seed by Simplot	seeded	15.0	0.0	7.5
* RIVIERA	Johnston Seed Company	seeded	11.7	0.0	5.8
* MIDLAWN	Standard Entry	vegetative	11.0	0.0	5.5
* PATRIOT	Oklahoma Ag. Expt. Station	vegetative	6.7	0.0	3.3
* NORTHBRIDGE	Sod Solutions	vegetative	5.3	0.0	2.7
* LATITUDE 36	Sod Solutions	vegetative	5.0	0.0	2.5
* YUKON	Seed Research of Oregon	seeded	3.0	0.0	1.5
LSD VALUE			31.6	13.5	17.1
C.V. (%)			42.5	51.3	48.1

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.
³ Percent winterkill rated in 2010 only.
* Commercially Available.

Dec 2009 - Feb 2010 Divisional Ranks

National Climatic Data Center/NESDIS/NOAA

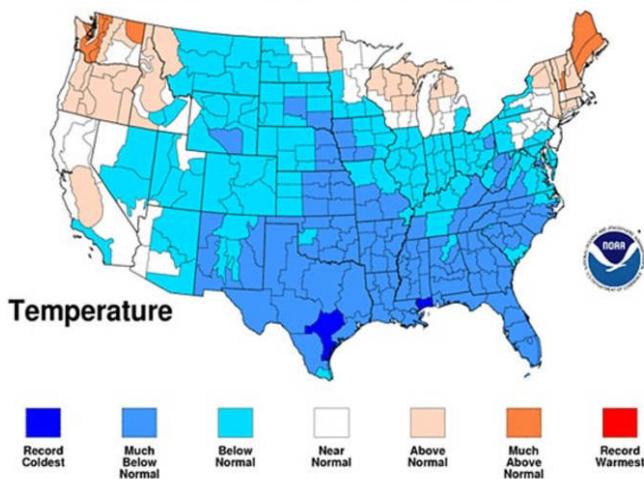


Figure 1

Table 1

Additional Information:

[2007 National Bermudagrass Test](#)

[Winterkill 2010](#)

[Bermudagrass freeze tolerance](#)

[Winter 2009-2010 Climate Summary](#)