

Trade Show Presentation: Establishment of No-mow, Low-input Grasses for Naturalized Golf Course Roughs

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Objectives:

Trials were conducted to evaluate the establishment of native and naturalized grasses as a low-maintenance area on a Central California golf course.

Materials and Methods:

A cool-season grass variety trial was seeded 30 October 2017 at 30 PLS/ft² in Fresno. Irrigation was not limited during establishment, and no additional irrigation was provided after April 2018. Entry list for the cool-season grass trial is in Table 1. A warm-season grass variety trial was seeded on 6 June 2018 at 30 PLS/ft² in Fresno. Irrigation as not limited during establishment. Deficit irrigation began August 20, at 30% ETo replacement every 10 days. Entry list for the warm-season grass trial is in Table 2.

Broadleaf weeds were controlled with 3 sequential applications of Speedzone Southern (2,4-D, dicamba, MCPP, carfentrazone) on both trials. Data was collected to measure establishment success and playability. Metrics for establishment and playability included: plant density (established plants/area), seedhead density, Normalized Difference Vegetation Index (NDVI), and stand height.

Results:

Data is presented for stand height and plant density.

Acknowledgments:

Thanks to USGA for supporting this research.

Table 1. Cool-season grasses seeded fall 2017 in Fresno.

Name	Species	
Spike bentgrass	<i>Agrostis exarata</i>	*
Dune bentgrass	<i>Agrostis pallens</i> 'Camp Pendleton'	*
California brome	<i>Bromus carinatus</i>	*
Tufted hairgrass	<i>Deschampsia cespitosa</i>	*
Sheep fescue	<i>Festuca ovina</i> 'Bighorn'	
Hard fescue	<i>Festuca longifolia</i> 'Predator'	
Molate fescue	<i>Festuca rubra</i> 'Molate'	*
Chewings fescue	<i>Festuca rubra</i> ssp. <i>commutata</i> 'Heathland'	
Prairie junegrass	<i>Koeleria macrantha</i>	*
Purple needlegrass	<i>Stipa pulchra</i>	*

*California native

Table 2. Warm-season grasses seeded summer 2018 in Fresno.

Name	Species	
Purple threeawn	<i>Aristida purpurea</i>	*
Buffalograss	<i>Buchloe dactyloides</i> 'SWI 2000'	
Sideoats grama	<i>Bouteloua curtipendula</i>	*
Blue grama	<i>Bouteloua gracilis</i>	*
Bermudagrass	<i>Cynodon dactylon</i> blend of 'Princess' and 'Arden 15'	
Weeping lovegrass	<i>Eragrostis curvula</i>	
Big galleta	<i>Hilaria rigida</i>	*
Deer grass	<i>Muhlenbergia rigens</i>	*
Little bluestem	<i>Schizachyrium scoparium</i>	
Alkali sacaton	<i>Sporobolus airoides</i>	*

*California native

Table 3. Density and stand height of cool-season grasses. Data collected 7 months after seeding. Means followed by the same letter in a column are not significantly different (P=0.05).

Species	Density (plants/ft ²)	Stand height (inches)
<i>Stipa pulchra</i>	18.7 A	23.8
<i>Festuca longifolia</i>	18.2 A	2.1
<i>Festuca rubra</i>	18.1 A	2.9
<i>Deschampsia cespitosa</i>	17.6 A	2.0
<i>Festuca rubra</i> ssp. <i>commutata</i>	16.2 A	1.8
<i>Agrostis exarata</i>	14.5 AB	21.6
<i>Bromus carintus</i>	14.4 AB	29.3
<i>Agrostis pallens</i>	10.8 BC	13.9
<i>Koeleria macrantha</i>	7.9 C	3.1
<i>Festuca ovina</i>	0.4 D	2.3

Table 4. Density and stand height of warm-season grasses. Data collected 3 months after seeding. Means followed by the same letter in a column are not significantly different (P=0.05).

Species	Density (plants/ft ²)	Stand height (inches)
<i>Buchloe dactyloides</i>	23.5 A	5.1
<i>Cynodon dactylon</i>	20.7 AB	4.5
<i>Astridia purpurea</i>	16.0 BC	17.0
<i>Eragrostis curvula</i>	15.4 BC	30.4
<i>Schizachyrium scoparium</i>	14.2 BC	5.0
<i>Sporobolus airoides</i>	13.7 C	14.8
<i>Bouteloua gracilis</i>	13.3 C	16.5
<i>Hilaria rigida</i>	10.9 CD	8.9
<i>Bouteloua curtipendula</i>	5.9 DE	16.9
<i>Muhlenbergia rigens</i>	1.0 E	8.1