

STOP #4b: Delta Bluegrass Sod Under Deficit Irrigation

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Objectives

Assessing quality of California native sodded cool-season mixes during the summer under a deficit irrigation regime.

Material and Methods

- a. Entries (following pages) were sodded in late October 2013.
- b. 2.0 lbs N/M and non-limiting irrigation during establishment.
- c. The area is divided in three independent separate studies: native sod, no mow sod, and tall fescue mixes sod.
- d. Native sod and tall fescue mixes sod are mowed weekly at 4 inches.
- e. On 30 May 2014 irrigation was turned off. Plots were then watered by hand 3X weekly to replace 60% CIMIS ETo.
- f. Plots rated every two weeks for quality (1-9 scale, 9 = best) and digital image analysis

Results

Quality ratings dropped below an acceptable level of 6 for all of the native (mowed and unmowed) grasses 14 days after the deficit irrigation was initiated. After six weeks of deficit irrigation, and throughout the remainder of summer, native bentgrass was the sodded species showing the lowest quality ratings. No differences were detected between the other sodded species (Figure 1).

Bolero mix quality was the highest at the beginning of the drought, but decreased significantly after one month of deficit irrigation (Figure 1).

Delta Bluegrass Native and No Mow Sod Deficit Irrigation Study

No.	Product/Species/Variety	Company
1	Delta Native Mow Free Mix <ul style="list-style-type: none"> ➤ <i>Festuca rubra</i> Molate 40% - Red Fescue ➤ <i>Festuca occidentalis</i> 30% - Western Fescue ➤ <i>Festuca idahoensis</i> 30% - Idaho Fescue 	Delta Bluegrass Company
2	Delta Native Biofiltration Mix <ul style="list-style-type: none"> ➤ <i>Stipa pulchra</i> - Purple Needlegrass ➤ <i>Festuca rubra</i> Molate – Red Fescue ➤ <i>Hordeum californicum</i> – California barley ➤ <i>Hordeum brachyantherum</i> – Meadow barley 	Delta Bluegrass Company
3	Delta Preservation Mix <ul style="list-style-type: none"> ➤ <i>Nassella cernua</i> - Nodding needlegrass ➤ <i>Nassella pulchra</i> - Purple needlegrass (California's State Grass) ➤ <i>Koeleria macrantha</i> – Junegrass ➤ <i>Festuca rubra</i> Molate – Red Fescue 	Delta Bluegrass Company
4*	Delta Native Bentgrass <ul style="list-style-type: none"> ➤ <i>Agrostis pallens</i> 	Delta Bluegrass Company

*Not included in the no mow study

UCR Delta Sod Tall Fescue Mixes Deficit Irrigation Study

1	Delta Bolero Mix	Delta Bluegrass Company
2	Delta 90/10 Fescue/Blue Mix	Delta Bluegrass Company

UCR Delta Bluegrass Sod Plot Plan

No Mow

101	1	102	3	103	2
201	3	202	1	203	2
301	2	302	3	303	1

Native grasses

101	3	102	4	103	1	104	2
201	4	202	3	203	2	204	1
301	2	302	1	303	4	304	3

Tall fescue mixes

101	1A	201	1B	301	2A
102	2C	202	2B	302	1C



Figure 1. Quality of native (A), no mow (B) and tall fescue (C) sod mixes under irrigation replacement at 60% ETo.

