

Stop #2: Evaluation of Products for Turfgrass Water Conservation Using a Linear Gradient Irrigation System (LGIS)

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Objectives:

1. Determine effective irrigation and chemical management practices to reduce water use.
2. Evaluate the ability of products to maintain acceptable turf quality under reduced water use.

Methods:

The LGIS area was sodded with 'Tifway II' bermudagrass on 7 August 2012. Areas of each plot that receive 10, 25, 55, 60, 65, 70, 75, 80, and 85% Eto were determined using catch cans to capture irrigation water. This procedure was repeated and validated every two weeks during the experiment. All treatments were applied initially on 5 April 2013. Every two weeks, plots were evaluated for turf quality, NDVI (measure of greenness), volumetric soil water content, and surface temperature in the irrigation zones representing 10 to 85% Eto.

Treatments:

See Table 1.

Results:

No treatment differences were found with respect to drought response. Although chemical treatment differences are not yet detected in any of the ratings collected, ET has a significant effect on turf quality and NDVI. In fact, the ratings differ when ET drops below 55%, with the 25% and the 10% ET treatment showing the lowest NDVI and soil moisture.

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Table 1. List of chemicals used in the LGIS study.

No.	Treatment	Type	Dosage (oz./M)	Application Interval (Days)
1	UCR006P		5.88	14
2	UCR006P		7.35	14
3	UCR006P		8.82	14
4	UCR006P		11.75	14
5	Recovery Rx	Phosphite + Nutrients	5.00	14
6	PK Plus	Phosphite + Nutrients	6.00	14
7	Kelplex	Nutrients +	2.00	7
7	Ultraplex	Surfactant	4.00	7
8	Revolution	Surfactant	6.00	28
9	Neptune	Surfactant	6.00	28
10	Aquaplus	Polyacrylamide	3.00	28
11	Primo Maxx	Plant Growth Regulator	0.30	14
12	Control	--	--	--

*All treatments applied in a carrier volume of 2 gal/M.

LGIS Study Plot Plan

East

Replication 1												Replication 2											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>10</u>	<u>11</u>	<u>7</u>	<u>2</u>	<u>1</u>	<u>12</u>	<u>6</u>	<u>3</u>	<u>9</u>	<u>4</u>	<u>5</u>	<u>8</u>

4

5

6

7

8

9

<u>11</u>	<u>10</u>	<u>2</u>	<u>3</u>	<u>9</u>	<u>8</u>	<u>6</u>	<u>12</u>	<u>4</u>	<u>7</u>	<u>5</u>	<u>1</u>	<u>4</u>	<u>9</u>	<u>6</u>	<u>10</u>	<u>7</u>	<u>2</u>	<u>8</u>	<u>1</u>	<u>11</u>	<u>3</u>	<u>5</u>	<u>12</u>
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

West

(Road)