

Salinity Distribution Under Drip Irrigation

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Earlier measurement of salinity distribution under drip irrigation in cotton found the electroconductivity values 2.77 times higher in the dry furrow center than the irrigated center in the surface 12 inches of soil. In the second foot the values were 2.55 higher than the irrigated furrow with water salinity of approximately 3500 ppm, SAR 8.5 and adjusted SAR of 23.2. Electroconductivity values for the 12"-24" layer of the irrigated and dry middles were 3.81 and 9.93 respectively, at the end of the season.

Salinity measurements under the same variable row spacing of 34"-42" in 1984 were made laterally at 6 inch interval points away from the tubing. Each point was sampled six inches deep and composited from eight replications. The tubing was considered the zero point and the cotton row was located 17 inches from the dripline. A mixture of low salinity water from surface and pump sources was of varying proportions during the season when 36 inches of water were applied.

Electroconductivity values ranged from 0.60 to 0.85 in much of the profile with the exception of the surface near the drip line and the deeper layers in the "dry" middle. A comparison of the average of 0", 6" and 12" points with average of the 30" and 36" in the three lower layers found ratios of increase of 1.74, 2.94 and 3.01. None of the values appear to be a hazard to stand establishment in the following year.

Electroconductivity Values

	<u>0", 6", 12" Average</u>	<u>30", 36" Average</u>	<u>Ratio of Increase</u>
6"-12" layer	.59	1.025	1.74
12"-18" layer	.68	2.94	2.94
18"-24" layer	.74	2.23	3.01

Electroconductivity Values of Profile

Sampling Points

Soil Depth	<u>0"</u>	<u>6"</u>	<u>12"</u>	<u>18"</u>	<u>24"</u>	<u>30"</u>	<u>36"</u>
0"- 6"	1.45	1.37	1.40	.60	.60	.70	.69
6"-12"	.60	.57	.60	.62	.77	1.15	.90
12"-18"	.66	.68	.70	.74	1.31	2.20	1.80
18"-24"	.75	.63	.85	.45	1.95	2.21	2.26