Strawberries: The effects of modifying irrigation methods for transplant establishment

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www.itrc.org/projects/jdwt.html

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California Strawberry Commission
California Department of Food & Agriculture
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United Water Conservation District

Key Growers:
Ryan Harrison
David Peck
Jim Carter
James DuBois
Primary Objectives

- Keep strawberry transplants healthy
- Switch to drip irrigation as early as possible

Primary Issues

- Salinity near the plant
- Soil moisture/nutrient management
- Santa Ana Winds (hot, dry east winds in Oct/Nov)
Problems with Sprinklers: Irrigation Runoff
United Water Conservation District

Problem with Capacity - Hourly Demand on October 23, 2008

Dry Year Flow Capacity

Time of the Day

Production in CFS
Conventional Protocol

• Sprinkler Irrigation for about 6-8 weeks and then switch to Drip

Partial Sprinkler

• Sprinkler Irrigate for “events”, then switch to Drip

Drip Only

• Start on Drip, stay on Drip
Salinity
Decagon 5TE

Soil Moisture
Sensors - Hortau
Manzanita Block 2 A Reduced Sprinkler - 2 Tape
EC (dS/m) 1/6/12

Average EC 5.9 dS/m
Manzanita Block 2 A Reduced Sprinkler - 4 Tape
EC (dS/m) - 2/25/12

Average EC 4.41 dS/m

Note:
- less salts in the root zone
- issue with short duration irrigations
Evaluate yield impact based on the water quality of the source water

"Response of Strawberry cvs, Ventana and Camarosa to Salinity and Chloride Concentration in Irrigation Water"

Donald L. Suarez, Principal Investigator
Catherine M. Grieve, Co-Investigator
U.S. Salinity Laboratory
USDA ARS Riverside CA

Interview with Dave Peck
Evaluate the Soil Salinity

SAMMIS - Modified Sprinkler Salinity - 8/27/10

Average EC 5.9 dS/m

Width from left side of the row, ft
Evaluate the salt and water distribution

2 Tapes – High Flow

4 Tapes – Low Flow
How water moves through a “wall”
- Fresh water moves “INTO” the potato slice
- Salty water moves “OUT OF” the potato slice
Key Point: Chloride salts are BAD
Evaluate the pressure distribution
Need more information?

ITRC Website

www.itrc.org/projects/jdwt.html