

## West Side Research and Extension Center



Located on 320 acres in the San Joaquin Valley, West Side Research and Extension Center (WSREC) is located on a very high quality clay loam, suitable for growing row, orchard and field crops, and turfgrass, landscape and nursery plants.

Western Fresno county receives only about 5-7" rain per year. This makes West Side ideal for studies on water and drought tolerance in plants.

### Salinity Studies

In many parts of the arid western United States, irrigation water supplies are getting more expensive and more limited due to increasing competition between water users. For some areas, groundwater with salinity might be an available source of water if crops can tolerate it.

New efforts are underway at the WSREC to evaluate tolerance to varying levels of salinity in irrigation. Studies include:

- Evaluating alfalfa cultivars for tolerance to moderate saline versus non-saline irrigation
- Exploring wheat cultivar differences in yield and growth under saline and non-saline irrigation
- Determining the response to saline irrigation of potential biofuel crops, including castor bean and sugar beets

The potential for transforming growing practices in the San Joaquin Valley is high, allowing growers more options for a future of uncertain water quality.

Research conducted by Sharon Benes, Del Blanco, Jorge Dubcovsky, Robert Hutmacher and Dan Putnam



## Biofuels

Fossil fuels are responsible for raising carbon dioxide levels and our reliance on them is a factor in global warming. Finding alternative sources of energy has become ever more important. At WSREC, different crops are being evaluated for their suitability as biofuels.

Researchers are looking at the following crops with this potential:

- Sweet and forage sorghums
- Canola
- Sugar beets
- Camelina
- Miscanthus
- Switchgrass

In addition to looking for information on biomass and energy yield and quality, the researchers are looking into how much water or nutrients these crops will use. This is an exciting addition to the potential array of alternative energy sources available to the planet.

Research conducted by Jeff Dahlberg, Robert Hutmacher, Steve Kaffka, Bruce Linquist, Dan Putnam, Steve Wright



## Alternative Tillage Practices and Farming Systems

Long-term trials have been set up at WSREC to evaluate alternative reduced tillage production practices for agronomic crops such as cotton, corn and wheat and horticultural crops including tomatoes, onions and broccoli. Results of these projects will help guide recommendations for management practices to improve plant establishment, crop production and weed and insect pest management under reduced tillage. Recommendations will also quantify potential long-term impacts on air quality, energy use in farm operations and various aspects of soil quality.

The research is evaluating crop yield and quality responses to these production practices, changes in soil quality characteristics and potential impacts on energy use and air quality from these production system changes.

Several projects have focused on combining reduced tillage production systems with newer irrigation technologies (subsurface drip, linear move sprinkler systems) to evaluate possible synergistic crop and soil responses to these combined practices.

Research conducted by Jeff Mitchell

## Extension, Outreach and Education:

The Twilight Tillage Tour is an annual Open House where growers and members of the public can visit WSREC reduced tillage and alternative irrigation technologies. The most recent event included tours of three local farms and three sites at the Research and Extension Center.

