

Meeting Challenges in a Developing Vegetable Production Area

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Scientists first began work at the USDA, ARS, South Central Agricultural Research Laboratory, at Lane, Oklahoma, in 1986. Oklahoma State University's Wes Watkins Agricultural and Extension Center is also located at this site. The facility is collectively referred to as the Lane Ag Center.

Personnel at the Lane Ag Center work individually and cooperatively in programs to develop alternative agricultural systems for the Southern Plains, which includes Arkansas, New Mexico, Oklahoma, and Texas. The majority of the work at the Lane Ag Center deals with vegetable crops, with a large portion of it being devoted to cucurbits, primarily watermelon.

There are large, established vegetable production areas in south central and south Texas. However, the predominant agricultural base when the laboratory was established centered on cow-calf cattle operations. This, to a large degree, is still the case today. Some row crops, including peanut, are grown in the region, but federally subsidized farm supports for peanut are being reduced.

There are also expanding urban centers in the region. On one hand, growth of urban areas reduces the amount of arable land available to agriculture. But it also provides opportunities for producers who are willing to shift their operations in whole or in part to crops that can be used in fresh markets and as lightly processed forms to satisfy appetites of city dwellers. Producers in the area are presented with challenges and opportunities due to the changing agricultural environment and consumer tastes, and they may require continuing education to initiate new enterprises. Currently the message from the Lane Center is that producers should consider diversifying their operations - and devoting a portion of the farm products to alternatives in to the existing agriculture systems.

In developed vegetable production areas, research is often directed to better understand problems that arise in an existing industry. In those areas the on-farm research is often dictated by requirements of producer

organizations. The mission of the Lane Center is to anticipate problems while developing production systems suitable for the region. The majority of the research, and the direction it will take, is currently defined by Lane Center personnel with client input.

All the alternative crops undergoing examination at the center have specific requirements to maximize yield quantity, quality, and nutrient content. For vegetables, it is necessary for producers to understand the importance of proper field preparation and maintenance, irrigation, fertilizer requirements, harvesting frequency and timing, and pest management.

It is important to transfer the information and technology developed on the center to those who can put it to use. This requires cooperation between research and extension personnel and producers. At all levels it is important that those involved remember that at least some of the participants of the projects are undergoing a learning process.

There are many ways to deliver to the end user information developed from research. The Internet has expanded the possibilities for information distribution. A Web site devoted to vegetable production systems is a component of the parent Web site that serves the Lane Center. In many cases information concerning farming enterprises in a county spreads more quickly at the coffee shop than over any formal delivery system. The development of data and the delivery of information need to be taken to the field if the information is going to be used by producers. First contact between the scientist and the producer interested in doing on-farm research is normally through the county Extension agent.

The successful completion of on-farm research can be complicated by what the scientist is trying to accomplish. Treatments on producer fields can include everything from the relatively simple design needed for cultivar trials, to more involved designs that test one or more variables. Research, by definition, requires that data be developed from a replicated experiment testing effects of a treatment that is compared to an untreated control, by

means of a reproducible design.

Conducting research on a producer's field that is designed to refine, or develop, a production system can create frustration. Installing a replicated experiment on a portion of the field may create logistical problems. If a producer is considering altering his/her operation, he/she wants to see something that works. Even when an on-farm project is undertaken with the best of intentions, problems can develop on both sides. How these problems are handled will define the level of, and incentive for, cooperation in subsequent years.