

Teaching

Several undergraduate/graduate courses related to plant science and sustainable crop production are taught including:

Introductory Plant Sciences (AGRO/HORT 100): Introduction to the physical, biological, and chemical principles underlying plant growth and development in managed ecosystems.



Principles of Crop Production (AGRO/ HORT 365): Basic principles of crop production including environmental and physiological factors limiting production, plant nutrition and soil science, soil-water management, cropping systems and management, pest management, and economic factors influencing crop production.



Sustainable Production of Agronomic Crops (AGRO 483): Characteristics and objectives of sustainable agricultural systems with application to the production, utilization, and improvement of cereal grain, fiber, forage and oilseed crops.



Kulbhushan Grover
Crop Ecologist & Associate Professor
Plant and Environmental Sciences
New Mexico State University
MSC 3Q, PO BOX 30003
Las Cruces, NM 88003-8003

Email: kgrover@nmsu.edu
Web: <http://aces.nmsu.edu/academics/pes/faculty.html>
Phone: 575-646-2352
Fax: 575-646-6041



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SUSTAINABLE CROP PRODUCTION



COLLEGE OF
AGRICULTURAL, CONSUMER AND
ENVIRONMENTAL SCIENCES

COOPERATIVE EXTENSION SERVICE

Extension Plant Sciences
Plant and Environmental Sciences



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Sustainable Crop Production

Declining water availability along with increased climatic variability affect sustainability of irrigated agriculture and rural economy in the semi-arid New Mexico. Identifying alternate crops that can grow with minimum irrigation water, reduce inputs, improve soil quality, and also provide economically sustainable returns to the growers of the region is important.

Guar or Clusterbean (*Cyamopsis tetragonoloba L.*) is a drought-tolerant and high value legume that can be grown for fresh pods for vegetable, or for protein-rich high quality forage for animals or for seed to produce guar gum. More recently use of guar gum for *fracking* has revolutionized natural gas industry, and has increased an unprecedented demand and interest in guar, nationally and globally.

Successful adoption of guar as an alternate crop could help provide the much needed boost to local agriculture and, therefore, the overall economy in the state.

Research from this program has shown guar can be well adapted in New Mexico production systems.



Cover crops provide a cover for the soil and are often grown between cropping seasons regardless of whether their biomass is later incorporated. Cover crops can improve environmental sustainability and farm profitability for organic as well as conventional systems.

This program has evaluated and identified cover crops that would fit in local farming systems.



Program Impacts

Dissemination of research based region specific information on sustainable crop production systems is helping clientele understand and implement management practices to achieve their sustainability goals.

