Adaptable Cover Crops for the Southwest Cropping Systems
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Cover crops are non-cash crops grown by farmers to build organic matter and soil fertility, help improve soil health, control water and wind erosion, suppress weeds, and break the cycles of diseases and pests common to agricultural crops. However, selecting appropriate cover crops is very challenging in the Desert Southwest. Constraints include water availability, adaptable species of crops and appropriate cultural practices for raising cover crops.

Cover crops can be grown during the off-season period such, as in the fall, or during the normal cropping season, in which case they are called "green manure." The present study is investigating the performance of selected cover crops (both grasses and legumes) as green manure candidates.

Crops being tested include sorghum-sudan, pearl millet, buckwheat, lablab, cowpeas, Sesbania, hairy vetch and a mixtures of sorghum-sudan +lablab; Sesbania+ sorghum-sudan; Sesbania+pearlmillet; and cocktail mixture of all of the crops mentioned above.

We are measuring water utilization of different cover crops and their impacts on weed suppression and soil quality. We are also studying their growth pattern to be able to develop appropriate cultural practices for utilizing these cover crops.

The field for this study was planted in chile for several years and incidents of pests and diseases have been reported in the field. This gave us an added opportunity to evaluate the tolerance of the selected cover crops to pests and diseases.

Preliminary results show that early planting of buckwheat and legumes except Sesbania were susceptible to soil-borne diseases and intense weed pressure. Promising covers that can be planted early in the spring include both grasses tested (sorghum-Sudan and pearl millet) and Sesbania. However, for late planted covers, cowpeas and lablab performed better than when they were planted very early in the spring.

This study demonstrated the need to pay careful attention to adaptability, planting date and general management for a successful utilization of cover crops as green manures.
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Sorghum Sudan

Pearlmillet

Sesbania

Nodules formed on Sesbania roots

Lablab

Cocktail Mix of Sesbania + Sorghum-sudan+ Pearlmillet+ Hairy vetch+ Lablab+ Cowpeas+ Buckwheat

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