

4.2.4 CONVERSION OF SUPPLEMENTAL IRRIGATED FARMLAND TO DRY-LAND FARMLAND

A. Applicability

This BMP is applicable to agricultural producers that currently use ground or surface water as a supplement to rainfall to irrigate agricultural lands that are located in geographic areas where agricultural crops can be produced without irrigating. This BMP is not applicable to geographic areas of the state of Texas that have insufficient rainfall to produce an agricultural crop. This BMP is not applicable to the conversion of farmland to non-farmland.

B. Description

Dry-land farming produces agricultural crops using precipitation as the source of soil moisture. Many geographic parts of Texas receive sufficient precipitation to produce some types of crops. Typically the crop yields produced by dry-land farming are significantly lower than yields produced by irrigated farming. Crop yields from dry-land farming vary season to season depending on the amount and timing of precipitation.

Permanent pasture is the most common type of dry-land farming and is popular as a dry-land crop because pasture can survive longer periods of no rainfall compared to typical row crops such as milo, corn, or cotton. In the High Plains and Lower Rio Grande Valley regions of Texas, low water use crops such as cotton have been successfully grown without irrigation. However, irrigation of such crops in those regions reduces the risk of crop failure due to lack of soil moisture and increases crop yield.

Some crops such as sugar cane, rice, and many vegetable crops cannot be grown in Texas without irrigation regardless of the geographic location of the crop.

C. Implementation

The effect of conversion from irrigated farming to dry-land farming on crop yields, crop production costs including the costs of irrigation, and farm profits should be evaluated by comparing information from dry-land farming in the same geographic and climatologic area in which the irrigated land is located. After the agricultural water user has evaluated the increased risks associated with dry-land farming, the water user should then convert an amount of previously irrigated land to dry-land farming that is acceptable to the user based on the amount of increased risk.

D. Schedule

Conversion from supplemental irrigated farmland to dry-land farmland can be implemented at the beginning of the crop growing season on a field by field basis.

E. Scope

This BMP should be used with other BMPs that can improve the water use efficiency of dry-land farming such as conservation tillage and furrow diking.

F. Documentation

To track this BMP, the agricultural water user shall gather and maintain the following documentation:

- 1) Copies of records of crop yields and crop production expenses;
- 2) Any USDA Farm Service Agency or other governmental agency evaluation and assistance reports documenting that specific fields were not irrigated; and
- 3) Irrigated water use and rainfall measurement records from the periods before conversion to dry-land farming.

G. Determination of Water Savings

The quantity of water saved by conversion from supplemental irrigated farmland to dry-land farmland can be estimated based on historical water use records for the crop type and geographic location where the crop was grown.

H. Cost-Effectiveness Considerations

The cost-effectiveness of conversion to dry-land farming requires complex economic and climate analysis. Dry-land farming can be significantly less costly than irrigated farming. However, since crop yields are often less, and the risk of crop failure may be significantly increased, the amount of profit per acre of dry-land is usually less than irrigated land. Texas Agricultural Extension Service estimated that crop yields grown in Bexar, Medina, and Uvalde Counties for dry-land farming are one-third to one-half less than for irrigated farming.

I. References for Additional Information

- 1) P. W. Unger, T. V. Sneed, W. R. Jordan, R. Jensen (eds.) "*Proc. Intl. Conf. on Dryland Farming, Challenges in dryland Agriculture - a Global Perspective*", Aug. 1988, Amarillo/Bushland, Texas. TAES, p. 965.
- 2) Pena, Jose, 1997, "*Texas Crop Enterprise Budgets*", Southwest Texas District, Texas Agricultural Extension Service, Uvalde, Texas.