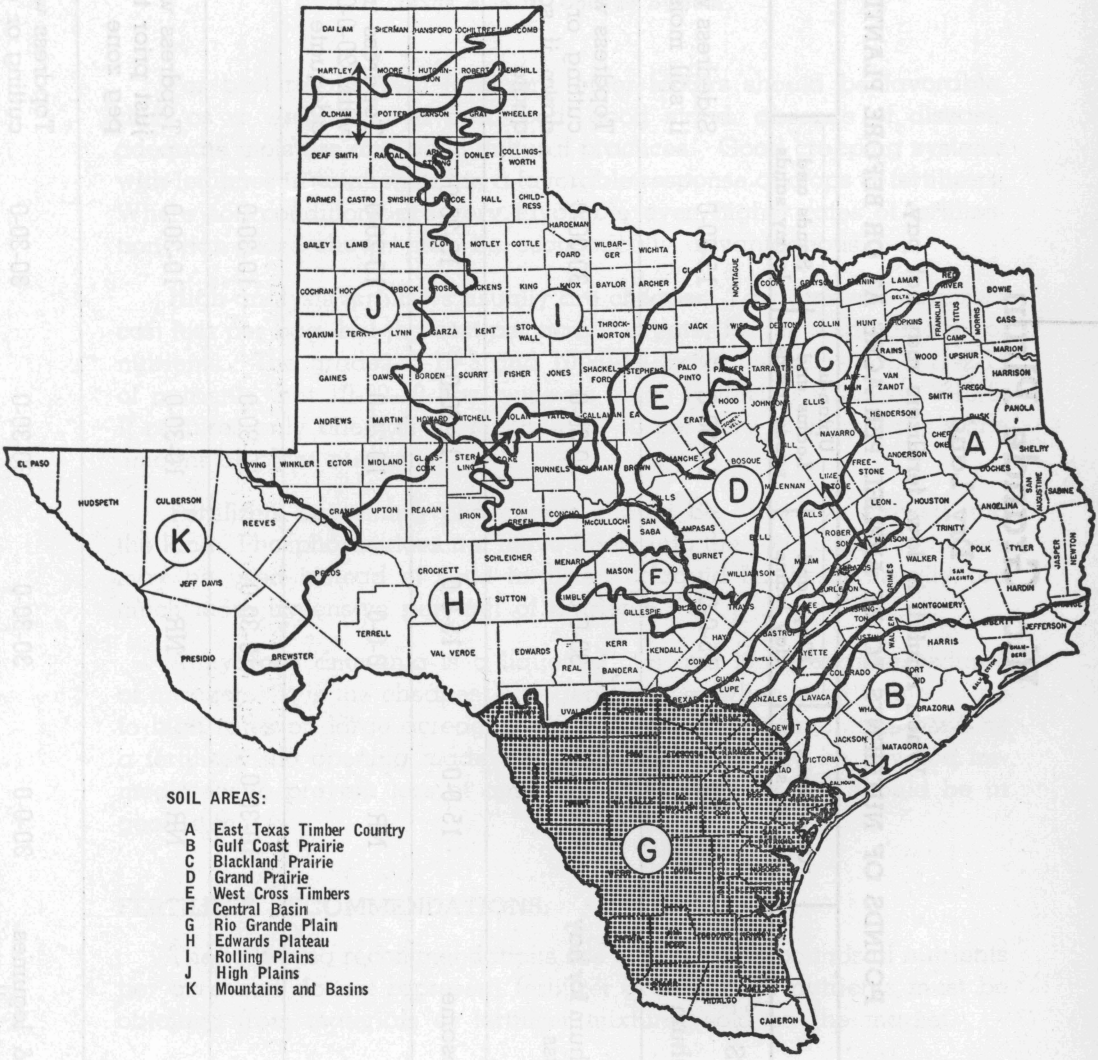
FERTILIZER RECOMMENDATIONS

for the Rio Grande Plain



Adapted from Texas Agricultural Experiment Station Bulletin 431, by W. T. Carter.

TEXAS AGRICULTURAL EXTENSION SERVICE
G. G. Gibson, Director, College Station, Texas

FERTILIZER RECOMMENDATIONS

for the Rio Grande Plain

M. K. Thornton, Extension Agricultural Chemist
Bruce Perry, Superintendent, Substation No. 19
R. A. Hall, Superintendent, Substation No. 1
Texas A. & M. College System

For best results with fertilizers, other factors should be favorable, such as a well-prepared seed bed, good stand, absence of disease, adequate moisture and good cultural practices. Good cropping systems with legumes in rotation aid in a favorable response of crops to fertilizers. Where soil conditions are very favorable even higher rates of fertilization than those shown may be economically advantageous.

High-analysis fertilizers usually are cheaper. Low-analysis fertilizers cost less per bag, but the cost per acre is greater for the same amount of nutrients. The grades, 5-10-5 and 10-20-10, have the same ratio (1-2-1) of nutrients, but 10-20-10 has twice as much fertilizing value as 5-10-5. It requires only one-half as much 10-20-10 per acre to supply the same amount of plant nutrients.

Fertilizers containing phosphorus should be drilled or plowed into the land. Phosphorus does not move freely into the soil. Liquid fertilizers may be used instead of solid fertilizers. Liquid fertilizers usually are much more expensive per unit of nutrients.

Anhydrous ammonia is a liquefied gas and is an excellent source of nitrogen. It is the cheapest nitrogen fertilizer when used at moderate to high rates on large acreages. When anhydrous ammonia is used as a fertilizer, the opening made by the applicator should be covered immediately to prevent loss of ammonia. Likewise, the soil should be in good tilth.

FERTILIZER RECOMMENDATIONS:

The following recommendations are expressed in pounds of nutrients per acre and do not represent fertilizer grades. The nutrients must be obtained from materials or fertilizer mixtures sold on the market.

For example, a recommendation calling for 30-60-30, which is a 1-2-1 ratio can be obtained by applying 600 pounds of 5-10-5 or 250 pounds of 12-24-12 or 300 pounds of 10-20-10. Again, if a recommendation calls for 15-60-0, this may be obtained by applying about 400 pounds of a 4-16-0 or 125 pounds of 11-48-0.

Row Crops: Fertilizer usually is applied at the time of planting or just before. Fertilizers are more efficiently used by most crops when applied in a band two to three inches to the side and two to three inches below the seed.

If equipment for applying fertilizers in bands while planting or cultivating is not available, apply the fertilizer in the water furrow and bed on it.

If large quantities of nitrogen fertilizer are to be applied part of the nitrogen should be drilled into the soil with the phosphorus and potash and the remainder applied 35 to 45 days later as a side or topdressing.

Small Grains: Fertilizers for small grains should be applied in a band midway between the seed rows through a separate drill spout. Fertilizers containing nitrogen and potash should not be allowed to touch the seed.

Phosphorus, potash and part of the nitrogen should be applied at or before seeding. The rest of the nitrogen should be applied in the spring before plants begin to joint.

Pastures: For establishing improved pastures, phosphorus, potash and part of the nitrogen should be drilled or plowed in. The remainder of the nitrogen should be applied broadcast in 40 to 60 days as a topdressing. For maintenance, topdress as needed.

Fruit Trees: Fertilizer for fruit trees may be applied over the entire area covered by the orchard when the trees are mature. In nonbearing orchards, the fertilizer should be applied over the area covered by the spread of the limbs. Keep fertilizer 1 foot away from tree trunks. Cultivate fertilizer applications into the soil.

Recommendations for fertilizers in this circular are those found best by experiments, tests and practical experience in the field. They range from the calcareous (limy) river valley clays to the sands of the uplands. If your farm contains both clays and loams, there will be two recommendations for your land.

When crops follow legumes turned under, the amount of fertilizer to be applied at planting may be reduced. Side or topdress with the amount of fertilizer suggested.

The letters NR mean that the crop is not recommended for this class of soils.

THE FERTILIZER RECOMMENDATIONS CONTAINED HEREIN ARE GENERAL IN SCOPE. SOILS VARY IN FIELDS AND AREA SO MUCH THAT SOIL TESTS SHOULD BE MADE IN ORDER TO RECOMMEND MORE DEFINITE AND ECONOMICAL FERTILIZER APPLICATIONS.

Cooperative Extension Work in Agriculture and Home Economics, The Texas A. & M. College System and United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8, 1914, as amended, and June 30, 1914.
2½M—11-55, Revised

Rio Grande Plain

Dry Land

When rainfall is low, fertilizers may not pay.

POUNDS OF NUTRIENTS TO BE APPLIED PER ACRE AT OR BEFORE PLANTING

	Calcareous alluvial soils	Uplands			Remarks
		Clays and clay loams	Loams and sandy loams	Sands and loamy sands	
FIELD CROPS Corn Grain sorghum	15-0-0	15-0-0	15-30-0	15-30-0	Sidedress with 20-0-0 in 35 days if soil moisture is adequate.
Sudan Sweet sorghum for hay Johnsongrass	30-0-0	30-0-0	30-30-0	30-30-0	Topdress with 20-0-0 after each cutting or each time grazed down if soil moisture is adequate
Cotton, sesame	15-0-0	15-0-0	15-30-0	15-30-0	
Flax	NR	0-0-0	10-20-0	10-20-0	Topdress in Jan. or early Feb. with 20-0-0 if soil moisture is adequate
Legumes	10-30-0	10-30-0	10-30-0	10-30-0	
Peanuts	NR	NR	10-30-0	10-30-0	Topdress with 300 lbs. gypsum just prior to bloom stage over peg zone
Pastures Grasses & legumes including small grains	30-0-0	30-30-0	30-30-0	30-30-0	Topdress with 20-0-0 after each cutting or grazing down if soil moisture is adequate
TRUCK CROPS Lettuce and cabbage	20-0-0	20-0-0	20-40-0	20-40-0	Sidedress with 20-0-0 when plants begin to head
Spinach	20-0-0	20-0-0	20-40-0	20-40-0	
Beets, carrots, turnips	20-0-0	20-0-0	20-40-0	20-40-0	
Peppers and tomatoes	20-0-0	20-0-0	20-40-0	20-40-0	Sidedress with 20-0-0 at first bloom
Cantaloupes, cucumbers, squash, watermelons	NR	NR	20-40-0	20-40-0	Sidedress with 20-0-0 when vines begin to run
Onions	20-0-0	20-0-0	20-40-0	20-40-0	

Irrigated Areas

FIELD CROPS Alfalfa	20-100-0	20-100-0	20-100-0	20-100-20	0-60-0 annually for maintenance
Corn, grain sorghum	40-0-0	40-40-0	40-80-0	40-80-0	Sidedress with 60-0-0 in 35 days
Sweet sorghum for hay, sudan, Johnsongrass	40-0-0	40-40-0	40-80-0	40-80-0	Sidedress with 60-0-0 after each cutting or each time grazed down
Cotton, sesame	20-0-0	20-0-0	20-40-0	20-40-0	
Legumes	20-40-0	20-40-0	20-80-0	20-80-20	
Pastures Grasses only, Grasses and legumes, including small grain	40-40-0	40-40-0	40-40-0	40-80-0	Topdress with 60-0-0 each time cut or grazed down
TRUCK CROPS Lettuce, cabbage	40-0-0	40-0-0	40-40-0	40-80-0	Sidedress with 60-0-0 when plants begin to head
Grapefruit, oranges, lemons	0-0-0	20-0-0	20-40-0	20-40-0	Sidedress in spring or early summer with 60-0-0
Carrots, beets, turnips		40-80-0	40-80-0	40-80-0	½ at planting — ½ in 60 days
Irish potatoes	0-0-0	40-40-0	40-80-0	80-80-0	½ at planting — ½ in 40 days
Tomatoes, peppers, eggplants	0-0-0	40-40-0	40-80-0	40-80-0	Sidedress at set of first fruit with 40-0-0
Cantaloupes, squash, cucumbers, watermelons	0-0-0	40-40-0	40-80-0	40-80-0	Sidedress with 40-0-0 when vines begin to run
Spinach	0-80-0	0-80-0	20-80-0	40-80-0	
Onions	20-40-0	20-40-0	40-80-0	40-80-0	
Strawberries	NR	40-40-0	40-80-0	40-80-20	½ at setting out and ½ at first bloom
General garden	20-40-0	40-40-0	40-80-0	40-80-0	