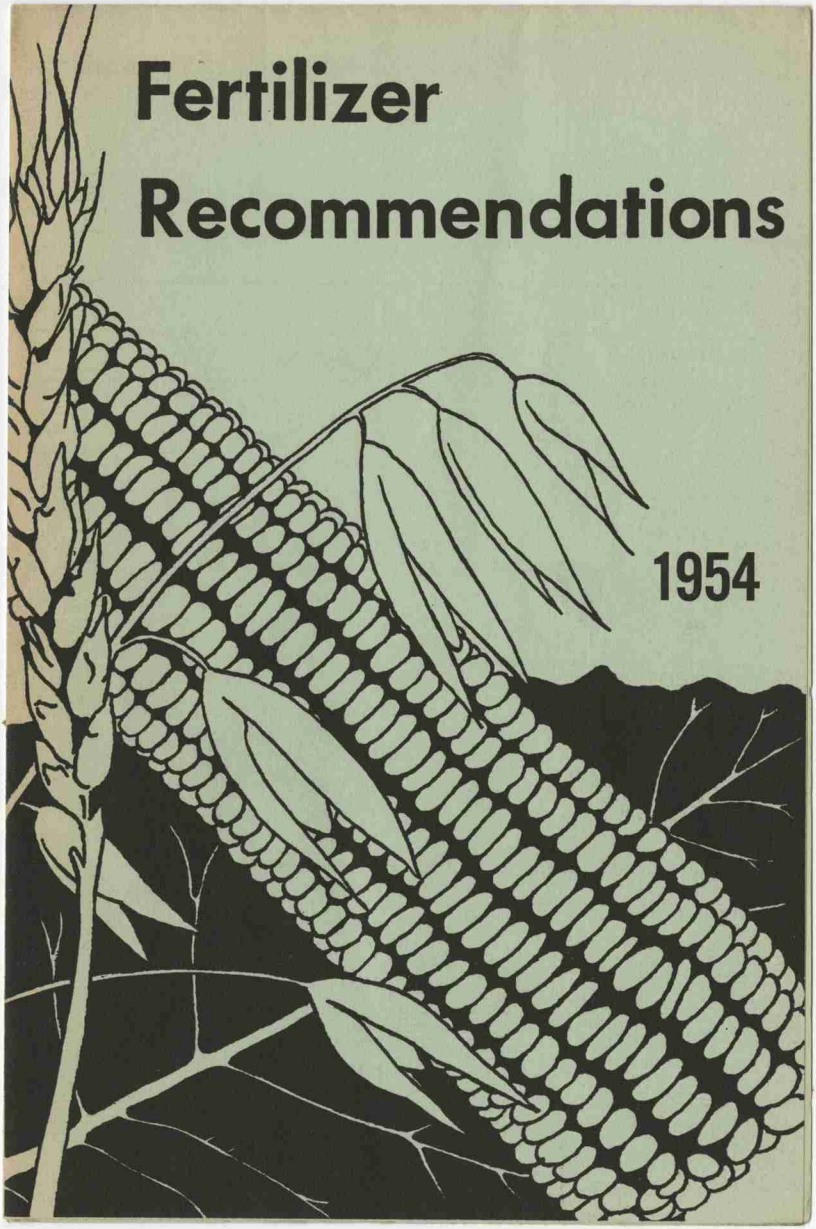
Fertilizer Recommendations

1954



FERTILIZER RECOMMENDATIONS FOR VEGETABLE CROPS *

	Fertilizer at Planting[1]	Sidedressing
Beans (Lima)	600 lbs. 8-8-8	None
Beans (Snap)	1,000 lbs. 5-10-5	15 lbs. N
Broccoli	700-1,000 lbs. 8-8-8 plus 15 lbs. borax per ton	30 lbs. N plus 8 lbs. borax per acre
Cabbage	700-1,000 lbs. 8-8-8 plus 15 lbs. borax per ton	30 lbs. N
Cantaloupe	600-800 lbs. 8-8-8	15 lbs. N
Cauliflower	700-1,000 lbs. 8-8-8 plus 15 lbs. borax per ton	30 lbs N plus 8 lbs. borax per acre
Collards	800-1,200 lbs. 8-8-8	30 lbs. N
Cucumbers	800 lbs. 8-8-8	15 lbs. N
Lettuce	1,000-1,200 lbs. 8-8-8	15-30 lbs. N
Onions (Mature)	600-900 lbs. 8-8-8	30 lbs. N
Peppers, Sweet	700-800 lbs. 8-8-8	30 lbs. N
Potatoes, Irish	1,200-1,500 lbs. 8-8-8 (Potash from sulfate of potash)	None
Potatoes, Sweet	600-1,200 lbs. 3-9-9 or 2-12-12 plus 10 lbs. borax per ton	None
Sweet Corn	500 lbs. 8-8-8	80 lbs. N
Squash	600-900 lbs. 8-8-8	15 lbs. N
Tomatoes	800-1,200 lbs. 8-8-8	30 lbs. N
Watermelons	600 lbs. 8-8-8	15 lbs. N

[1] The lower rates apply to the Piedmont and mountains; the higher rates for the Coastal Plain. If soils are low in phosphorus, apply 5-10-5 and increase the rate 50 per cent.

FERTILIZER RECOMMENDATIONS FOR APPLES AND PEACHES *

APPLES **Nonbearing trees:** February or March 1st year, per tree .08 lbs. of actual nitrogen (4 oz. ammonium nitrate, 6 oz. Cal-Nitro, A.N.L. or ammonium sulfate; or 8 oz. sodium nitrate). Increase by .08 lbs. each year up to bearing age. Substitute 1 lb. 8-8-8 per tree for each year of age if orchard is clean cultivated.
Bearing trees: 1¼ lb. actual nitrogen (4 lbs. ammonium nitrate, 6 lbs. Cal-Nitro, A.N.L. or ammonium sulfate; or 8 lbs. sodium nitrate) per year for trees bearing 10-15 bushels. Apply as a split application in fall and a month before buds swell.

PEACHES **Nonbearing trees:** 1st year 100 lbs. 8-8-8 per acre in March; 4 lbs. actual nitrogen per acre in May; and 8 lbs. actual nitrogen per acre in July broadcast around trees (Based on 100 trees per acre). Increase each year by same amount to 4th year.
Bearing trees: Sandhills—400 lbs. 8-8-8 in March and again in April; 25-40 lbs. actual nitrogen per acre in May and again in August. Apply less nitrogen for very vigorous trees if crop is light. Heavier soils—¾ as much as Sandhills.

*Where 8-8-8 is recommended, any fertilizer that will give equivalent amounts of N. P and K, such as 10-10-10, 12-12-12, 13-13-13 or 14-14-14, may be used.

FERTILIZER RECOMMENDATIONS FOR SMALL FRUIT *

BLUEBERRIES **Young plants:** 175 lbs. 8-8-8
Older Plants: 250-350 lbs. 8-8-8
Apply at bloom; 6 weeks later; and July 15 if needed.

DEWBERRIES **First year:** 350 lbs. 8-8-8 at planting and in July
Bearing plants: 500 lbs. 8-8-8 (March)
1,000 lbs. 8-8-8 or 80 lbs. N (July)

MUSCADINE GRAPES **When set:** 50 lbs. 8-8-8
2-3 yr. vines: 100 lbs. 8-8-8
Bearing vines: 600-1,000 lbs. 8-8-8

BUNCH GRAPES **When set:** 200 lbs. 8-8-8
2-3 yr. vines: 400 lbs. 8-8-8
Older vines: 400-1,000 lbs. 8-8-8

STRAWBERRIES	Grade	Lbs./Acre	Date	Placement
Young Plants:	8-8-8	250	One week before setting	4-5 in. deep in middle of bed
Established Beds[1]**:**	8-8-8	700	Sept. 1	In furrows beside beds
	N	40 lbs.	Jan. 1	Top of bed, brushed off foliage

* Where 8-8-8 is recommended, any fertilizer that will give the equivalent amounts of N. P and K, such as 10-10-10, 12-12-12, 13-13-13 or 14-14-14, may be used.
[1] In western North Carolina fertilize only in Sept.

FERTILIZER RECOMMENDATIONS FOR ORNAMENTALS *

AZALEAS AND CAMELLIAS Apply in early spring, 2 to 3 pints special azalea and camellia fertilizer per 100 sq. ft; or for more uniform growth put on 1 pint in March, 1 in June and 1 in late November.

ROSES Apply 8-8-8 at rate of 2-3 pints per 100 sq. ft. at time for first flower bud. Repeat applications should be made every 30 days until August 1 or September 1 in eastern half of state.

TREES AND SHRUBS

Trees: For trees above 6 in. in diameter, use 5 pints 8-8-8 per inch in diameter. One half this rate for trees under 6 inches. Apply in early spring.

Shrubs: 2-4 pints 8-8-8 per 100 sq. ft. Apply in early spring.

FLOWER GARDENS Use 2 pints 8-8-8 or 5-10-5 per 100 sq. ft. in early spring or at time of planting. Repeat in late spring or early summer.

LAWNS 1,500 lbs. per acre 8-8-8. Topdress with fertilizer high in nitrogen each spring. Repeat topdressing 2 or 3 times if trees are present.

OFFICIAL LIME AND FERTILIZER RECOMMENDATIONS FOR FIELD CROPS — 1954

	Approximate Lbs. Per Acre (N-P_2O_5-K_2O)	Soil Condition	Fertilization at Seeding: Suggested Rate and Grade	Topdressing or Annual Maintenance
ALFALFA	20-120-120	Average (use 20-35 lbs. borax per acre)	800-1,000 lbs. 2-12-12	400-800 lbs. 0-9-27 or 0-10-20
		Low phosphorus soils	800-1,000 lbs. 2-12-12 plus	600-800 lbs. 0-14-14 or 400-600 lbs. 0-20-20 (plus 15-25 lbs. borax).
		(use 20-35 lbs. borax per acre)	500-1,000 lbs. Superphos.	Note: Add 200 lbs. muriate of potash after the first year on soils low
		Low phosphorus, high potash soils	500 lbs. 2-12-12 plus	in potash. Lime should be applied and mixed with the soil before
		(use 20-35 lbs. borax per acre)	500-1,000 lbs. Superphos.	seeding.
CORN		Rotated with lightly fertilized crops		All except silage—60-80 lbs. N at 5 to 7 weeks or when the corn is 2
	20-40-40	Low phosphorus, low potash soils	400 lbs. 5-10-10 or 200 lbs. 10-20-20	feet high; or earlier if an ammonium material (NH_3) is used. 100-200 lbs. muriate of potash where needed or in rotation with peanuts or soy-
	20-20-40	High phosphorus, low potash soils	350 lbs. 6-6-12 or 3-9-18	beans receiving no fertilizer. Potash may be broadcast, applied at first cultivation, or with the sidedressing material.
		Rotated with heavily fertilized crops		
	20-0-0	Very high in phosphorus and potash	20 lbs. N	
	20-20-20	High in phosphorus and potash	250 lbs. 8-8-8*	
	20-20-40	High phosphorus, low potash soils	350 lbs. 6-6-12 or 3-9-18	
	10-40-40	Following legumes turned	350 lbs. 2-12-12	
	20-50-100	Silage corn	600 lbs. 3-9-18	Silage—120-160 lbs. N at 5 to 7 weeks.
COTTON		In rotation with non-legume crops		Sidedress nitrogen early to bring the total to 40-60 lbs. nitrogen
	25-50-25	COASTAL PLAIN	500 lbs. 5-10-5	per acre. Use the lower amount on the fine textured soils. Insect
	35-70-35	PIEDMONT	700 lbs. 5-10-5	control is necessary.
		In rotation with legumes for hay, peanuts, or on potash deficient soils		On potash deficient soils and especially in rotation with peanuts re-ceiving no potash, use 100 lbs. muriate of potash per acre. Apply lime in accordance with soil needs.
	25-50-50	COASTAL PLAIN	500 lbs. 5-10-10 or 250 lbs. 10-20-20	
	35-70-70	PIEDMONT	700 lbs. 5-10-10 or 3-9-9 or 350 lbs. 10-20-20	
		In rotation with legumes for seed or turned, or on soils of high organic matter		
	15-50-50	COASTAL PLAIN	500 lbs. 3-9-9	Nitrogen usually is not needed.
	25-70-70	PIEDMONT	800 lbs. 3-9-9	Nitrogen usually is not needed.
LESPEDEZA	0-40-40	Hay or grazing	300 lbs. 0-14-14 0-10-20 or 200 lbs. 0-20-20	
PASTURES	20-120-120	Ladino-Grass: Average fertility	800-1,000 lbs. 2-12-12	All soils—400-600 lbs. 0-10-20, 0-9-27, 0-14-14 or 0-20-20 annually
		Low phosphorus soils	800-1,000 lbs. 2-12-12 plus 500-1,000 lbs. Superphos.	after the first year. Add 200 lbs. muriate of potash after the first year on soils low in potash. Lime should be applied and mixed with the
		Low phosphorus, high potash soils	500 lbs. 2-12-12 plus 500-1,000 lbs. Superphos.	soil before seeding.
		Permanent pastures other than Ladino	400-600 lbs. 0-20-0, 0-14-14 or 0-20-20	200-300 lbs. 0-20-0, 0-14-14 or 0-20-20 annually; or higher rates at 3 to 4 year intervals.
		Temporary: Sudan grass, small grain, millet, etc.	400 lbs. 8-8-8*	30-50 lbs. nitrogen, preferably in split applications.
PEANUTS	0-0-75	Use high potash fertilizers or high potash deficient soils, 150 lbs. muriate of potash broadcast before planting or sidedplaced at planting.	topdressing on other crops in rotation. Where this practice is not followed, or on potash	Have soil tested and apply lime where recommended. 500 lbs. land-plaster on foliage at early bloom stage (not later than July 15) where soil test recommendations are not available.
SMALL GRAINS	20-40-20	Following moderately fertilized crops (corn, small grain, cotton, etc.)	400 lbs. 5-10-5	Average conditions: 30-45 lbs. nitrogen between February 15 and March 15; or 60-75 lbs. nitrogen on sandy and very sandy soils.
	20-40-40	Soils low in potash or following lespedeza for hay	400 lbs. 5-10-10 or 200 lbs. 10-20-20	
	20-0-0	Where tobacco, truck or other heavily fertilized crops are grown regularly and precede small grain	20 lbs. N	
	0-40-40	On heavy clay soils: Where large yields of red clover have been turned or where excessive growth is produced	300 lbs. 0-14-14 or 200 lbs. 0-20-20	Clay soils—following red clover or where animal manures used—No topdressing.
SORGHUM	20-40-40	Average conditions	400 lbs. 5-10-10 or 200 lbs. 10-20-20	Sidedress 60 lbs. nitrogen.
SOYBEANS	0-40-80	Average	400 lbs. 0-10-20	Sidedress 100 lbs. muriate of potash on all soils very low in potash.
		Following heavily fertilized crops	No fertilizer	Apply lime in accordance with soil needs.
IRISH POTATOES	120-120-120	Soils high in phosphorus	1,500 lbs. 8-8-8*	Note: Potash should be derived from sulfate of potash.
	120-240-120	Soils low in phosphorus	2,400 lbs. 5-10-5	
SWEET POTATOES	35-100-100	All sandy loam soils	1,000-1,200 lbs. 3-9-9	Broadcast 150 lbs. muriate of potash on all soils very low in potash.
	15-100-100	High organic matter soils	700-900 lbs. 2-12-12	Note: Fertilizer should contain 10 lbs. borax per ton. Too much nitro-
	20-60-60	Piedmont, except sandy loam soils above	600-800 lbs. 3-9-9	gen may result in excessive vine growth, low yield, cracking, and a high percentage of jumbos. Similar results may be obtained on heavy, dark or rich soils.
TOBACCO PLANT BEDS		Untreated beds or beds treated with methyl bromide	1½-2 lbs. 4-9-3 per sq. yd.	Note: If need is indicated, topdress with 5 lbs. nitrate of soda or equiv-alent per 100 square yds. Apply granular form dry and brush off, or dissolve in water and wash off of plants.
		Beds treated with Cyanamid or Urea and Cyanamid	1½-2 lbs. 4-9-3 (or equivalent of phosphate and potash) per sq. yd. in fall or ¾-1 lb. at seeding.	
		Beds treated with 16-6-2	No additional fertilizer.	
TOBACCO FLUE-CURED		Based on 6,000 to 8,000 plants per acre		
	30-65-80 to 40 100	Average sandy and sandy loam soils	800-1,000 lbs. 4-8-10 or 1,000-1,200 lbs. 3-9-9	Where additional nitrogen and/or potash is needed, side dress sul-phate of potash and/or readily available nitrogen, or 8-0-24. The equivalent of 50-150 lbs. 8-0-24 is needed where early heavy rains result in leaching or where potash and nitrogen are low in the soil.
	20-65-80 to 30 100	Following legumes, or on high fertility soils	1,000-1,400 lbs. 2-10-8	Note: Sixty-five pounds of P_2O_5 is considered a maintenance rate for soils medium or higher in phosphorus. If phosphorus level is below medium, apply 500-1,500 lbs. 20% superphosphate or equivalent for first year.
TOBACCO BURLEY		Based on 7,300 to 10,700 plants per acre		Where additional nitrogen and/or potash is needed, sidedress readily available nitrogen and/or sulfate of potash or 8-0-24.
		No manure or legume cover crop used	1,100-1,400 lbs. 8-8-8	Note: If phosphorus level in soil is below medium, broadcast 500-2,000 lbs. 20% superphosphate the first year. 70 pounds P_2O_5 is con-sidered a maintenance rate. All complete fertilizers applied over 600-800 lbs. per acre should be broadcast.
	90-90-90 to 110	8-10 tons manure used	400-600 lbs. 8-8-8
	to 110	Good legume cover turned (no manure used)	800-1,000 lbs. 4-8-10
		Good legume cover turned plus 8-10 tons manure	200 lbs. 20% super-phosphate plus 75 lbs. 48% sulphate of potash
		15-20 tons manure used	No additional fertilizer

* Or equivalent amount of 16-16-16, 12-12-12, 13-13-13 or 14-14-14.

FERTILIZER PLACEMENT IS IMPORTANT TO OBTAIN GOOD STANDS

Row applications of fertilizer should not be placed too close to the seed. The best method to prevent fertilizer injury is to place the fertilizer in bands two to three inches to the side and one to two inches below the seed.

Where side placement equipment is not available, mix the fertilizer with the soil and leave one to two inches of fertilizer-free soil around the seeds.

Tobacco growers must place special emphasis on proper fertilizer placement. Many times slow starting tobacco and poor stands are due to fertilizer injury, especially under dry weather conditions. Even with recommended rates of fertilizer, all two-band placement equipment available should be utilized to the fullest extent possible. In the absence of two-band placement equipment, growers should pay particular attention to placing the fertilizer at considerable depth and cover it with the equivalent of two furrows with a one-horse turning plow. Tests conducted in 1951 indicated that fertilizer placed at depths of six, eight, and ten inches is efficiently utilized by the tobacco plant.

Growers who use more than the recommended rates of fertilizer, especially of the more concentrated 4-8-10, should exercise special precautions in the method of placement. Use two-band placement distributors, bury the fertilizer to considerable depth, and/or use a split application to reduce fertilizer injury.

NITROGEN SIDE-DRESSING CHART

Your nitrogen (N) can be supplied by any one of the following sources.

Source	Pounds of N Recommended: 15	30	45	60	80
	Pounds or Gallons Per Acre				
Nitrate of Soda (16% N)	95	190	285	375	500
ANL or Calnitro (20.5% N)	75	150	220	290	390
Ammonium Nitrate (33% N)	45	90	135	180	240
Nitrogen Solution 4 (37% N)	4.1 gal.	8.2 gal.	12.3 gal.	16.4 gal.	21.9 gal.
Anhydrous Ammonia (82% N)	3.5 gal.	7.1 gal.	10.6 gal.	14.2 gal.	18.9 gal.

Published By
THE NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

North Carolina State College of Agriculture and Engineering of the University of North Carolina and the U. S. Department of Agriculture, Cooperating. State College Station, Raleigh, N. C., D. S. Weaver, Director. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

Prepared by Departments of Agronomy and Horticulture, N. C. State College