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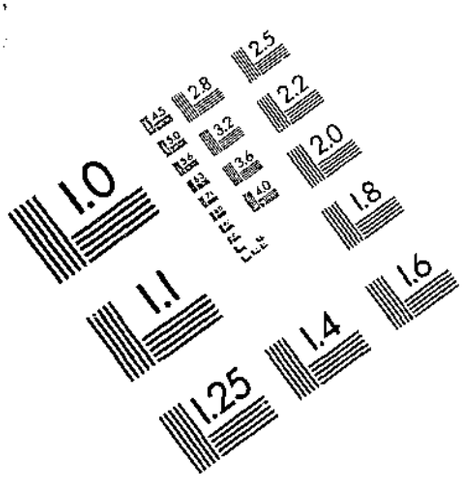

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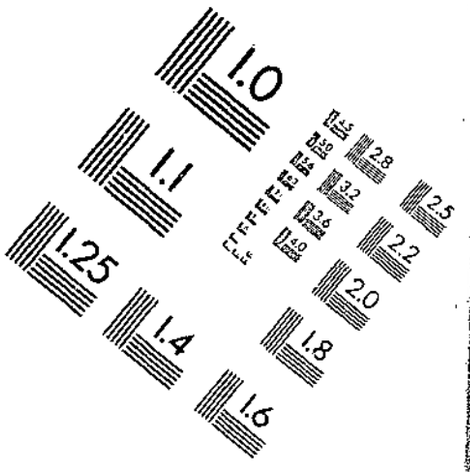

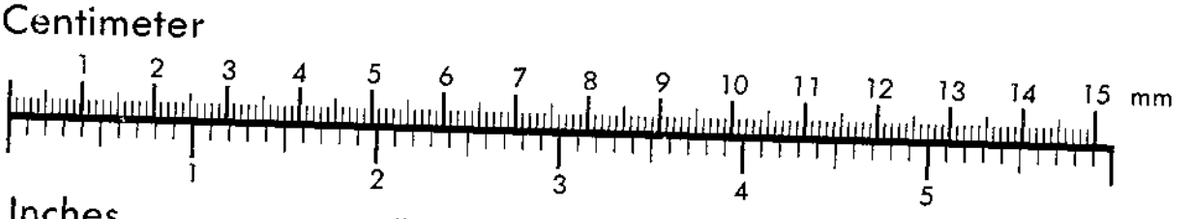

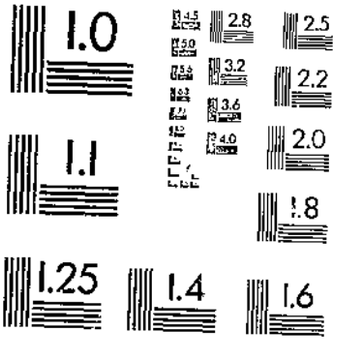

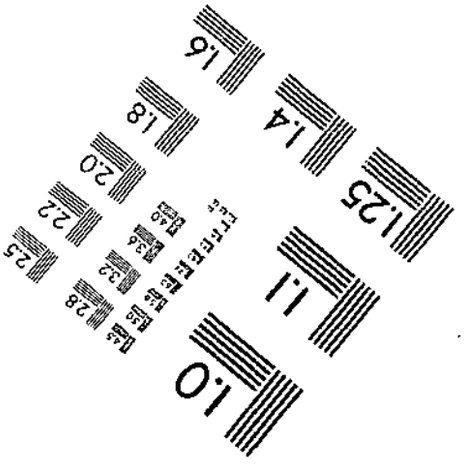

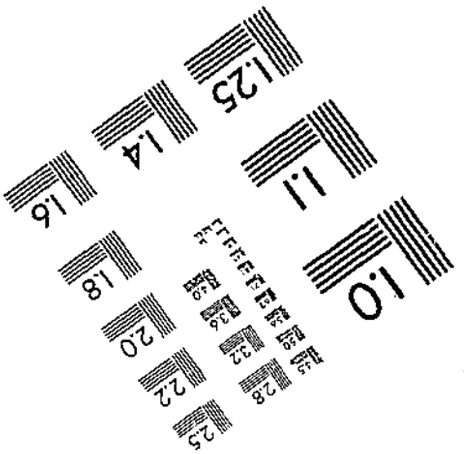

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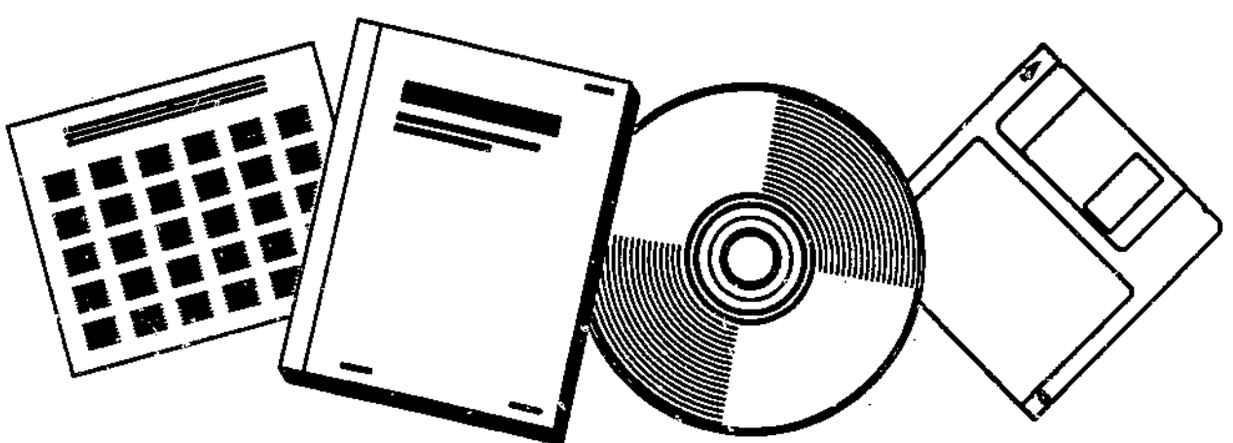

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State-Level Production Costs, Characteristics, and Input Use, 1991

Nora L. Brooks
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Peanuts: State-Level Production Costs, Characteristics, and Input Use, 1991. By Nora L. Brooks and Mir B. Ali. Agriculture and Rural Economy Division, Economic Research Service, U.S. Department of Agriculture. Statistical Bulletin Number 890.

Abstract

This report presents State-level peanut production cost and return estimates for the 1991 production year obtained from the USDA's Farm Costs and Returns Survey, along with coefficients of variation for each cost item. Per-acre costs are highly variable among States due to differences in climate, variety grown, production practices, and inputs used in peanut production. Total per-acre economic costs ranged from $637 in Florida to $925 in Virginia. Peanut yields varied significantly, from about 1,800 pounds in Oklahoma to over 3,300 pounds per planted acre in Virginia. Methods used to develop the State-level production costs and returns for 1991 are the same as those used to develop regional and U.S. weighted averages published in the *Economic Indicators of the Farm Sector: Costs of Production, 1992--Major Field Crops & Livestock and Dairy.* State-level estimates should be used for general discussion only, because statistical reliability diminishes for estimates below the regional and U.S. level due to sample size. Coefficients of variation included in this report are an indicator of the statistical reliability of each estimate.

Keywords: Costs of production, State-level, peanuts, quota, enterprise accounts, returns, production inputs, farm characteristics.

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Peanuts: State-Level Production Costs, Characteristics, and Input Use, 1991

Nora L. Brooks

Mir B. Ali

Introduction

U.S. peanut yields returned to more normal levels in 1991 after a major drought in 1990 reduced yields to levels not seen since the 1980 drought. In 1991, peanuts were planted on 2.04 million acres and harvested on about 2.02 million acres, 10 and 11 percent above 1990, and the largest planted and harvested acreages since 1951. Production of peanuts in 1991 totaled 4.93 billion pounds, about 37 percent above 1990. The U.S. average yield of 2,444 pounds per harvested acre was 453 pounds above the 1990 average yield. Yields were higher in all peanut-producing States, except Florida and North Carolina.

In the Southeastern States of Alabama and Georgia, yields were up 60 percent from 1990 levels in spite of excessive moisture early in the year. The high moisture caused concern about disease and soil compaction, but drier weather near harvest offset those conditions. Heavy spring rains and an early heat wave caused production in Virginia and North Carolina to fall slightly from 1990 levels, but near ideal weather late in the season in Virginia, and a slight reduction in acreage, pushed the average yield to a record high. Production in the Southern Plains was up 20 percent from 1990 as Texas had the largest planted acreage since 1955.

The 1991 U.S. peanut crop had a market value of $1.39 billion. This value is for peanuts used as nuts, both quota and nonquota. Almost half of U.S. peanut production is used in the domestic edible market while one-fourth is crushed and slightly less than one-fourth is exported. Peanuts used in the domestic edible market receive the higher quota support price and are generally used in such products as peanut butter, peanut candy, and snack nuts.

This report summarizes the 1991-production cost data, from the USDA Farm Costs and Returns Survey for seven peanut States, which were collected in 1992--the most recent survey data available. Production costs and returns along with coefficients of variation (C.V.) by State are given in tables 1 to 7. Statistical reliability of the State-level peanut production cost estimates is summarized in table 8. Also included are selected farm characteristics and production practices (app. table 1), quantities of selected inputs (app. table 2), and average machine use in the production of peanuts (app. tables 3-9).

Background

USDA's Economic Research Service (ERS) annually estimates production costs and returns of major field crops (USDA, ERS, 1994). The estimates are calculated on a per-planted-acre basis and include both operator and landlord costs and returns. Costs are included only for the acreage planted with the intention of being harvested for nuts. ERS cost and return estimates exclude the effects of Government programs where possible so that policymakers may be informed as to production costs

and returns in the absence of programs. For peanuts, however, the effects of Government programs cannot be excluded or directly measured. The peanut program sets both the amount of production that will be supported at the quota price and the support rate. Farmers can negotiate the price of non-quota nuts and establish contracts for those nuts. Since growers must own or rent quota to be eligible for the support price, land and quota rents are functions of price, and the quota support price is adjusted based on the previous year's average cost of production, the effects of the program cannot be excluded.

Cost-of-production estimates reflect average production practices, yields, and prices paid and received by farmers. Per-acre costs vary widely among farmers due to differences in inputs, and the type and size of machinery used. This variability means that costs and returns for individual farmers may differ considerably from average estimates presented in this report. Consequently, users should understand the objectives and procedures of the ERS estimates. Also, note that while the differences between costs and returns determine the profitability of a given enterprise, they are not an adequate measure of the well-being of farms since most farms produce more than one commodity.

Structure of Accounts

The State-level per-acre production cost estimates included in this report conform to the current ERS definitions and structure of accounts. Production cost and return estimates are presented in the form of a commodity account, which lists gross value of production, variable cash expenses, fixed cash expenses, economic costs, and two measures of returns.

Value of peanut production is estimated by multiplying the harvest-period price times planted-acre yield. Harvest-period prices, rather than season-average prices, are used since season-average prices reflect marketing factors like storage (*Agricultural Prices, 1992*). Marketing is not a production cost, so storage costs are not included. Harvest-period prices are specified at the State level. Value of peanut hay production is valued directly from the survey, as each producer is asked for quantity produced and price received. Gross value of production includes quota and nonquota peanuts and peanut hay.

Variable cash expenses are those that are incurred only if production takes place. Expense items included in this category are seed, fertilizers, chemicals, custom operations, hired labor, fuel, electricity, lubrication, repairs, technical services, commercial drying, and purchased irrigation water. Costs associated with onfarm drying are reflected in costs for fuel, electricity, lubrication, repairs, and replacement.

Fixed expenses must be paid regardless of whether or not a crop is produced. Fixed expenses include general farm overhead, taxes, insurance, and interest on loans. Overhead costs consist of expenses for utilities (excluding water and electricity for irrigation), farm shop and office equipment and supplies, accounting and legal fees, blanket insurance policies, fence maintenance and repairs, motor vehicle registration, chemicals applied to maintain farm roads and ditches, and any other general expenses attributable to the entire farm business. Taxes are only on real estate and personal property and do not include Federal or State income taxes. Insurance is only for crop and livestock other than Federal crop insurance, the farm share of motor vehicle liability, and blanket insurance policies. Interest expenses include finance charges and service fees for loans on machinery, the farm share of motor vehicles, purchases of inputs, land contracts, mortgages, and any other loans secured by real estate.

Economic costs are long-term costs that reflect the production situation as if the operation fully owned all production inputs. An opportunity cost is calculated for all capital inputs, land and quota, whether owned, rented, or financed. Economic costs include variable cash expenses, general farm overhead, taxes and insurance, capital replacement, an imputed cost of capital invested in the production process, unpaid labor, land, and quota. Capital replacement cost represents a portion of the value of the machinery and equipment used up during the year in the production of a crop, plus an additional cost required to bring these items up to the same level of quality that they were at the beginning of the period.

Opportunity costs are imputed from values of capital, land, quota, and unpaid labor in alternative uses. The cost of operating capital is the expense of carrying input expenses from the time they are used until harvest. ERS imputes this cost at the 6-month U.S. Treasury bill rate, which was 5.44 percent in 1991. The cost of having capital invested in farm machinery and equipment (nonland capital) is measured using the longrun rate of return to agricultural production assets from current income, which was 3.55 percent in 1991. ERS values land in cost-of-production accounts at its rental value. The land rental rates are a composite of share (valued at the harvest-period price) and cash rental rates for a particular crop, minus real estate taxes that already have been included in other taxes and the value of inputs supplied by the landlord. Quota rental rates are also a composite of share (valued at the quota support price) and cash rental rates for peanuts. ERS imputes the value of unpaid labor (hired labor is a variable cash expense) at the wage rate for agricultural workers. Additional value of unpaid labor, such as for management and entrepreneurial skill, is treated as a residual return.

Two returns are included in each account. Gross value of production less cash expenses is the net cash return that measures the shortrun cash-flow position. Net cash return is an indication of the minimum return needed from a crop to keep it in production. Gross value of production less economic costs is the residual returns to management and risk that measures the longrun position of the enterprise. This returns measure is useful for assessing relative returns among commodities. Allocated returns shown in fig. 5 and fig. 6 is sum of the costs of capital, land, quota, and unpaid labor.

Data Sources

Production cost estimates are based on information obtained from the Farm Costs and Returns Survey (FCRS). The FCRS is a multiframe, stratified survey conducted annually by ERS and USDA's National Agricultural Statistics Service (NASS). Each year there are multiple versions of the FCRS: an in-depth, whole-farm version, and commodity cost-of-production (COP) versions. While all versions have questions about whole-farm expenses and income, each COP version gathers detailed information about input use, field operations, and production costs of a particular crop. Because of survey costs, USDA cannot undertake detailed surveys of every commodity each year. Thus, the FCRS covers each commodity about every 4 years. In nonsurvey years, production practices and technology are assumed to remain constant with the survey year. Costs are updated with price and yield data from the whole-farm versions of FCRS, ERS and NASS publications, and other data sources. Some variation in State-level yields between FCRS and NASS is due to survey intentions and sampling techniques.

Peanut production data were collected on the 1991 FCRS completed during February and March 1992. The peanut version of the 1991 FCRS contained questions on the organization and financial structure of the entire farming operation as well as questions about production practices and operating expenses that were specific to the peanut enterprise. Seven peanut-producing States were included in the 1991 FCRS peanut sample. The 402 respondents to the peanut version of the 1991 FCRS represent 15,282 farms that planted peanuts on 1.9 million acres and produced 4.8 billion pounds. The primary intent of the survey was to generate U.S. and regional average cost-of-production estimates. Therefore, most national- and regional-level estimates are statistically reliable. There was sufficient sample size to provide State-level estimates for all 7 peanut-producing States (app. table 1). Statistical reliability of these estimates is also examined (table 8).

Estimation Procedures

Procedures used to derive an estimate for a particular component of costs or returns are constrained by available data. Four general approaches were used to estimate the production costs: direct costing, allocation of whole-farm costs, valuing of input quantities, and indirect costing (fig. 1).

Direct costing is achieved by summarizing survey responses to questions about the amount paid for each item on a particular crop. This method is best suited for estimating components of variable costs such as fertilizers, chemicals, custom operations, hired labor, purchased irrigation water, technical services, and commercial drying.

Indirect costing involves the combination of survey information and engineering formulas. Detailed information is collected on the survey regarding the machinery complement used in production. The data collected include hours of machine use, acreage covered, type and size of machine, and type of fuel used. This information is used to support equations of technical relationships that describe fuel consumption, repair requirements, and replacement costs. Engineering formulas are modified to reflect technological advances as they occur.

Allocating whole-farm expenses occurs for inputs that are not specifically associated with production of a commodity. For example, expenses for overhead items, interest, taxes, and insurance cannot be directly attributed to the production of an individual farm commodity. Survey data on production, along with secondary price data, are used to determine each farm's total value of production. Expenses incurred by the whole farm for a particular input are then allocated to an enterprise based on the enterprise's share of the operation's total value of production.

Valuing quantities of inputs requires survey data of the physical quantities of inputs used in production. This approach is used for seed and unpaid labor. Costs are estimated by multiplying survey input quantities by State-level prices.

Components of economic costs, including operating capital, nonland capital, land, and peanut quota are estimated using a combination of these approaches. Operating capital cost is the sum of variable expenses times the 6-month Treasury bill rate. Nonland capital is the average machinery value times the longrun rate of return to farm sector assets. Land and quota costs include a combination of cash rental rates and landlords' net returns from share rental arrangements.

1991 Peanut Production Costs and Returns

At the U.S. level, per-acre peanut costs rose sharply in 1991 as seed costs soared. Drought in 1990 caused low seed germination, which drove the price of quality, high-germination seed peanuts to a record high. Increases in seed and fertilizer prices and hired labor costs made up most of the increase in variable cash expenses. At the U.S. level, 1991 total cash costs of producing peanuts were $375.03 per acre (or 15.2 cents per pound) and total economic costs were $738.36 per acre (or 29.9 cents per pound). For more details, refer to *Economic Indicators of the Farm Sector, Costs of Production--Major Field Crops & Livestock and Dairy, 1992.*

Per-acre costs and returns varied significantly among States. Variations in yields were due in part to weather patterns. Yield variations, together with differences in crop prices, translate into fluctuations in gross and net returns. Variations in production costs among States are due to differences in quantities and prices of inputs, variety grown, and several other production factors.

Peanut enterprise gross returns in 1991 ranged from $511.36 to $1,000.99 per planted acre. Gross returns exceeded total cash costs in all States. The highest gross returns were found for Virginia peanut farms due to significantly higher yields than the other States and to higher prices. Oklahoma had the lowest gross returns due to lower yields.

Total cash costs ranged from $393.95 in Oklahoma to $566.95 per planted acre in Virginia. High per acre costs for variable cash expenses (seed, fertilizers, chemicals, fuel and hired labor) in Virginia explain most of the difference. Virginia had the highest returns less cash costs at $434.04 per planted acre largely due to high yields and higher price.

Major variable cash expense items associated with peanut production include seed, fertilizers, and chemicals. Together these costs comprised about 50 to 70 percent of the total variable cash costs. Fuel and hired labor were also major variable cash items in Texas and Virginia. Hired labor was also a major variable cash cost in North Carolina. There was wide variation among States. Per-acre seed expense ranged from a low of $94.73 in Texas to a high of $119.31 in Virginia. Seeding rates explain most of the difference. Fertilizer expense per acre ranged from $35.50 in Oklahoma to $54.05 in Virginia. Chemical expense per acre ranged from $43.92 to $126.32, again in Oklahoma and Virginia.

Differences in per-acre chemical expenses were due to type and amount of chemicals used and proportion of peanut acres treated. Virginia peanut producers, with more onfarm drying, had higher fuel, labor and repair costs. Cost of custom operations in Oklahoma is higher due to higher use of custom application of chemicals and fertilizers and custom harvesting.

Oklahoma farms producing peanuts in 1991 had the lowest total variable cash costs among all States at $311.53 per acre. Relatively low seed, fertilizer, chemical, fuel, and hired labor costs accounted for most of the cost differences. Virginia producers had the highest variable cash costs at $473.54 per acre. Costs for seed, chemicals, and fuel were highest on Virginia peanut operations. North Carolina peanut producers had the highest cost of hired labor per acre.

Fixed cash costs ranged from $71.60 to $97.20 per planted acre. Peanut producers in North Carolina had the highest fixed cash costs due to high taxes and insurance, while the lowest fixed costs were estimated for Alabama due to lower tax, insurance, and overhead expenses.

Total economic costs ranged from $637.20 per acre in Florida to $925.15 per acre in Virginia. Land and quota costs in Virginia, Georgia, and North Carolina were highest among all States. Estimated returns to management and risk were positive in Virginia. North Carolina, and Florida, while returns to management and risk were negative in Alabama, Georgia, Oklahoma, and Texas.

On a per-pound basis, total cash costs were more than 20 cents per pound in Oklahoma and Texas and less than that in the other States surveyed. Total cash costs were only 16 cents per pound in Florida but the lowest price per pound was also in Florida. The largest single variable cash expense was for seed, at 5 cents per pound in Alabama, Georgia, and Oklahoma. North Carolina farmers reported seed expense of only 3 cents per pound. Land and quota rents pushed economic costs up to a high of 36 cents per pound in Oklahoma (for a residual return of negative 7 cents per pound) and to 24 cents per pound in Florida (1 cent below the peanut harvest-month price).

1991 Peanut Production Practices and Input Use

Peanut production practices vary according to regional climate, soil type, and variety grown. Seeding rates averaged over 100 pounds per acre in Virginia and North Carolina where Virginia peanuts are grown. Runner peanuts had average seeding rates of 90-100 pounds per acre and are grown in Alabama, Florida, and Georgia. Spanish and runner peanuts grown in Oklahoma and Texas had average seeding rates of 75 pounds per acre.

Two-thirds of peanut acres are irrigated in Oklahoma and Texas while more than three-fourths of peanut acres in the other five peanut-producing States were dryland. Fertilizer applications, particularly nitrogen, are heaviest in irrigated areas. Much less phosphorus was applied in North Carolina and Virginia than elsewhere but the application of gypsum, necessary for proper pod development in the large-kerneled Virginia peanuts, was highest in these States. Lime, to reduce soil acidity, was applied most heavily in Alabama. Insecticide use varied widely by State, from 25 percent of farms in Texas to 94 percent in Virginia. Oklahoma was the only State in which fewer than 95 percent of farmers used herbicides. Almost 60 percent of all farms in Oklahoma and Texas used fungicides, compared with 85 percent in North Carolina, and more than 90 percent in the other States. Acre treatments of fungicides were lowest in Oklahoma and highest in Georgia. Acre treatments of herbicides ranged from 1.8 in Texas to 3.5 in Alabama. Acre treatments of insecticides ranged from 0.5 in Oklahoma and Texas to 2.5 in Virginia.

Fewer than half the farms in Alabama, Florida, and North Carolina reported any custom operations, excluding commercial drying, compared with 76 percent in Oklahoma. The most-used custom operations were fertilizer and chemical applications. Commercial drying is fairly common in peanut production, but is not included in custom operations. Virginia operators dry a much larger proportion of their crop using their own equipment which is also reflected in higher fuel use, especially electricity, and higher repair and replacement costs.

Most peanut farmers also grew other crops in 1991. Acres planted to peanuts account for 12-29 percent of all acres operated. Most peanut farms in North Carolina, Virginia, and Georgia planted peanuts after corn, while half of peanut farms in Texas and Oklahoma planted peanuts after peanuts. Slightly more than one-fourth of peanut farms in Oklahoma planted peanuts after wheat, and slightly more than one-third of farms in Alabama and Florida planted peanuts after corn.

Land and quota tenure vary widely by State. Virginia, Oklahoma, and Texas farmers reported a combination of owned and cash- and share-rented land and quota. In Oklahoma and Texas, the highest percentages of both land and quota were owned. In Virginia, higher percentages of both land and quota were cash rented than owned. Share rental arrangements accounted for less than 10 percent of land and quota in Alabama, Florida, Georgia, and North Carolina.

Statistical Reliability of Estimates

Production cost data presented in this report include an estimate of the coefficient of variation for each item. The coefficient of variation (C.V.) is a measure of relative dispersion indicating the variability of the estimated sample mean. It takes into account the variation in each cost item and also the variation in the expanded number of peanut farms estimated from the sample. The coefficient of variation is defined as the standard deviation of the estimate divided by its mean and expressed as a percentage of the estimate. In general, the smaller the C.V. the greater the reliability of the estimate. Note that survey results can also be influenced by nonsampling errors which are not measurable nor known. Nonsampling errors can be introduced by enumerators, respondents, or survey design. Efforts were made to minimize the impact of nonsampling error, including the training of enumerators, review, and edit of survey data, and analysis of data for comparability and consistency.

Constructing confidence intervals around the mean is a method for examining the precision of the estimate. For example, the mean total cash costs of producing peanuts in Alabama is $426.64 per acre with a coefficient of variation of 2.74. The 95-percent confidence interval for this estimate is $403.73 to $449.55 per acre. We are 95-percent confident that this interval contains the true population mean of total cash costs for producing an acre of peanuts in Alabama. Confidence intervals tend to narrow as sample size increases (table 8).

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U.S. Department of Agriculture, Economic Research Service. *Economic Indicators of the Farm Sector: Costs of Production--Major Field Crops & Livestock and Dairy, 1992.* ECIFS 12-3. September 1994.

U.S. Department of Agriculture, National Agricultural Statistics Service. *Agricultural Prices. 1991 Summary.* June 1992.

_____. *Crop Production, 1991 Summary.* January 1992.

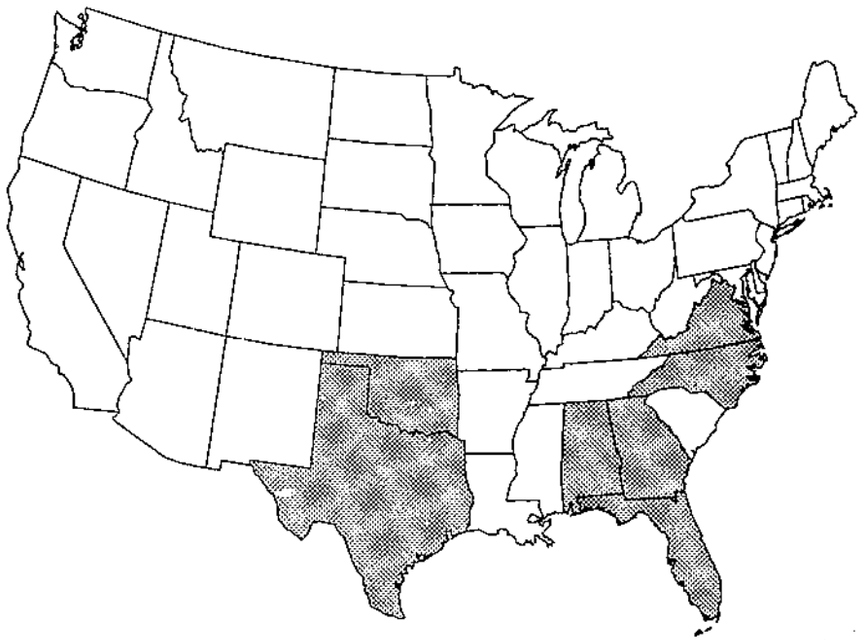
Figure 1

Approaches used to estimate the peanut cost-of-production components

Direct costing	Allocating whole-farm expenses	Valuing quantities of inputs	Indirect costing	Some combination of approaches
▸Fertilizers ▸Chemicals ▸Custom operations ▸Hired labor ▸Purchased irrigation water ▸Technical services ▸Commercial drying	▸General farm overhead ▸Interest ▸Taxes and insurance	▸Seed ▸Unpaid labor	▸Fuel, lubrication, electricity ▸Repairs ▸Capital replacement ▸Farm drying	▸Operating capital ▸Other nonland capital ▸Land ▸Quota

Figure 2

Major peanut producing States



Producers in the States shaded were surveyed about production practices and costs of production.

Figure 3

Peanut production, 1981-91

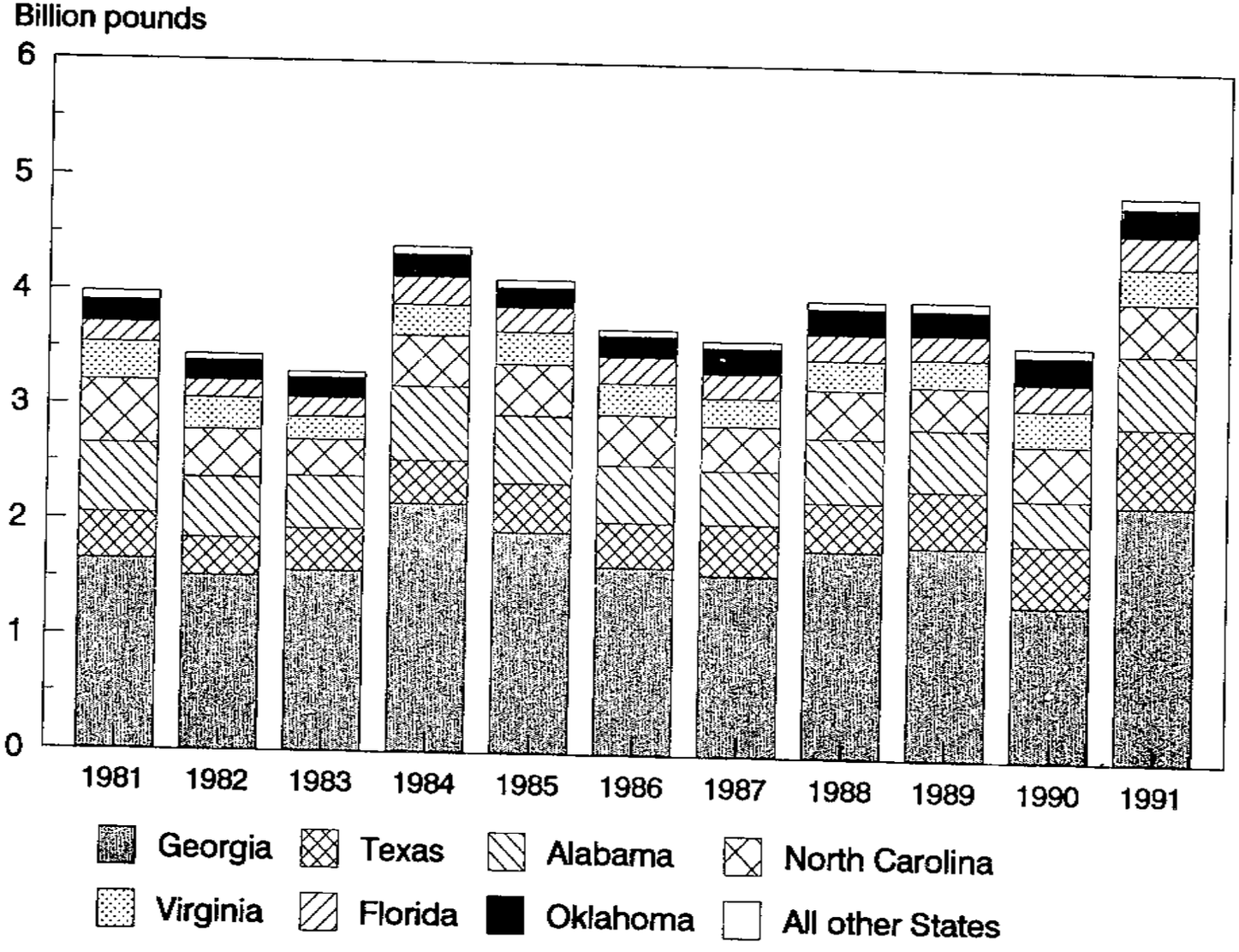


Figure 4

Peanut acreage, 1981-91

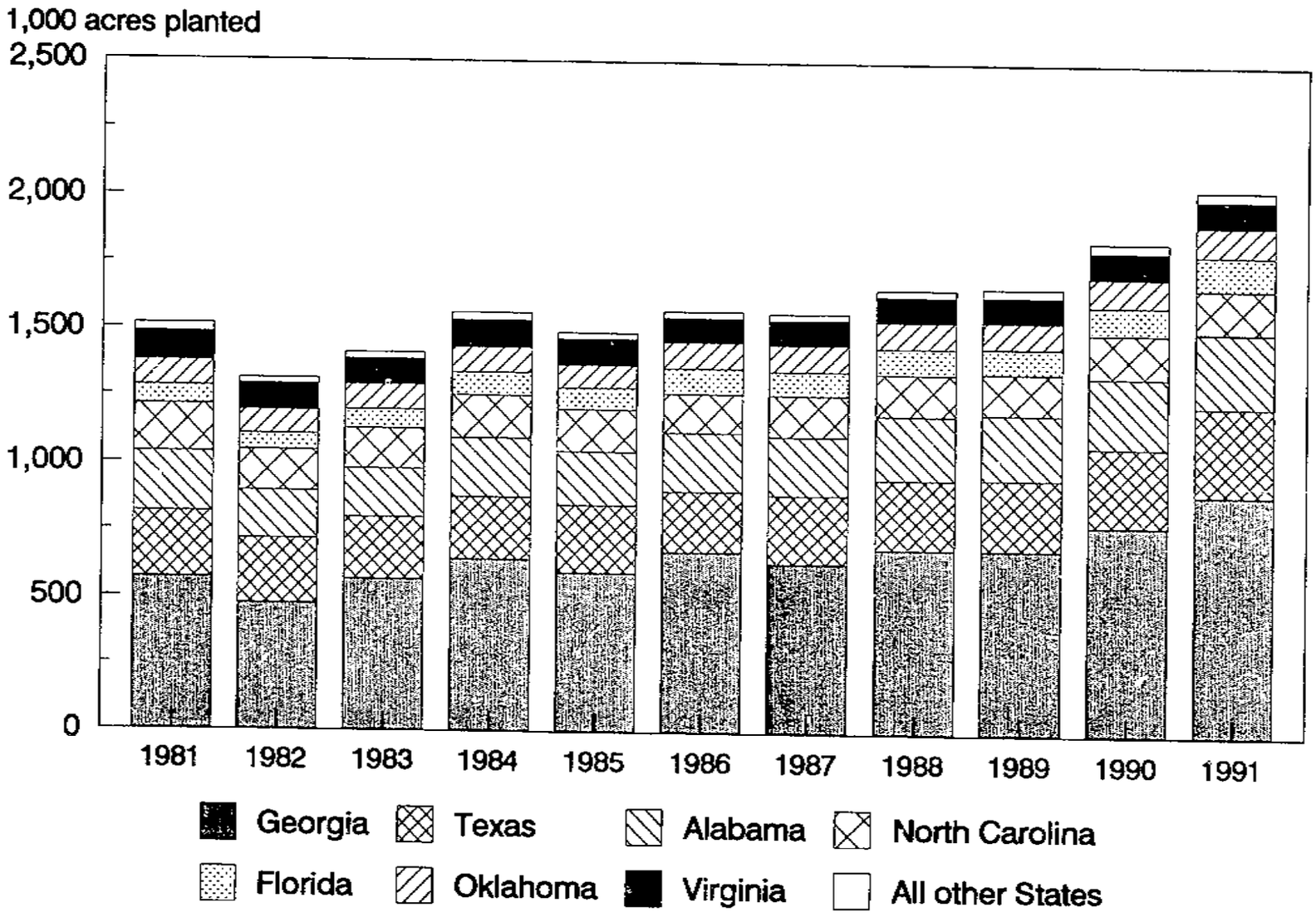


Figure 5

Peanut production costs per planted acre, 1991

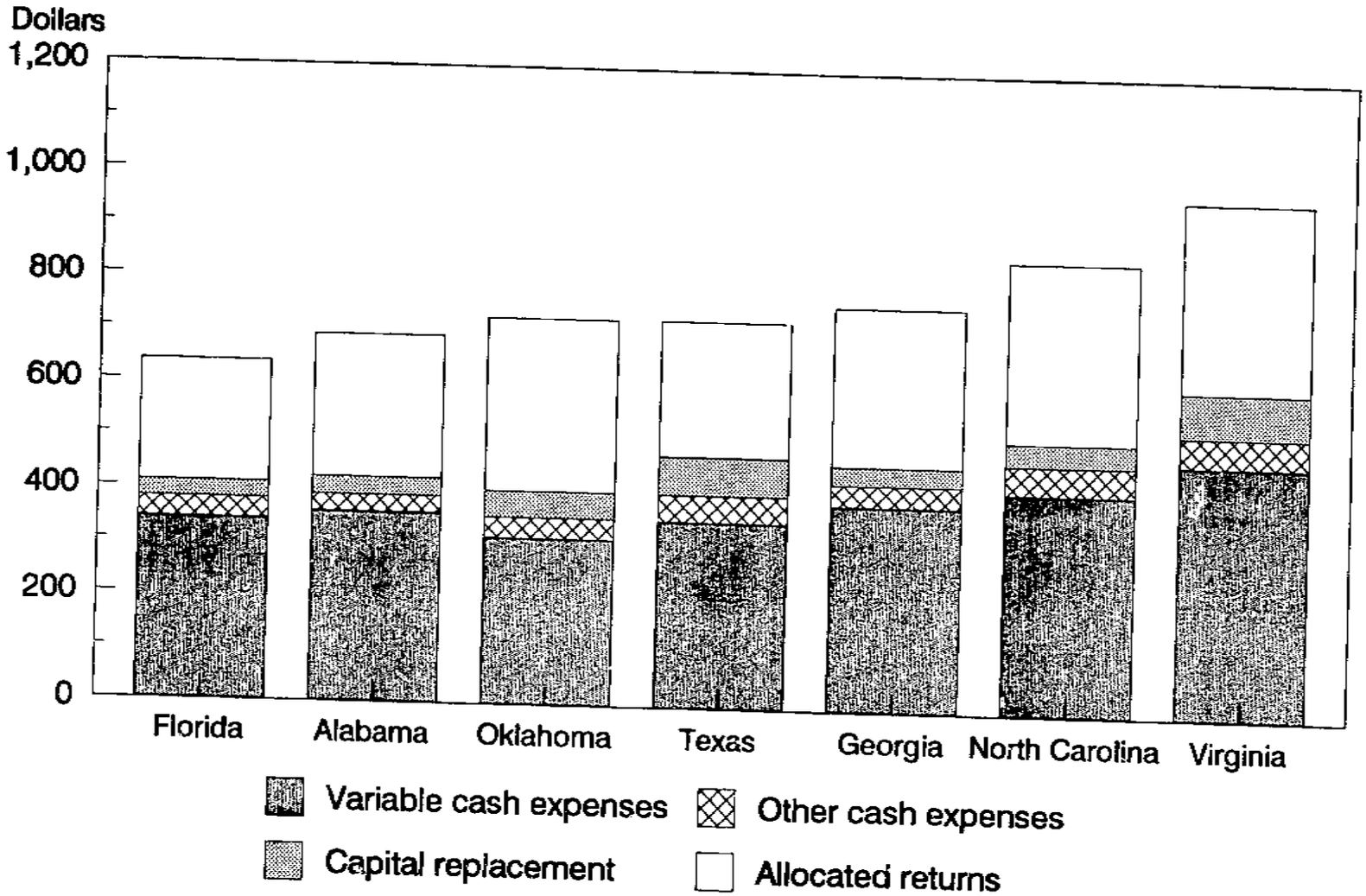


Figure 6

Peanut production costs per pound, 1991

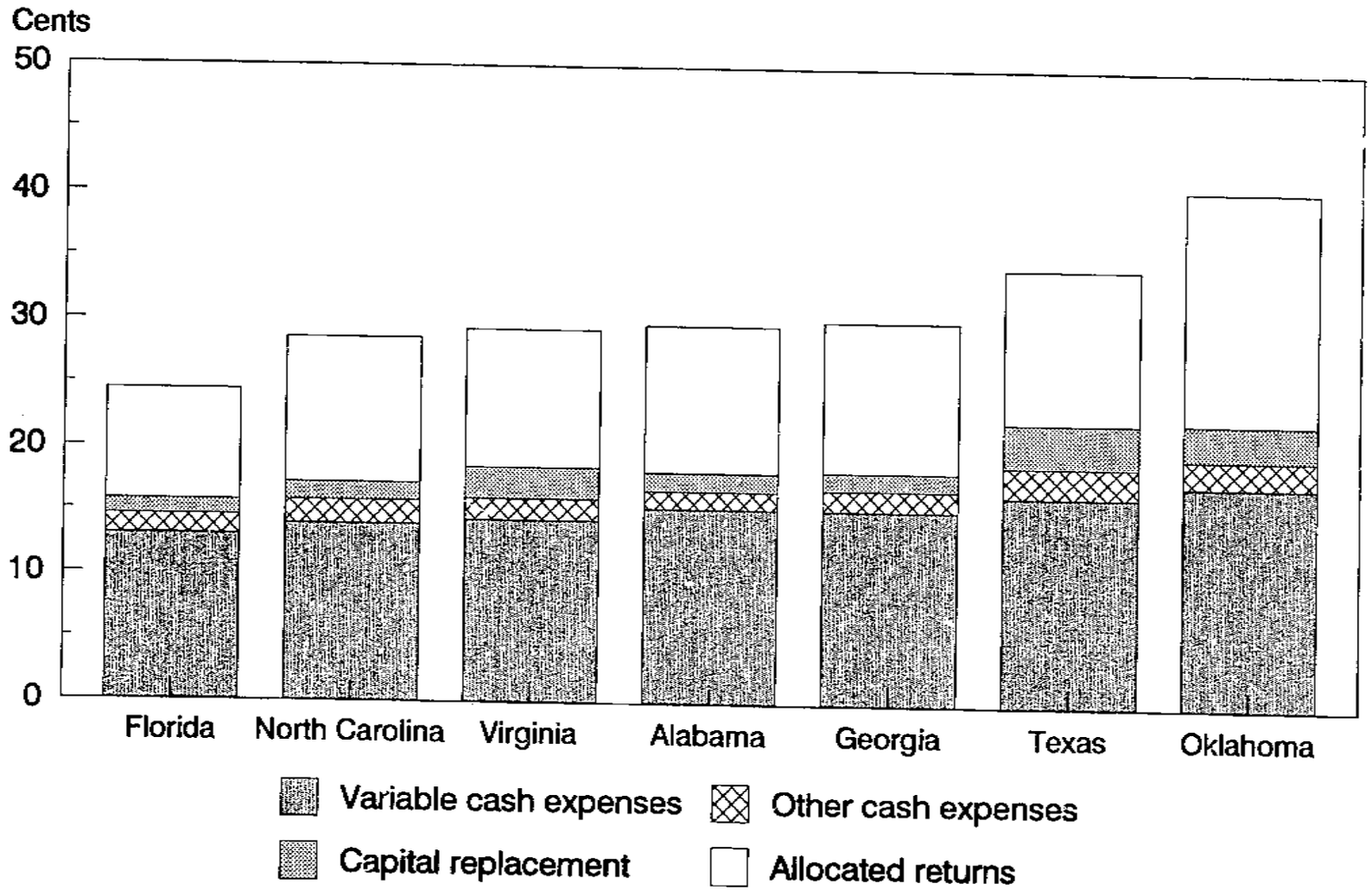


Table 1a--Peanut production cash costs and returns per planted acre with coefficients of variation, Alabama, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	648.90	na
Peanut hay	7.36	22.30
Total, gross value of production	656.26	na
Cash expenses:		
Seed	113.31	2.74
Fertilizer, lime, and gypsum	53.54	8.59
Chemicals	80.46	6.63
Custom operations	3.97	28.65
Fuel, lube, and electricity	33.80	4.11
Repairs	24.56	3.07
Hired labor	30.67	13.66
Commercial drying	14.51	20.45
Other variable cash expense 1/	0.23	97.61
Total, variable cash expenses	355.04	2.81
General farm overhead	20.91	9.50
Taxes and insurance	11.37	10.54
Interest	39.32	10.59
Total, fixed cash expenses	71.60	8.36
Total, cash expenses	426.64	2.74
Gross value of production less cash expenses	222.26	na
Harvest-period price (cents per pound)	0.28	na
Yield (pounds per planted acre)	2,317.50	2.54

Table 1b--Peanut production economic costs and returns per planted acre with coefficients of variation, Alabama, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	648.90	na
Peanut hay	7.36	22.30
Total, gross value of production	656.26	na
Economic (full-ownership) costs:		
Variable cash expenses	355.04	2.81
General farm overhead	20.91	9.50
Taxes and insurance	11.37	10.54
Capital replacement	34.02	3.30
Operating capital	9.66	2.81
Other nonland capital	17.29	3.22
Land	83.75	12.90
Quota	103.40	12.35
Unpaid labor	45.61	9.44
Total, economic (full-ownership) costs	681.06	3.47
Residual returns to management and risk	-24.80	na
Harvest-period price (cents per pound)	0.28	na
Yield (pounds per planted acre)	2,317.50	2.54

na = Not applicable. 1/ Purchased irrigation water.

Table 2a--Peanut production cash costs and returns per planted acre with coefficients of variation, Florida, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	650.55	na
Peanut hay	12.81	34.91
Total, gross value of production	663.36	na
Cash expenses:		
Seed	110.01	2.55
Fertilizer, lime, and gypsum	44.63	11.47
Chemicals	78.12	11.63
Custom operations	7.49	21.54
Fuel, lube, and electricity	30.50	5.90
Repairs	22.22	5.17
Hired labor	31.87	30.28
Commercial drying	14.52	24.36
Other variable cash expense 1/	0.00	na
Total, variable cash expenses	339.36	5.15
General farm overhead	21.35	14.47
Taxes and insurance	18.19	12.91
Interest	46.52	13.45
Total, fixed cash expenses	86.06	9.15
Total, cash expenses	425.42	4.94
Gross value of production less cash expenses	237.94	na
Harvest-period price (cents per pound)	0.25	na
Yield (pounds per planted acre)	2,602.21	5.09

Table 2b--Peanut production economic costs and returns per planted acre with coefficients of variation, Florida, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	650.55	na
Peanut hay	12.81	34.91
Total, gross value of production	663.36	na
Economic (full-ownership) costs:		
Variable cash expenses	339.36	5.15
General farm overhead	21.35	14.47
Taxes and insurance	18.19	12.91
Capital replacement	30.49	5.06
Operating capital	9.23	5.15
Other nonland capital	16.05	5.09
Land	84.98	10.62
Quota	83.01	16.25
Unpaid labor	34.54	18.71
Total, economic (full-ownership) costs	637.20	5.96
Residual returns to management and risk	26.16	na
Harvest-period price (cents per pound)	0.25	na
Yield (pounds per planted acre)	2,602.21	5.09

na = Not applicable. 1/ Purchased irrigation water.

Table 3a--Peanut production cash costs and returns per planted acre with coefficients of variation, Georgia, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	679.25	na
Peanut hay	4.87	28.75
Total, gross value of production	684.12	na
Cash expenses:		
Seed	118.30	2.67
Fertilizer, lime, and gypsum	43.12	5.56
Chemicals	104.86	5.93
Custom operations	7.59	18.92
Fuel, lube, and electricity	31.68	4.25
Repairs	24.68	3.01
Hired labor	40.89	14.71
Commercial drying	13.56	13.50
Other variable cash expense 1/	0.00	na
Total, variable cash expenses	384.69	2.85
General farm overhead	18.98	10.16
Taxes and insurance	22.04	6.43
Interest	51.98	10.88
Total, fixed cash expenses	93.00	7.45
Total, cash expenses	477.69	3.12
Gross value of production less cash expenses	206.43	na
Harvest-period price (cents per pound)	0.27	na
Yield (pounds per planted acre)	2,515.73	4.56

Table 3b--Peanut production economic costs and returns per planted acre with coefficients of variation, Georgia, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	679.25	na
Peanut hay	4.87	28.75
Total, gross value of production	684.12	na
Economic (full-ownership) costs:		
Variable cash expenses	384.69	2.85
General farm overhead	18.98	10.16
Taxes and insurance	22.04	6.43
Capital replacement	35.29	3.18
Operating capital	10.46	2.85
Other nonland capital	18.12	2.54
Land	99.00	14.45
Quota	127.82	9.23
Unpaid labor	38.74	8.97
Total, economic (full-ownership) costs	755.14	4.33
Residual returns to management and risk	-71.02	na
Harvest-period price (cents per pound)	0.27	na
Yield (pounds per planted acre)	2,515.73	4.56

na = Not applicable. 1/ Purchased irrigation water.

Table 4a--Peanut production cash costs and returns per planted acre with coefficients of variation, North Carolina, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	862.30	na
Peanut hay	6.10	38.69
Total, gross value of production	868.40	na
Cash expenses:		
Seed	99.42	5.13
Fertilizer, lime, and gypsum	46.10	9.93
Chemicals	98.00	7.45
Custom operations	8.65	32.78
Fuel, lube, and electricity	34.65	9.48
Repairs	26.55	7.24
Hired labor	80.82	27.78
Commercial drying	19.92	57.11
Other variable cash expense 1/	0.00	na
Total, variable cash expenses	414.11	6.71
General farm overhead	26.02	16.02
Taxes and insurance	29.19	12.99
Interest	41.99	28.19
Total, fixed cash expenses	97.20	14.37
Total, cash expenses	511.31	6.31
Gross value of production less cash expenses	357.09	na
Harvest-period price (cents per pound)	0.29	na
Yield (pounds per planted acre)	2,973.46	3.01

Table 4b--Peanut production economic costs and returns per planted acre with coefficients of variation, North Carolina, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	862.30	na
Peanut hay	6.10	38.69
Total, gross value of production	868.40	na
Economic (full-ownership) costs:		
Variable cash expenses	414.11	6.71
General farm overhead	26.02	16.02
Taxes and insurance	29.19	12.99
Capital replacement	41.96	6.14
Operating capital	11.26	6.71
Other nonland capital	19.85	6.10
Land	88.71	18.20
Quota	125.47	9.85
Unpaid labor	40.43	24.55
Total, economic (full-ownership) costs	797.01	4.46
Residual returns to management and risk	71.39	na
Harvest-period price (cents per pound)	0.29	na
Yield (pounds per planted acre)	2,973.46	3.01

na = Not applicable. 1/ Purchased irrigation water.

Table 5a--Peanut production cash costs and returns per planted acre with coefficients of variation, Oklahoma, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	499.85	na
Peanut hay	11.51	18.77
Total, gross value of production	511.36	na
Cash expenses:		
Seed	95.43	3.59
Fertilizer, lime, and gypsum	35.50	15.92
Chemicals	43.92	17.69
Custom operations	13.81	19.49
Fuel, lube, and electricity	37.24	9.04
Repairs	31.05	4.59
Hired labor	31.58	19.72
Commercial drying	22.40	13.71
Other variable cash expense 1/	0.60	57.14
Total, variable cash expenses	311.53	4.74
General farm overhead	24.28	16.79
Taxes and insurance	14.68	10.98
Interest	43.46	22.57
Total, fixed cash expenses	82.42	13.91
Total, cash expenses	393.95	5.91
Gross value of production less cash expenses	117.41	na
Harvest-period price (cents per pound)	0.28	na
Yield (pounds per planted acre)	1,785.17	8.44

Table 5b--Peanut production economic costs and returns per planted acre with coefficients of variation, Oklahoma, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	499.85	na
Peanut hay	11.51	18.77
Total, gross value of production	511.36	na
Economic (full-ownership) costs:		
Variable cash expenses	311.53	4.74
General farm overhead	24.28	16.79
Taxes and insurance	14.68	10.98
Capital replacement	49.96	7.69
Operating capital	8.47	4.74
Other nonland capital	26.58	5.16
Land	51.55	16.41
Quota	96.87	10.48
Unpaid labor	55.99	11.96
Total, economic (full-ownership) costs	639.92	5.20
Residual returns to management and risk	-128.56	na
Harvest-period price (cents per pound)	0.28	na
Yield (pounds per planted acre)	1,785.17	8.44

na = Not applicable. 1/ Purchased irrigation water.

Table 6a--Peanut production cash costs and returns per planted acre with coefficients of variation, Texas, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	591.80	na
Peanut hay	6.69	40.13
Total, gross value of production	598.49	na
Cash expenses:		
Seed	94.73	5.70
Fertilizer, lime, and gypsum	36.96	18.70
Chemicals	46.22	17.68
Custom operations	11.68	32.90
Fuel, lube, and electricity	52.00	14.47
Repairs	33.95	10.20
Hired labor	50.37	14.18
Commercial drying	19.91	12.85
Other variable cash expense 1/	2.58	58.71
Total, variable cash expenses	348.41	9.23
General farm overhead	37.74	14.20
Taxes and insurance	13.86	20.81
Interest	44.16	14.97
Total, fixed cash expenses	95.75	11.47
Total, cash expenses	444.16	8.79
Gross value of production less cash expenses	154.33	na
Harvest-period price (cents per pound)	0.28	na
Yield (pounds per planted acre)	2,113.58	9.89

Table 6b--Peanut production economic costs and returns per planted acre with coefficients of variation, Texas, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	591.80	na
Peanut hay	6.69	40.13
Total, gross value of production	598.49	na
Economic (full-ownership) costs:		
Variable cash expenses	348.41	9.23
General farm overhead	37.74	14.20
Taxes and insurance	13.86	20.81
Capital replacement	72.39	10.70
Operating capital	9.48	9.23
Other nonland capital	35.16	10.80
Land	70.83	12.44
Quota	83.74	13.97
Unpaid labor	39.72	12.69
Total, economic (full-ownership) costs	711.33	5.28
Residual returns to management and risk	-112.84	na
Harvest-period price (cents per pound)	0.28	na
Yield (pounds per planted acre)	2,113.58	9.89

na = Not applicable. 1/ Purchased irrigation water.

Table 7a--Peanut production cash costs and returns per planted acre with coefficients of variation, Virginia, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	993.39	na
Peanut hay	7.60	38.72
Total, gross value of production	1,000.99	na
Cash expenses:		
Seed	119.31	7.72
Fertilizer, lime, and gypsum	54.05	10.11
Chemicals	126.32	6.34
Custom operations	2.85	20.24
Fuel, lube, and electricity	76.13	8.54
Repairs	32.48	5.72
Hired labor	58.79	14.88
Commercial drying	3.61	55.76
Other variable cash expense 1/	0.00	na
Total, variable cash expenses	473.54	3.55
General farm overhead	31.25	14.06
Taxes and insurance	24.77	9.90
Interest	37.40	17.13
Total, fixed cash expenses	93.41	10.46
Total, cash expenses	566.95	3.66
Gross value of production less cash expenses	434.04	na
Harvest-period price (cents per pound)	0.30	na
Yield (pounds per planted acre)	3,311.31	2.45

Table 7b--Peanut production economic costs and returns per planted acre with coefficients of variation, Virginia, 1991

Item	1991	C.V.
	Dollars	Percent
Gross value of production:		
Peanuts	993.39	na
Peanut hay	7.60	38.72
Total, gross value of production	1,000.99	na
Economic (full-ownership) costs:		
Variable cash expenses	473.54	3.55
General farm overhead	31.25	14.06
Taxes and insurance	24.77	9.90
Capital replacement	82.77	4.93
Operating capital	12.88	3.55
Other nonland capital	33.78	4.47
Land	108.71	12.92
Quota	136.76	9.62
Unpaid labor	50.70	12.64
Total, economic (full-ownership) costs	925.15	3.26
Residual returns to management and risk	75.84	na
Harvest-period price (cents per pound)	0.30	na
Yield (pounds per planted acre)	3,311.31	2.45

na = Not applicable. 1/ Purchased irrigation water.

Table 8--Statistical reliability of peanut production cost estimates, by State, 1991

State	Sample size	95 percent confidence interval					
		Cash costs			Economic costs		
		Lower	Mean	Upper	Lower	Mean	Upper
		Dollars per planted acre					
Alabama	74	403.73	426.64	449.55	634.74	681.06	727.38
Florida	43	384.23	425.42	466.61	562.76	637.20	711.64
Georgia	99	448.48	477.69	506.90	691.05	755.14	819.23
North Carolina	37	448.07	511.31	574.55	727.34	797.01	866.68
Oklahoma	42	348.32	393.95	439.58	574.70	639.92	705.14
Texas	66	367.64	444.16	520.68	673.77	711.33	748.89
Virginia	41	526.28	566.95	607.62	866.04	925.15	984.26

Appendix table 1--Characteristics of FCRS peanut farms, by State, 1991

Item	Unit	Alabama	Florida	Georgia	North Carolina	Oklahoma	Texas	Virginia
Share of peanut-FCRS:								
Sample size	number	74	43	99	37	42	66	41
All farms	percent	10	6	51	13	6	9	5
Total production	percent	12	6	47	10	4	14	7
Acreage and yield								
Total operated acreage	acres	575	493	785	649	874	1443	618
Peanut acres planted	acres	165	126	114	79	114	236	132
Yield - actual	pounds per acre	2,318	2,602	2,516	2,973	1,785	2,114	3,311
Yield - expected	pounds per acre	2,865	3,109	3,127	3,023	2,328	2,769	3,188
Peanut acreage - tenure:								
Percent owned	percent of acres	26	46	40	35	40	50	17
Percent cash rented	percent of acres	67	53	59	60	32	29	69
Percent share rented	percent of acres	7	1	1	5	28	19	12
Peanut acreage - use:								
Percent dryland	percent of acres	95	89	74	97	28	38	98
Percent irrigated	percent of acres	5	11	26	3	72	62	2
Percent fallow	percent of acres	12	28	8	7	2	23	4
Previous crop:								
Corn	percent of farms	35	42	57	70	0	3	78
Cotton	percent of farms	0	19	1	19	7	9	0
Oats	percent of farms	7	0	1	0	0	5	0
Peanuts	percent of farms	15	7	8	0	50	54	2
Rye	percent of farms	4	2	4	0	2	0	0
Sorghum	percent of farms	5	7	2	0	2	6	2
Soybeans	percent of farms	5	0	9	5	0	0	5
Wheat	percent of farms	3	2	6	0	29	8	2
Fallow	percent of farms	16	16	11	0	10	8	7
Other	percent of farms	9	5	1	5	0	8	2
Peanut quota - tenure:								
Percent owned	percent of pounds	46	57	39	40	70	76	26
Percent cash rented	percent of pounds	49	42	60	56	16	13	62
Percent share rented	percent of pounds	5	1	1	4	13	10	12

Note : Data may not add due to rounding or omission of possible categories.

Appendix table 2--Input use of FCRS-peanut farms, by state, 1991

Item	Unit	Alabama	Florida	Georgia	North Carolina	Oklahoma	Texas	Virginia
Seed								
Rate-all acres	pounds per acre	94	89	97	105	75	75	113
Percent homegrown seed	percent	1	2	8	8	0	1	41
Percent purchased seed	percent	99	98	92	92	100	98	59
Fertilizer use:								
Any fertilizer	percent of farms	89	97	95	79	80	90	71
Nitrogen	percent of farms	80	52	85	51	90	90	39
Phosphorus	percent of farms	89	97	95	62	88	88	67
Potassium	percent of farms	88	93	95	77	77	83	61
Lime	percent of farms	75	51	60	59	10	12	59
Gypsum	percent of farms	4	15	50	93	10	1	87
Fertilizer use:								
Nitrogen	pounds per acre	16	8	15	8	35	46	6
Phosphorus	pounds per acre	45	46	49	23	49	55	28
Potassium	pounds per acre	73	69	77	71	43	36	54
Lime	tons per acre	1.0	.7	.5	.8	.1	.1	.7
Gypsum	tons per acre	*	.1	.2	1.2	.2	*	1.6
Chemical use:								
Insecticides	percent of farms	45	61	53	85	28	25	94
Herbicides	percent of farms	97	100	99	95	86	96	100
Fungicides	percent of farms	95	96	97	84	59	58	92
Other chemicals	percent of farms	3	9	8	29	2	11	37
Herbicide	acre-treatments	3.5	3.2	3.4	3.4	2.0	1.8	3.1
Fungicide	acre-treatments	4.1	4.3	5.0	3.6	1.6	2.7	2.9
Insecticide	acre-treatments	.9	1.3	1.2	1.9	.5	.5	2.5
Custom operations:								
Any custom operations	percent of farms	43	44	54	46	76	52	59
Land prep/cultivation	percent of farms	1	0	1	11	5	0	0
Chemicals	percent of farms	8	14	19	16	52	29	12
Fertilizer	percent of farms	24	21	22	27	45	21	34
Harvesting	percent of farms	5	14	16	14	24	14	0
Hauling	percent of farms	0	0	1	8	14	15	0
Drying:								
Custom	percent of pounds	48	52	55	26	77	73	8
Own equipment	percent of pounds	48	42	17	61	10	3	92
Field dried	percent of pounds	4	6	28	13	13	24	0
Hauling:								
Own truck	percent of pounds	18	19	16	22	57	35	27
Own wagon	percent of pounds	68	76	74	59	17	47	65
Custom firm's truck	percent of pounds	13	5	10	16	26	18	8
Fuel use:								
Diesel	gallons per acre	21	19	21	17	23	35	31
Gasoline	gallons per acre	7	6	8	11	11	8	12
LP gas	gallons per acre	5	5	3	6	7	7	15
Natural gas	1000 cubic feet per acre	4	0	3	0	5	9	11
Electricity	kilowatt hours per acre	0	0	3	0	0	131	303
Unpaid labor	hours per acre	7	5	7	7	10	7	9

* = Less than 0.1.

Appendix table 3--Alabama peanuts: Average machinery use per planted acre, 1991

Machinery	Times-over	Width	Tractor
	Number	Feet	Horsepower
Chisel plow	0.03	7	102
Disk plow	0.53	12	109
Moldboard plow, regular	0.47	5	98
Moldboard plow, two-way	0.52	5	109
Subsoil chisel plow	0.01	11	109
Disk chisel (mulch tiller)	0.09	12	85
Offset disk, heavy duty	0.12	13	120
Offset disk, light duty	0.01	10	85
One-way (disk tiller)	0.05	12	96
Single disk	0.54	13	108
Tandem disk, plowing	0.40	12	103
Tandem disk, regular	1.06	12	110
Field cultivator	1.12	12	92
Furrow-out cultivator	0.05	20	70
Rotary hoe	0.01	10	110
Row cultivator	0.51	10	83
Rolling cultivator	0.02	11	69
Duckfoot cultivator	0.31	11	97
Marker (cultivator)	0.03	13	125
Field conditioner (scratcher)	0.11	12	104
Finishing harrow	0.03	20	155
Flex-tine harrow (coil)	0.01	12	130
Roto-tiller	0.01	5	80
Roterra	0.01	12	125
Fertilizer applicator attached to implement	0.20	11	76
Self-propelled fertilizer spreader	0.03	40	--
Truck fertilizer spreader trailer mounted	0.05	24	--
Dry fertilizer applicator tractor mounted	0.02	11	76
Anhydrous fertilizer applicator trailer mounted	0.01	30	105
Dry fertilizer spreader trailer mounted	0.05	25	74
Chemical applicator attached to implement	1.22	17	43
Chemical applicator tractor mounted	5.11	18	83
Chemical applicator trailer mounted	1.05	23	88
Broadcast seeder	0.02	7	91
Drill, plain, disc (grain)	0.19	12	98
Drill, press, disc or hoe	0.01	10	90
Planter (regular)	0.89	10	88
Planter (air-delivery)	0.11	9	92
Combine, row heads pto/motor mounted	0.02	5	120
Rotary mower	0.05	8	88
Peanut combine (pto)	0.97	5	95
Peanut digger-shaker	0.29	6	94
Peanut shaker-inverter	0.73	5	100
Peanut reshaker-conditioner	0.02	10	70
Peanut vine cutter	0.03	5	115
Peanut wagon	0.07	10	43

Note: Machine operations listed are not in sequence.
Machines used in custom operations are excluded.
Machines are repeated because they are different in size or pulled by tractors of different size (horsepower).
-- = Indicates machines are self-propelled, in tandem, or pulled by truck.
Width = Indicates the swath or width of the area covered by the machine, which is not necessarily the structural width of the machine.
Times-over = Total acres covered in an operation divided by planted acres of the crop. Note that hours per acre given for land forming equipment such as backhoe, disk border maker, ditcher, ditch closer, levee plow disk, rear-mounted blade, and quarter drain machines.
Source: 1991 Farm Costs and Returns Survey, USDA.

Appendix table 4--Florida peanuts: Average machinery use per planted acre, 1991

Machinery	Times-over	Width	Tractor
	Number	Feet	Horsepower
Chisel plow	0.02	8	93
Deep ripper-subsoiler	0.01	7	122
Disk plow	0.38	12	101
Moldboard plow, regular	0.99	6	111
Moldboard plow, two-way	0.01	6	105
Disk chisel (mulch tiller)	0.02	17	101
Offset disk, heavy duty	0.05	11	105
Offset disk, light duty	0.02	8	135
One-way (disk tiller)	0.11	12	150
Tandem disk, plowing	0.20	10	89
Tandem disk, regular	1.39	14	119
Field cultivator	0.24	13	126
Rotary hoe	0.14	10	76
Row cultivator	0.27	11	92
Duckfoot cultivator	0.28	10	110
Finishing harrow	0.01	14	135
Rotovator-bedder	0.01	12	122
Roterra	0.01	10	105
Truck fertilizer spreader trailer mounted	0.02	40	135
Dry fertilizer applicator tractor mounted	0.66	16	88
Liquid fertilizer applicator tractor mounted	0.05	11	96
Dry fertilizer spreader trailer mounted	0.14	13	88
Chemical applicator attached to implement	0.05	18	77
Chemical applicator, small self-propelled	0.34	40	--
Chemical applicator, small truck skid mounted	0.54	24	72
Chemical applicator tractor mounted	2.56	18	90
Chemical applicator trailer mounted	3.42	20	82
Broadcast seeder	0.02	8	84
Drill, plain, disc (grain)	0.07	12	190
Bed-shaper planter	0.15	11	125
Planter (regular)	0.82	11	93
Planter (air-delivery)	0.01	10	75
Rotary mower	0.04	10	113
Laser planer	0.03	10	118
Peanut combine (pto)	0.89	6	111
Peanut digger-shaker	0.39	10	120
Peanut shaker-inverter	0.51	6	101
Peanut reshaker-conditioner	0.01	5	105
Peanut vine cutter	0.06	8	66
Peanut wagon	0.02	8	--

Note: Machine operations listed are not in sequence.
Machines used in custom operations are excluded.
Machines are repeated because they are different in size or pulled by tractors of different size (horsepower).
-- = Indicates machines are self-propelled, in tandem, or pulled by truck.
Width = Indicates the swath or width of the area covered by the machine, which is not necessarily the structural width of the machine.
Times-over = Total acres covered in an operation divided by planted acres of the crop. Note that hours per acre given for land forming equipment such as backhoe, disk border maker, ditcher, ditch closer, levee plow disk, rear-mounted blade, and quarter drain machines.

Source: 1991 Farm Costs and Returns Survey, USDA.

Appendix table 5--Georgia peanuts: Average machinery use per planted acre, 1991

Machinery	Times-over	Width	Tractor
	Number	Feet	Horsepower
Chisel plow	0.13	11	121
Coulter-chisel plow	0.01	5	120
Disk plow	0.06	11	86
Moldboard plow, regular	0.26	6	104
Moldboard plow, two-way	0.75	5	132
Subsoil chisel plow	0.09	13	124
Disk chisel (mulch tiller)	0.01	30	125
Offset disk, heavy duty	0.28	16	124
Offset disk, light duty	0.04	13	108
Single disk	0.14	19	155
Tandem disk, plowing	0.20	13	106
Tandem disk, regular	1.27	15	126
Field cultivator	1.11	11	99
Rotary hoe	0.02	10	106
Row cultivator	0.34	10	77
Rolling cultivator	0.01	10	100
Duckfoot cultivator	0.07	10	96
Marker (cultivator)	0.11	11	116
Field conditioner (scratcher)	0.14	14	98
Finishing harrow	0.13	12	112
Flex-tine harrow (coil)	0.09	17	115
Multi-weeder	0.01	13	100
Spike tooth harrow	0.03	14	160
Springtooth harrow	0.08	15	130
Bedder shaper	0.11	15	130
Bedder (disk)	0.03	9	100
Bedder disk-hipper	0.01	10	111
Rotovator-bedder	0.09	11	116
Subsoiler-bedder (hipper-ripper)	0.05	12	126
Landall, do-all	0.03	14	153
Roto-tiller	0.26	11	109
Truck fertilizer spreader trailer mounted	0.09	42	--
Dry fertilizer applicator tractor mounted	0.07	20	79
Dry fertilizer spreader trailer mounted	0.02	38	74
Aerial chemical application	0.14	38	--
Chemical applicator attached to implement	0.42	28	62
Chemical applicator, large self-propelled	0.03	33	--
ATV/motorcycle	0.15	19	--
Chemical applicator, small self-propelled	0.53	33	--
Chemical applicator tractor mounted	3.88	21	81
Chemical applicator trailer mounted	1.14	31	81
Broadcast seeder	0.01	35	--
Drill, plain, disc (grain)	0.01	11	102
Bed-shaper planter	0.06	8	129
Planter (no-till)	0.01	10	115
Planter (regular)	0.69	10	97
Planter (air-delivery)	0.31	14	134
Rotary mower	0.01	10	80
Shredder, rotary	0.02	6	67
Peanut combine (pto)	0.95	5	119
Peanut digger-shaker	0.17	5	99
Peanut shaker-inverter	0.77	7	112
Peanut reshaker-conditioner	0.01	10	130
Peanut vine cutter	0.09	7	55
Peanut wagon	0.01	14	100

Note: Machine operations listed are not in sequence.
Machines used in custom operations are excluded.
Machines are repeated because they are different in size or pulled by tractors of different size (horsepower).
-- = Indicates machines are self-propelled, in tandem, or pulled by truck.
Width = Indicates the swath or width of the area covered by the machine, which is not necessarily the structural width of the machine.
Times-over = Total acres covered in an operation divided by planted acres of the crop. Note that hours per acre given for land forming equipment such as backhoe, disk border maker, ditcher, ditch closer, levee plow disk, rear-mounted blade, and quarter drain machines.

Source: 1991 Farm Costs and Returns Survey, USDA.

Appendix table 6--North Carolina peanuts: Average machinery use per planted acre, 1991

Machinery	Times-over	Width	Tractor
	Number	Feet	Horsepower
Chisel plow	0.10	10	115
Coulter-chisel plow	0.01	4	90
Disk plow	0.19	14	103
Moldboard plow, regular	0.40	8	73
Moldboard plow, two-way	0.56	9	118
Offset disk, heavy duty	0.09	21	140
Offset disk, light duty	0.04	8	53
Single disk	0.14	12	100
Tandem disk, plowing	0.13	12	95
Tandem disk, regular	1.85	17	133
Field cultivator	1.18	15	95
Rotary hoe	0.05	10	120
Row cultivator	0.01	7	32
Duckfoot cultivator	0.18	8	59
Field conditioner (scratcher)	0.15	14	80
Multi-weeder	0.05	15	97
Bedder shaper	0.29	12	116
Bedder (disk)	0.05	10	100
Bedder disk-hipper	0.07	20	190
Bedder disk-row	0.09	23	88
Seedbed roller	0.01	10	105
Subsoiler-bedder (hipper-ripper)	0.22	16	159
Roto-tiller	0.10	24	86
Fertilizer applicator attached to implement	0.25	14	--
Self-propelled fertilizer spreader	0.10	12	--
Truck fertilizer spreader trailer mounted	0.06	34	44
Anhydrous fertilizer applicator tractor mounted	0.01	12	--
Dry fertilizer applicator tractor mounted	0.21	15	27
Dry fertilizer spreader trailer mounted	0.20	28	70
Liquid fertilizer applicator trailer mounted	0.03	35	100
Chemical applicator attached to implement	1.13	16	12
Chemical applicator, large self-propelled	0.05	30	--
Chemical applicator, small self-propelled	2.39	36	--
Chemical applicator tractor mounted	3.30	21	60
Chemical applicator trailer mounted	0.97	20	67
Broadcast seeder	0.05	24	54
Bed-shaper planter	0.24	15	123
Lister-bedder planter	0.01	10	90
Planter (regular)	0.75	12	78
Planter (ridge till)	0.05	15	85
Baler, pto small	0.02	10	90
Rotary mower	0.28	9	103
Mower conditioner, self-propelled	0.05	12	--
Corrugator	0.12	1	100
Peanut combine (pto)	0.98	6	87
Peanut digger-shaker	0.60	7	103
Peanut shaker-inverter	0.36	7	113
Peanut reshaker-conditioner	0.44	11	72
Peanut vine cutter	0.26	7	15

Note: Machine operations listed are not in sequence.
Machines used in custom operations are excluded.
Machines are repeated because they are different in size or pulled by tractors of different size (horsepower).
-- = Indicates machines are self-propelled, in tandem, or pulled by truck.
Width = Indicates the swath or width of the area covered by the machine, which is not necessarily the structural width of the machine.
Times-over = Total acres covered in an operation divided by planted acres of the crop. Note that hours per acre given for land forming equipment such as backhoe, disk border maker, ditcher, ditch closer, levee plow disk, rear-mounted blade, and quarter drain machines.

Source: 1991 Farm Costs and Returns Survey, USDA.

Appendix table 7--Oklahoma peanuts: Average machinery use per planted acre, 1991

Machinery	Times-over	Width	Tractor
	Number	Feet	Horsepower
Chisel plow	0.16	11	134
Coulter-chisel plow	0.01	15	110
Deep ripper- subsoiler	0.01	5	86
Disk plow	0.31	17	155
Moldboard plow, regular	0.91	7	115
Moldboard plow, two-way	0.21	5	86
Stubble-mulch plow	0.03	11	100
Subsoil chisel plow	0.01	10	115
Disk chisel (mulch tiller)	0.14	14	104
Offset disk, heavy duty	0.31	15	137
Offset disk, light duty	0.06	9	78
One-way (disk tiller)	0.04	12	119
Single disk	0.08	11	87
Tandem disk, plowing	0.36	12	89
Tandem disk, regular	1.23	13	103
Field cultivator	1.04	15	115
Furrow-out cultivator	0.21	10	70
Rotary hoe	0.41	12	98
Row cultivator	0.13	10	83
Rolling cultivator	0.20	9	82
Duckfoot cultivator	0.21	8	104
Field conditioner (scratcher)	0.12	19	108
Finishing harrow	0.06	15	--
Multi-weeder	0.02	12	135
Rail, pipe, log, plank	0.06	12	--
Culti-mulcher (roller)	0.02	20	72
Spike tooth harrow	0.03	12	81
Springtooth harrow	0.61	26	123
Powered spike tooth harrow	0.07	18	150
Bedder shaper	0.02	8	75
Bedder disk-hipper	0.01	40	100
Fertilizer applicator attached to implement	0.48	11	23
Truck fertilizer spreader trailer mounted	0.12	40	19
Anhydrous fertilizer applicator tractor mounted	0.01	20	126
Dry fertilizer applicator tractor mounted	0.04	40	104
Liquid fertilizer applicator tractor mounted	0.05	16	76
Anhydrous fertilizer applicator trailer mounted	0.01	10	86
Dry fertilizer spreader trailer mounted	0.03	40	58
Chemical applicator attached to implement	0.70	13	47
Chemical applicator tractor mounted	0.88	18	80
Chemical applicator trailer mounted	0.45	27	116
Drill, air delivery	0.02	8	40
Drill, plain, disc (grain)	0.16	11	84
Drill, press, disc or hoe	0.11	13	65
Bed-shaper planter	0.11	11	100
Lister-bedder planter	0.01	10	75
Planter (no-till)	0.06	11	95
Planter (regular)	0.82	10	88
Combine, pto- motor mounted	0.02	5	90
Combine, row heads pto/motor mounted	0.04	5	68
Baler, pto large	0.05	3	88
Baler, pto small	0.04	3	86
Rake, side delivery	0.04	7	50
Rear mounted blade	0.02	6	120
Peanut combine (pto)	0.91	5	110
Peanut digger-shaker	0.48	6	102
Peanut shaker-inverter	0.60	6	102
Peanut reshaker-conditioner	0.18	9	89
Peanut vine cutter	0.01	5	120

Note: Machine operations listed are not in sequence.
Machines used in custom operations are excluded.
Machines are repeated because they are different in size or pulled by tractors of different size (hp).
-- = Indicates machines are self-propelled, in tandem, or pulled by truck.
Width = Indicates the swath or width of the area covered by the machine, which is not necessarily the structural width of the machine.
Times-over = Total acres covered in an operation divided by planted acres of the crop. Note that hours per acre given for land forming equipment such as backhoe, disk border maker, ditcher, ditch closer, levee plow disk, rear-mounted blade, and quarter drain machines.
Source: 1991 Farm Costs and Returns Survey, USDA.

Appendix table 8--Texas peanuts: Average machinery use per planted acre, 1991

Machinery	Times-over	Width	Tractor
	Number	Feet	Horsepower
Chisel plow	0.08	12	106
Coulter-chisel plow	0.01	8	63
Disk plow	0.10	12	101
Moldboard plow, regular	0.66	7	111
Moldboard plow, two-way	0.34	6	131
Subsoil chisel plow	0.13	12	124
Disk chisel (mulch tiller)	0.01	11	87
Offset disk, heavy duty	0.20	13	116
One-way (disk tiller)	0.02	10	85
Tandem disk, plowing	0.31	13	112
Tandem disk, regular	1.07	13	106
Field cultivator	1.18	15	102
Furrow-out cultivator	0.13	21	150
Rotary hoe	0.04	9	99
Row cultivator	0.53	18	120
Rolling cultivator	0.76	13	98
Duckfoot cultivator	0.42	16	106
Marker (cultivator)	0.02	6	87
Field conditioner (scratcher)	0.01	14	120
Rod weeder	0.06	29	158
Springtooth harrow	0.12	36	131
Bedder shaper	0.15	12	95
Bedder (disk)	0.19	13	102
Bedder disk-hipper	0.05	12	101
Bedder disk-row	0.07	16	142
Lister (middle-buster)	0.33	16	116
Rotovator-bedder	0.01	15	87
Roller packer attachment	0.03	13	146
Roller packer flat roller	0.02	15	80
Landall, do-all	0.38	18	183
Roterra	0.01	15	112
Fertilizer applicator attached to implement	0.41	13	20
Truck fertilizer spreader trailer mounted	0.01	40	80
Anhydrous fertilizer applicator tractor mounted	0.21	33	86
Dry fertilizer applicator tractor mounted	0.09	26	65
Anhydrous fertilizer applicator trailer mounted	0.04	23	155
Dry fertilizer spreader trailer mounted	0.20	26	80
Liquid fertilizer applicator trailer mounted	0.04	30	125
Aerial chemical application	0.37	53	--
Chemical applicator attached to implement	0.91	14	52
Chemical applicator, small self-propelled	0.70	40	--
Chemical applicator tractor mounted	1.79	20	95
Chemical applicator trailer mounted	0.04	34	113
Broadcast seeder	0.10	33	78
Drill, lister	0.01	10	79
Drill, no-till, minimum-till	0.01	12	120
Drill, plain, disc (grain)	0.13	13	91
Bed-shaper planter	0.12	12	91
Lister-bedder planter	0.10	12	81
Planter (no-till)	0.01	10	104
Planter (regular)	0.60	14	97
Planter (air-delivery)	0.32	16	119
Baler, pto large	0.02	7	75
Baler, pto small	0.01	4	65
Rotary mower	0.09	15	95
Rake, side delivery	0.13	7	74
Rake, wheel	0.02	12	107
Land plane-leveler	0.05	24	180
Shredder, rotary	0.06	10	112
Stalk shredder	0.25	13	120

Continued--

Appendix table 8--Texas peanuts: Average machinery use per planted acre, 1991--continued

Machinery	Times-over	Width	Tractor
	Number	Feet	Horsepower
Peanut combine (pto)	1.17	6	111
Peanut digger-shaker	0.53	7	104
Peanut shaker-inverter	0.77	6	98
Peanut reshaker-conditioner	0.08	11	93
Peanut vine cutter	0.13	5	97

Note: Machine operations listed are not in sequence.
Machines used in custom operations are excluded.
Machines are repeated because they are different in size or pulled by tractors of different size (hp).
-- = Indicates machines are self-propelled, in tandem, or pulled by truck.
Width = Indicates the swath or width of the area covered by the machine, which is not necessarily the structural width of the machine.
Times-over = Total acres covered in an operation divided by planted acres of the crop. Note that hours per acre given for land forming equipment such as backhoe, disk border maker, ditcher, ditch closer, levee plow disk, rear-mounted blade, and quarter drain machines. Source: 1991 Farm Costs and Returns Survey, USDA.

Appendix table 9--Virginia peanuts: Average machinery use per planted acre, 1991

Machinery	Times-over	Width	Tractor
	Number	Feet	Horsepower
Chisel plow	0.08	7	96
Disk plow	0.37	14	124
Moldboard plow, regular	0.44	6	114
Moldboard plow, two-way	0.51	6	127
Subsoil chisel plow	0.03	12	125
Disk chisel (mulch tiller)	0.09	13	93
Offset disk, heavy duty	0.24	12	107
Offset disk, light duty	0.01	16	100
Single disk	0.01	10	67
Tandem disk, plowing	0.40	16	130
Tandem disk, regular	1.03	17	129
Field cultivator	1.02	12	92
Rotary hoe	0.02	17	115
Row cultivator	0.17	14	85
Duckfoot cultivator	0.04	11	64
Finishing harrow	0.06	24	150
Culti-mulcher (roller)	0.03	12	84
Bedder shaper	0.06	12	120
Bedder (disk)	0.03	5	100
Bedder disk-row	0.07	18	130
Subsoiler-bedder (hipper-ripper)	0.02	12	100
Culti-packer (pulverizer)	0.12	12	147
Landall, do-all	0.08	15	135
Roto-tiller	0.07	11	82
Manure spreader	0.03	5	100
Self-propelled fertilizer spreader	0.16	40	--
Truck fertilizer spreader trailer mounted	0.13	42	28
Anhydrous fertilizer applicator tractor mounted	0.04	8	87
Dry fertilizer applicator tractor mounted	0.07	24	90
Liquid fertilizer applicator tractor mounted	0.03	24	150
Anhydrous fertilizer applicator trailer mounted	0.22	56	107
Dry fertilizer spreader trailer mounted	0.51	43	78
Chemical applicator attached to implement	0.75	26	79
Chemical applicator, large self-propelled	0.03	24	--
Chemical applicator, small self-propelled	0.26	40	--
Chemical applicator tractor mounted	2.70	23	84
Chemical applicator trailer mounted	1.12	28	79
Drill, plain, disc (grain)	0.03	8	99
Bed-shaper planter	0.38	10	120
Lister-bedder planter	0.07	8	98
Planter (regular)	0.63	10	89
Rotary mower	0.08	8	125
Stalk shredder	0.01	10	130
Peanut combine (pto)	1.08	5	110
Peanut digger-shaker	0.71	9	108
Peanut shaker-inverter	0.32	9	97
Peanut reshaker-conditioner	0.09	14	74
Peanut vine cutter	0.14	7	91
Peanut wagon	0.03	10	80

Note: Machine operations listed are not in sequence.
Machines used in custom operations are excluded.
Machines are repeated because they are different in size or pulled by tractors of different size (horsepower).
-- = Indicates machines are self-propelled, in tandem, or pulled by truck.
Width = Indicates the swath or width of the area covered by the machine, which is not necessarily the structural width of the machine.
Times-over = Total acres covered in an operation divided by planted acres of the crop. Note that hours per acre given for land forming equipment such as backhoe, disk border maker, ditcher, ditch closer, levee plow disk, rear-mounted blade, and quarter drain machines.

Source: 1991 Farm Costs and Returns Survey, USDA.

U.S. Department of Agriculture
Economic Research Service

SUMMARY OF REPORT AIB-703

Virginia-Carolina Peanut Producers Hold Cost Advantage

September 1994

Contact: Nora Brooks, (202) 219-0384

After a major drought in 1990, U.S. peanut yields returned to normal levels in 1991, and both planted and harvested acreages were higher than at any time in the last 40 years. Production totaled nearly 5 billion pounds, valued at $1.4 billion, compared with an annual average production of 4 billion pounds, valued at $1.1 billion, in 1985-90.

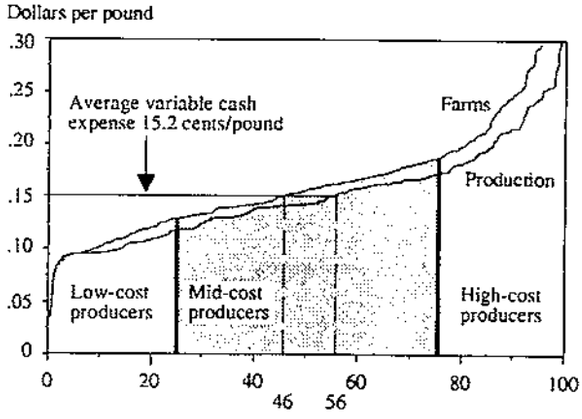
Producing a pound of peanuts cost U.S. farmers an average of 15.2 cents in variable cash expenses. Individual farm costs varied from about 3 cents per pound to more than 72 cents. These findings are drawn from a newly published report by USDA's Economic Research Service, *Characteristics and Production Costs of U.S. Peanut Farms, 1991.*

The Southeast region (Alabama, Florida, and Georgia) had the largest proportions of production and farms, but the Virginia-Carolina region had both the highest yields and the lowest variable cash expenses per pound.

Roughly a third of producers in the Virginia-Carolina region were in the low-cost group while more than a third of the producers in the Southern Plains (Oklahoma and Texas) were in the high-cost group.

Cumulative distribution of variable cash production expenses for peanuts, 1991

Roughly 46 percent of FCRS peanut farms had variable cash expenses at or below the average variable cash expense of 15.2 cents per pound.



On a per acre basis, variable cash expenses for high-cost producers were $416 versus $321 for low-cost producers. Expenses for fertilizer, chemicals, and hired labor were $58 per acre higher for high-cost producers, who applied more nitrogen and phosphorous. Low-cost producers applied more lime and gypsum. More high- than low-cost producers had a major occupation other than farming and may have hired more labor during peak periods of planting and harvesting. The largest single variable cash expense was for seed, as a result of the 1990 drought that drove seed prices up.

Data for this study are from the peanut version of the 1991 Farm Costs and Returns Survey (FCRS). Responses represented 15,282 farms and about 1.9 million planted peanut acres (95 percent of U.S. peanut acreage). Peanut growers in other States were not surveyed because of their minor share of peanut production and limited survey funds.

To Order This Report...

The information presented here is excerpted from **Characteristics and Production Costs of U.S. Peanut Farms, 1991,** AIB-703, by Nora Brooks. The cost is $9.00

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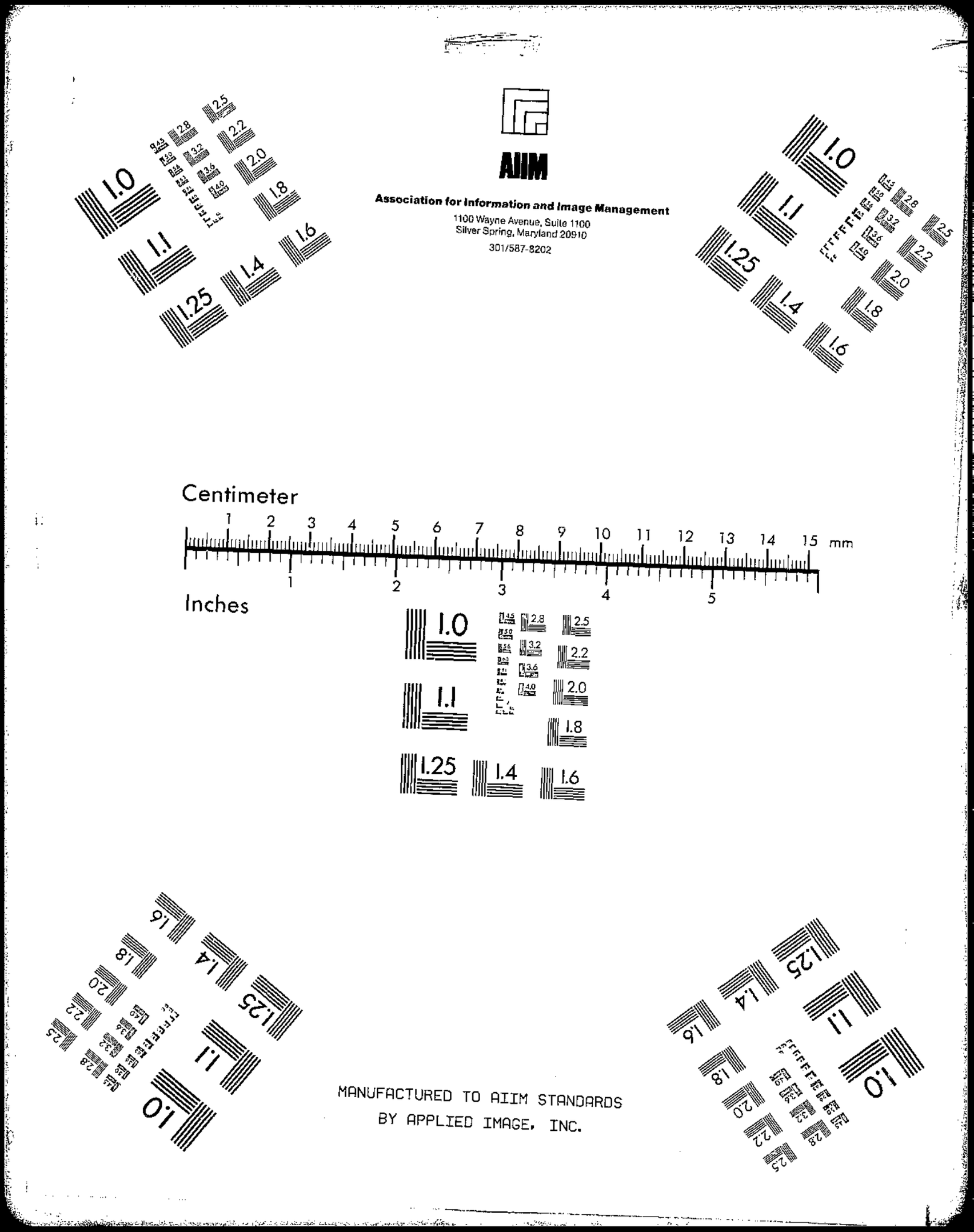
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