

Alabama  
Soil Test  
Summary

July 1, 1975 - June 30, 1980

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## Alabama Soil Test Summary, July 1, 1975-June 30, 1980

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### Introduction

The Auburn University Soil Testing Laboratory has been in operation since 1953. The soil testing program in Alabama is a cooperative effort between the Alabama Cooperative Extension Service and the Alabama Agricultural Experiment Station. The Extension Service is responsible for distribution of soil test supplies, information, and education about soil testing. The Experiment Station is responsible for the research on which the lime and fertilizer recommendations are based, operates the laboratory, and makes the actual recommendations.

In addition to soil test recommendations for farmers and homeowners, soil test analyses for the Agricultural Experiment Station are also conducted in the Soil Testing Laboratory. A plant analysis service is also provided for pecan and fruit growers and for "trouble-shooting" fertility problems with all crops during the growing season.

### Sample Numbers

The purpose of this summary is to present the soil test results of all soil samples for farmers and homeowners from July 1, 1975, to June 30, 1980. Because of the large number of soil samples analyzed, this summary shows trends have developed during the last 5 years in the fertility status of the agricultural soils in Alabama.

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The number of soil samples analyzed for farmers and homeowners increased steadily during the first 25 years of operation. The largest number of soil samples analyzed in a single year was 71,747 in the fiscal year beginning July 1, 1976, and ending June 30, 1977. (This did not include approximately 10,000 research soil samples that are analyzed each year for the Agricultural Experiment Station.) During the next 3 years (1977-1980), the Soil Testing Laboratory analyzed almost 60,000 soil samples per year for farmers and homeowners. The 10,000 fewer samples during these 3 years is attributed to a decrease of 7,300 soil samples for pasture and hay crops and a decrease of 4,200 soil samples analyzed for row crops, see tables 1-5.

Trends during the 5-year period, 1976-1980, show a 35 percent decrease in soil samples for corn, a 20 percent decrease in soil samples for cotton, a 6 percent decrease in soil samples for peanuts, but a 200 percent increase in the number of soil samples for soybeans. Soil samples for pasture and hay crops decreased 35 percent, and the number of soil samples for horticultural crops only increased slightly.

Of the total number of soil samples received by the Soil Testing Laboratory in 1979-80, 47 percent were for row crops, 28 percent were for pasture and hay crops, and 25 percent were for horticultural crops. In comparison, the percentages were 40, 38, and 22 percent, respectively, in 1975-76.

Tables 2-4 show where the soil samples came from by county and by districts of the Alabama Cooperative Extension Service. Table 5 shows the 12 counties that sent in the most soil samples for each year and for the 5-year period beginning July 1, 1975, and ending June 30, 1980. Houston County sent in over 5 percent of the soil samples during this

period and the top 12 counties sent in nearly 38 percent of the total number of soil samples.

### Soil Fertility Results

The relative distribution of soil samples, according to the levels of phosphorus and potassium, are shown in figures 1-3. The total number of soil samples is divided into three crop groups: (1) row crops, (2) pasture and hay crops, and (3) horticultural crops. The actual percentages are shown in table 6 which also includes the levels of magnesium.

Except for horticultural crops, the soil samples testing Medium or lower in P or K need fertilizer and soil samples testing High or higher in P or K do not need fertilizer.

Tables 7-10 show the relative number of soil samples for each level of P, K, and Mg for each of four major row crops: cotton, corn, peanuts, and soybeans. These data suggest that soil-test P has decreased on cotton, corn, and peanut fields during the last 5 years while soil-test K has increased on cotton and corn fields. Since some marginal crop lands have been planted in soybeans in the last 5 years, it would be difficult to draw any conclusions except to say that a large number of soybean lands are deficient in P and K.

The levels of magnesium have increased on all field crop samples during the 5-year period. The increase in soil test Mg, shown in tables 7-10, and the pH data in tables 11 and 12, indicate that most farmers are following a good liming program.

## Fertilizer Ratios

One of the primary purposes of soil testing is to measure the fertility status of a given field and to make an appropriate fertilizer recommendation based on that measurement. Tables 13, 15, 17, and 19 summarize the number of soil samples according to their need for P and K fertilizer. Although the Soil Testing Laboratory recommends many different rates of  $P_2O_5$  and  $K_2O$ , an attempt is made to recommend these elements in only a few fertilizer ratios. For example, if one soil sample for soybeans tested Medium in P and Medium in K (P-K rating = M-M), then the fertilizer recommendation is 0-40-40. If another soil sample for cotton tested Low in P and Low in K (P-K rating = L-L), then the fertilizer recommendation would be 90-90-90. In both examples, the ratio of  $P_2O_5$  to  $K_2O$  is 1 to 1. This ratio is referred to as the P-K ratio. Most of the P-K ratios used by the Auburn University Soil Testing Laboratory are 1:1, 2:1, 1:2, 1:0, and 0:1. Only in a few instances, (for example, some horticultural crops) are other ratios recommended.

By restricting the number of recommended ratios of  $P_2O_5$  and  $K_2O$ , farmers and homeowners find it easier to purchase and apply fertilizer.

Tables 14, 16, 18, and 20 show that for all four major row crops where P and K fertilizers were recommended, the number of samples needing a 1:1, 2:1, and 1:0 ratio increased. This brings out a point that was discussed earlier: Soil-test P seems to be decreasing while Soil-test K seems to be increasing.

Tables 21 and 22 summarize the P-K ratios needed by various crops and crop groups in 1979-80.



Table 1. Number and Percentage of Soil Samples Received by Crop

CROP	1975-76		1976-77		1977-78		1978-79		1979-80	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
Corn	14,149	20	16,350	23	5,568	10	6,937	12	9,282	15
Cotton	5,264	7	5,252	7	4,137	7	4,052	7	4,191	7
Peanuts	4,280	6	3,163	4	7,605	13	6,269	10	4,030	7
Soybeans	5,250	7	7,645	11	7,956	14	9,997	17	10,705	18
Clover-wintergrass	4,069	6	3,453	5	2,305	4	2,519	4	2,163	4
Clover-summergrass	1,230	2	1,130	2	905	2	582	1	489	1
Legumes	727	1	545	1	644	1	580	1	743	1
Temp. wintergrass	545	1	650	1	749	1	539	1	495	1
Perm. wintergrass	4,095	6	4,236	6	3,369	6	2,865	5	2,573	4
Summergrass	12,022	17	11,378	16	9,184	16	8,310	14	8,210	13
Coastal	3,530	5	3,058	4	2,320	4	2,098	4	2,451	4
Fruits and nuts	855	1	1,105	2	1,071	2	1,263	2	1,286	2
Commercial vegetables	1,272	2	1,161	2	600	1	578	1	725	1
Gardens	7,898	11	6,771	9	4,563	8	6,305	11	7,366	12
Lawns	4,495	6	4,427	6	5,145	9	5,194	9	5,006	8
Shrubs	1,500	2	1,423	2	1,319	2	1,424	2	1,551	2
Row crops	28,943	40	32,410	45	25,266	44	27,255	46	28,208	47
Pasture and hay	26,218	38	24,450	35	19,476	34	17,493	30	17,124	28
Horticulture	15,970	22	14,887	21	12,698	22	14,764	25	15,934	25
TOTAL	71,131	100	71,747	100	57,400	100	59,512	100	61,267	100

Table 2. Number of Samples Received and Percent of State Total  
By County in District 1

COUNTY	1975-76		1976-77		1977-78		1978-79		1979-80		Total 27 yr.	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
Blount	1,298	1.8	1,150	1.6	871	1.5	660	1.1	795	1.3	11,021	1.3
Cherokee	1,105	1.6	1,078	1.5	725	1.3	888	1.5	674	1.1	12,002	1.4
Colbert	757	1.1	877	1.2	985	1.7	941	1.6	1,036	1.7	10,161	1.2
Cullman	1,077	1.5	1,458	2.0	1,141	2.0	844	1.4	898	1.5	12,447	1.4
DeKalb	1,719	2.4	2,271	3.2	964	1.7	1,440	2.4	1,684	2.7	18,245	2.1
Etowah	939	1.3	667	0.9	606	1.1	539	0.9	623	1.0	9,530	1.1
Fayette	309	0.4	318	0.4	261	0.5	220	0.4	170	0.3	4,684	0.5
Franklin	772	1.1	939	1.3	877	1.5	525	0.9	684	1.1	9,178	1.1
Jackson	1,451	2.0	1,438	2.0	988	1.7	925	1.6	1,088	1.8	13,066	1.5
Jefferson	2,648	3.7	2,201	3.1	1,952	3.4	2,122	3.6	1,882	3.1	30,519	3.5
Lamar	441	0.6	470	0.7	298	0.5	263	0.4	379	0.6	6,455	0.7
Lauderdale	915	1.3	1,511	2.1	887	1.5	1,143	1.9	1,281	2.1	17,756	2.1
Lawrence	1,277	1.8	1,272	1.8	1,157	2.0	1,184	2.0	1,130	1.8	11,673	1.4
Limestone	928	1.3	1,103	1.5	897	1.6	878	1.5	1,134	1.9	20,218	2.3
Madison	2,003	2.8	1,772	2.5	1,560	2.7	2,004	3.4	1,540	2.5	23,790	2.8
Marion	657	0.9	543	0.8	335	0.6	414	0.7	406	0.7	6,133	0.7
Marshall	1,134	1.6	1,101	1.5	651	1.1	744	1.3	744	1.2	11,407	1.3
Morgan	1,461	2.1	1,309	1.8	1,046	1.8	946	1.6	951	1.6	16,956	2.0
St. Clair	583	0.8	783	1.1	533	0.9	499	0.8	510	0.8	7,376	0.9
Shelby	702	1.0	1,016	1.4	744	1.3	788	1.3	607	1.0	9,322	1.1
Walker	691	1.0	492	0.7	666	1.2	509	0.9	549	0.9	6,677	0.8
Winston	457	0.6	551	0.8	281	0.5	415	0.7	290	0.5	4,379	0.5
District total	23,324	32.8	24,320	33.3	18,425	32.0	18,891	31.7	19,055	31.2	272,995	31.7
State total	71,131		71,747		57,440		59,512		61,267		862,137	

Table 3. Number of Samples Received and Percent of State Total  
By County in District 2

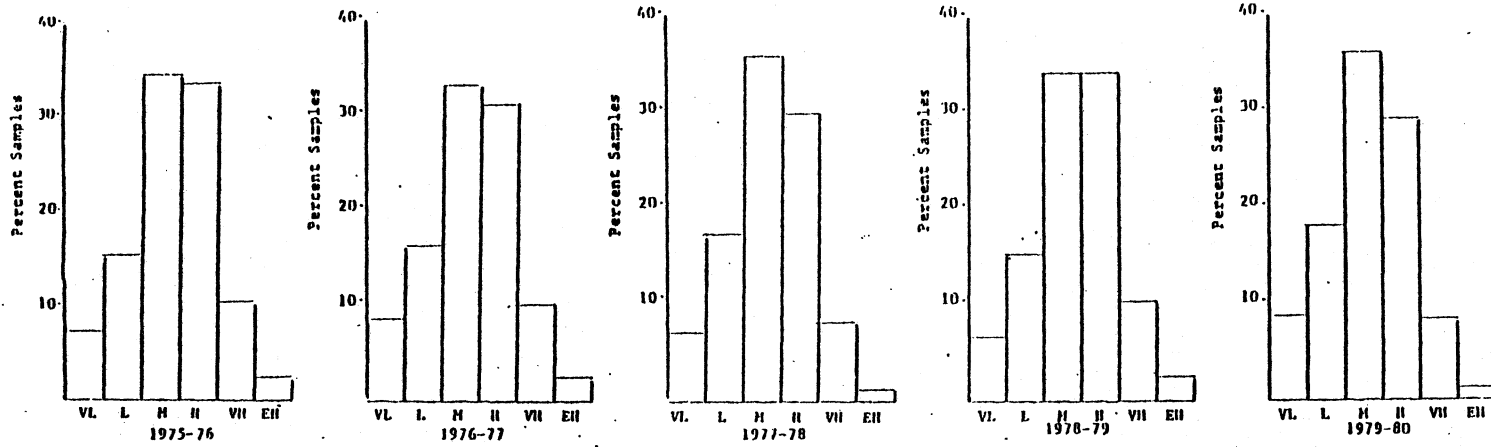
COUNTY	1975-76		1976-77		1977-78		1978-79		1979-80		Total 27 yr.	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
Barbour	1,523	2.1	1,858	2.6	1,464	2.5	1,420	2.4	1,436	2.3	23,345	2.7
Bullock	779	1.1	907	1.3	496	0.9	650	1.1	677	1.1	9,956	1.2
Calhoun	762	1.1	835	1.2	413	0.7	591	1.0	745	1.2	9,053	1.1
Chambers	579	0.8	633	0.9	471	0.8	398	0.7	420	0.7	7,214	0.8
Clay	209	0.3	181	0.3	218	0.4	142	0.2	167	0.3	3,570	0.4
Cleburne	221	0.3	171	0.2	187	0.3	140	0.2	115	0.2	2,719	0.3
Coffee	2,513	3.5	2,279	3.2	1,919	3.3	1,472	2.5	1,762	2.9	28,254	3.3
Coosa	122	0.2	170	0.2	140	0.2	115	0.2	125	0.2	2,241	0.3
Covington	1,850	2.6	1,791	2.5	1,574	2.7	1,169	2.0	1,615	2.6	20,403	2.4
Crenshaw	1,080	1.5	694	1.0	782	1.4	581	1.0	668	1.1	10,495	1.2
Dale	1,582	2.2	1,469	2.0	1,242	2.2	960	1.6	1,238	2.0	17,327	2.0
Elmore	1,016	1.4	1,075	1.5	868	1.5	848	1.4	980	1.6	13,613	1.6
Geneva	2,353	3.3	2,513	3.5	1,676	2.9	1,746	2.9	2,065	3.4	31,590	3.7
Henry	2,527	3.6	2,230	3.1	2,144	3.7	2,419	4.1	2,505	4.1	29,698	3.4
Houston	4,410	6.2	3,581	5.0	2,948	5.1	3,267	5.5	3,101	5.1	41,813	4.8
Lee	1,521	2.1	1,495	2.1	1,143	2.0	1,517	2.5	1,806	2.9	19,473	2.3
Macon	941	1.3	943	1.3	594	1.0	721	1.2	802	1.3	11,553	1.3
Montgomery	1,645	2.3	1,720	2.4	1,611	2.8	1,551	2.6	1,570	2.6	24,465	2.8
Pike	1,883	2.6	1,999	2.8	1,750	3.0	1,748	2.9	1,700	2.8	26,571	3.1
Randolph	480	0.7	364	0.5	255	0.4	358	0.6	470	0.8	4,907	0.6
Russell	794	1.1	963	1.3	962	1.7	1,272	2.1	1,035	1.7	9,920	1.2
Talladega	633	0.9	585	0.8	654	1.1	598	1.2	586	1.0	8,460	1.0
Tallapoosa	391	0.5	447	0.6	332	0.6	295	0.5	373	0.6	6,393	0.7
District total	29,814	41.9	28,903	40.3	23,843	41.5	24,078	40.4	25,961	42.4	363,033	42.1
State total	71,131		71,747		57,440		59,512		61,267		862,137	

Table 4. Number of Samples Received and Percent of State Total  
By County in District 3

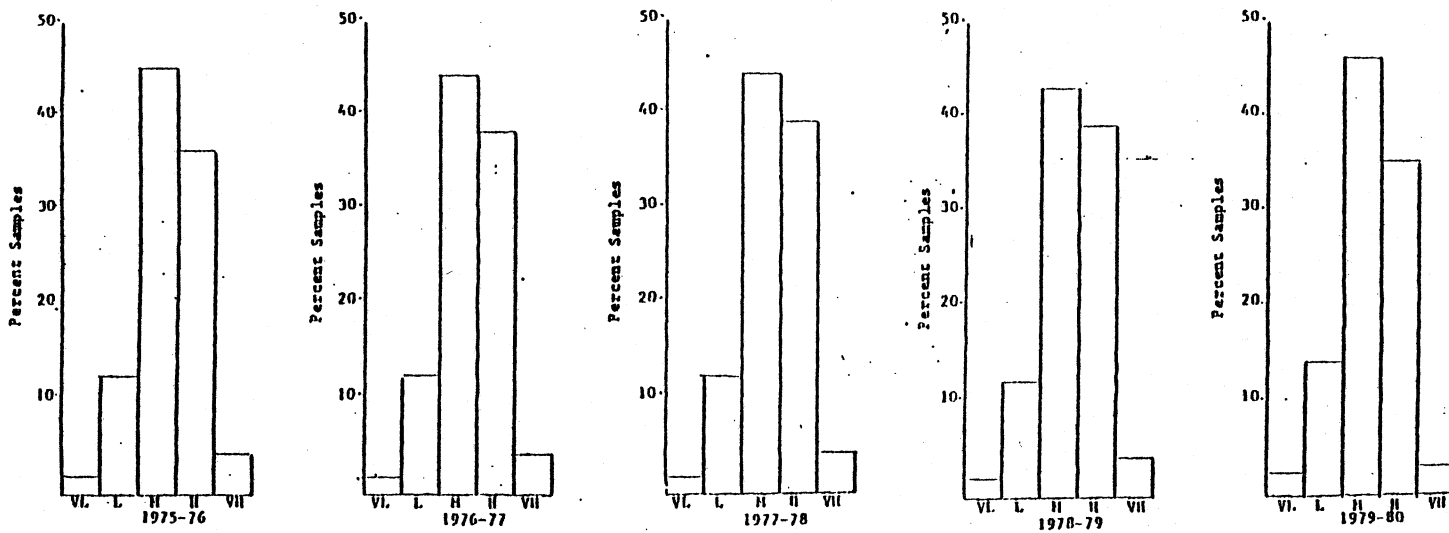
COUNTY	1975-76		1976-77		1977-78		1978-79		1979-80		Total 27 yr.	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
Autauga	1,213	1.7	1,258	1.8	1,082	1.9	984	1.7	1,133	1.8	16,582	1.9
Baldwin	843	1.2	1,189	1.7	824	1.4	987	1.7	804	1.3	14,848	1.7
Bibb	369	0.5	361	0.5	402	0.7	247	0.4	322	0.5	5,577	0.6
Butler	623	0.9	537	0.7	464	0.8	393	0.7	372	0.6	7,185	0.8
Chilton	769	1.1	701	1.0	615	1.1	766	1.3	505	0.8	8,615	1.0
Choctaw	271	0.4	298	0.4	255	0.4	351	0.6	301	0.5	4,905	0.6
Clarke	495	0.7	407	0.6	254	0.4	366	0.6	360	0.6	4,861	0.6
Conecuh	944	1.3	763	1.1	485	0.8	575	1.0	651	1.1	8,744	1.0
Dallas	2,054	2.9	2,536	3.5	1,797	3.1	2,370	4.0	2,443	4.0	25,975	3.0
Escambia	622	0.9	902	1.3	691	1.2	825	1.4	1,046	1.7	8,456	1.0
Greene	595	0.8	768	1.1	544	0.9	537	0.9	490	0.8	8,384	1.0
Hale	701	1.0	686	1.0	610	1.1	630	1.1	511	0.8	8,522	1.0
Lowndes	665	0.9	823	1.1	702	1.2	696	1.2	767	1.3	10,366	1.2
Marengo	1,022	1.4	717	1.0	810	1.4	558	0.9	683	1.1	11,436	1.3
Mobile	1,818	2.6	1,634	2.3	1,425	2.5	1,612	2.7	1,469	2.4	19,364	2.2
Honroe	742	1.0	797	1.1	651	1.1	698	1.2	864	1.4	8,739	1.0
Perry	546	0.8	639	0.9	648	1.1	1,003	1.7	470	0.8	8,799	1.0
Pickens	746	1.0	594	0.8	571	1.0	387	0.7	436	0.7	7,380	0.9
Sumter	827	1.2	651	0.9	552	1.0	564	0.9	547	0.9	8,414	1.0
Tuscaloosa	1,284	1.8	1,448	2.0	1,040	1.8	1,111	1.9	1,318	2.2	16,689	1.9
Washington	391	0.5	365	0.5	263	0.5	335	0.6	334	0.5	4,375	0.5
Wilcox	453	0.6	450	0.6	487	0.8	548	0.9	425	0.7	7,893	0.9
District total	17,993	25.3	18,524	25.5	15,172	26.4	16,543	27.0	16,251	26.5	226,109	26.2
State total	71,131		71,747		57,440		59,512		61,267		862,137	

Table 5. Top Twelve Counties According to Number of Samples Submitted

Rank	1975-76		1976-77		1977-78		1978-79		1979-80		5-year totals 1975-80		
	County	No. samples	County	No. samples	County	No. samples	County	No. samples	County	No. samples	County	No. samples	
1	Houston	4,410	Houston	3,581	Houston	2,948	Houston	3,267	Houston	3,101	Houston	17,305	
2	Jefferson	2,648	Dallas	2,536	Henry	2,144	Henry	2,419	Henry	2,505	Henry	11,825	
3	Henry	2,527	Geneva	2,513	Jefferson	1,952	Dallas	2,370	Dallas	2,443	Dallas	11,200	
4	Coffee	2,513	Coffee	2,279	Coffee	1,919	Jefferson	2,122	Geneva	2,065	Jefferson	10,805	
5	Geneva	2,353	DeKalb	2,271	Dallas	1,797	Madison	2,004	Jefferson	1,882	Geneva	10,355	
6	Dallas	2,054	Henry	2,230	Pike	1,750	Pike	1,748	Lee	1,806	Coffee	9,945	
7	Madison	2,003	Jefferson	2,201	Geneva	1,676	Geneva	1,746	Coffee	1,762	Pike	9,080	
8	Pike	1,883	Pike	1,999	Montgomery	1,611	Mobile	1,612	Pike	1,700	Madison	8,580	
9	Covington	1,850	Barbour	1,858	Covington	1,574	Montgomery	1,551	DeKalb	1,684	Montgomery	8,095	
10	Mobile	1,818	Covington	1,791	Madison	1,560	Lee	1,517	Covington	1,615	DeKalb	8,080	
11	DeKalb	1,719	Madison	1,772	Barbour	1,464	Coffee	1,472	Montgomery	1,570	Covington	8,000	
12	Montgomery	1,645	Montgomery	1,720	Mobile	1,425	DeKalb	1,440	Madison	1,540	Mobile	7,960	
Top twelve total		27,423	26,751		21,820		23,268		23,673		121,230		
State total		71,131	71,747		57,440		59,512		61,267		321,095		
Percent samples sent by top 12 counties		38.6		37.3		38.0		39.1		38.6		37.8	

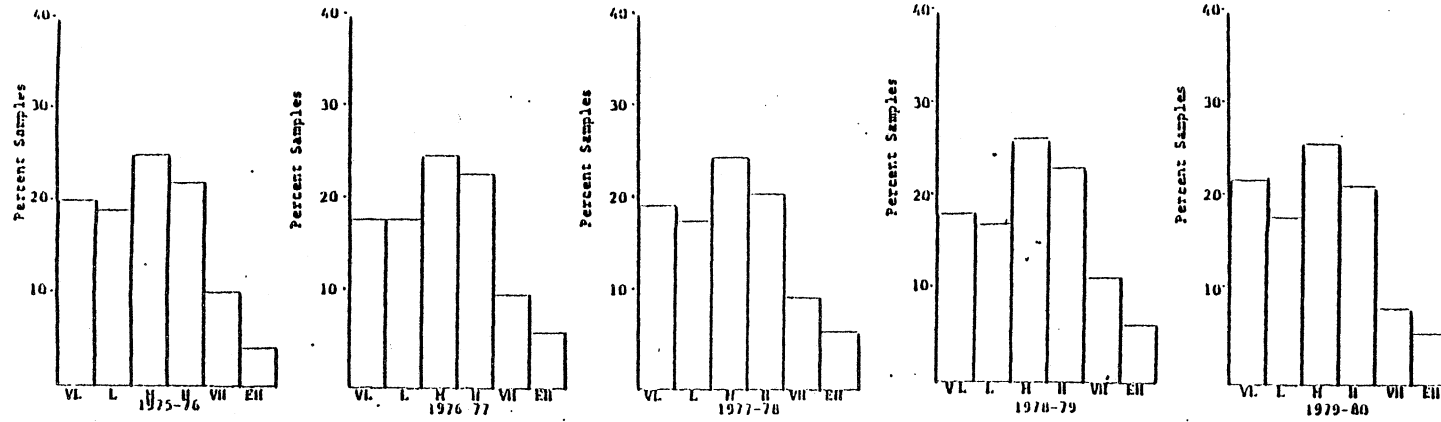


SOIL-TEST RATINGS FOR PHOSPHORUS

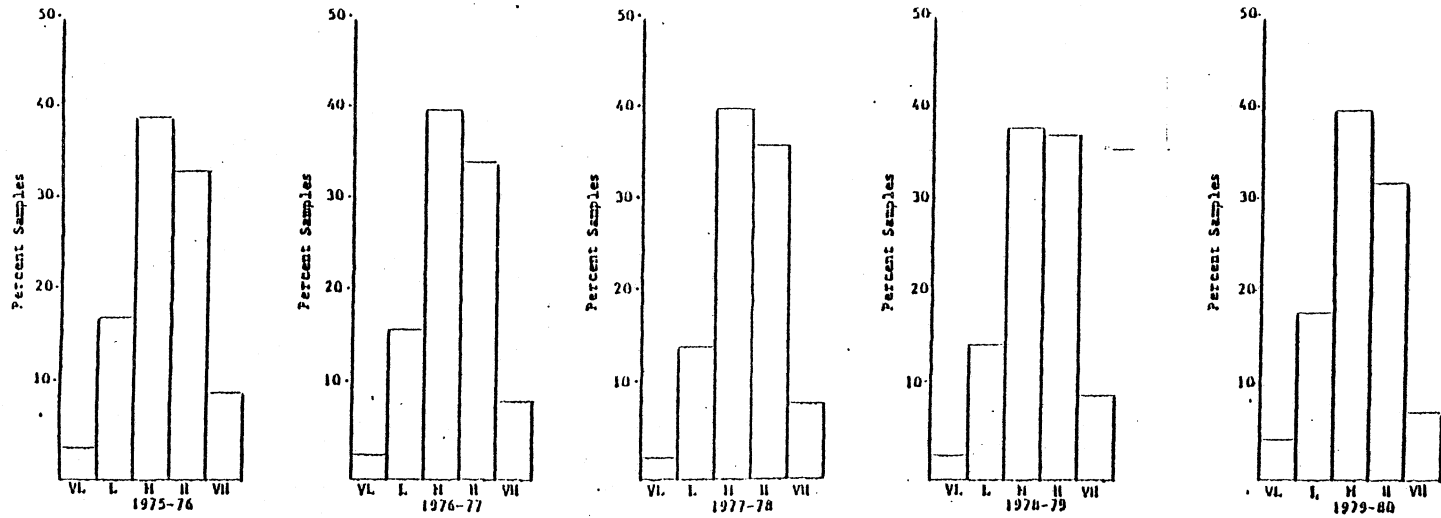


SOIL-TEST RATINGS FOR POTASSIUM

FIG. 1. Soil test levels of P and K for row crops, 1976-1980.

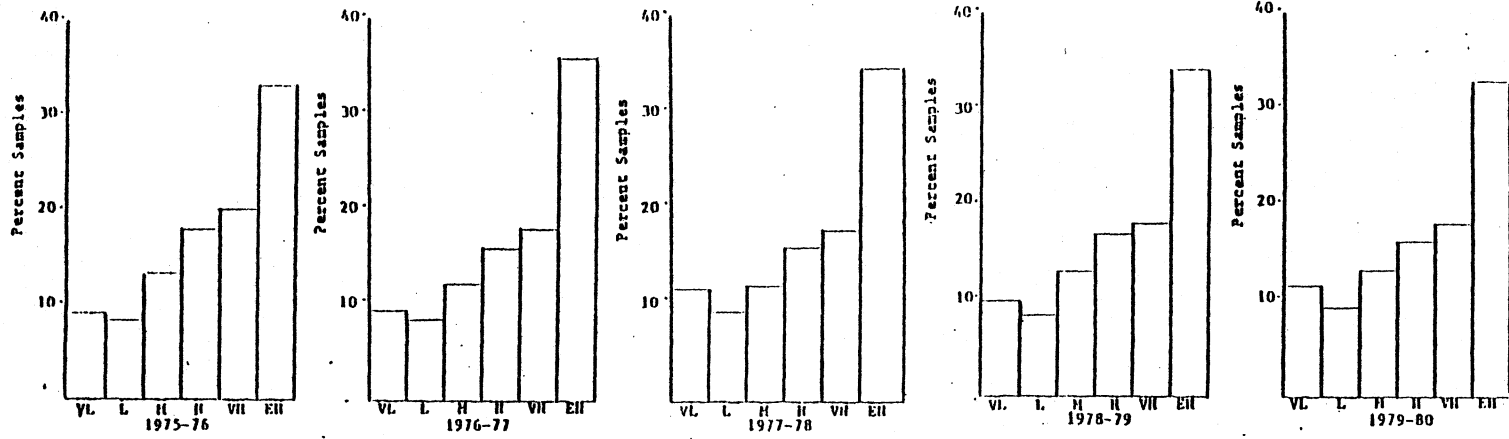


SOIL-TEST RATINGS FOR PHOSPHORUS

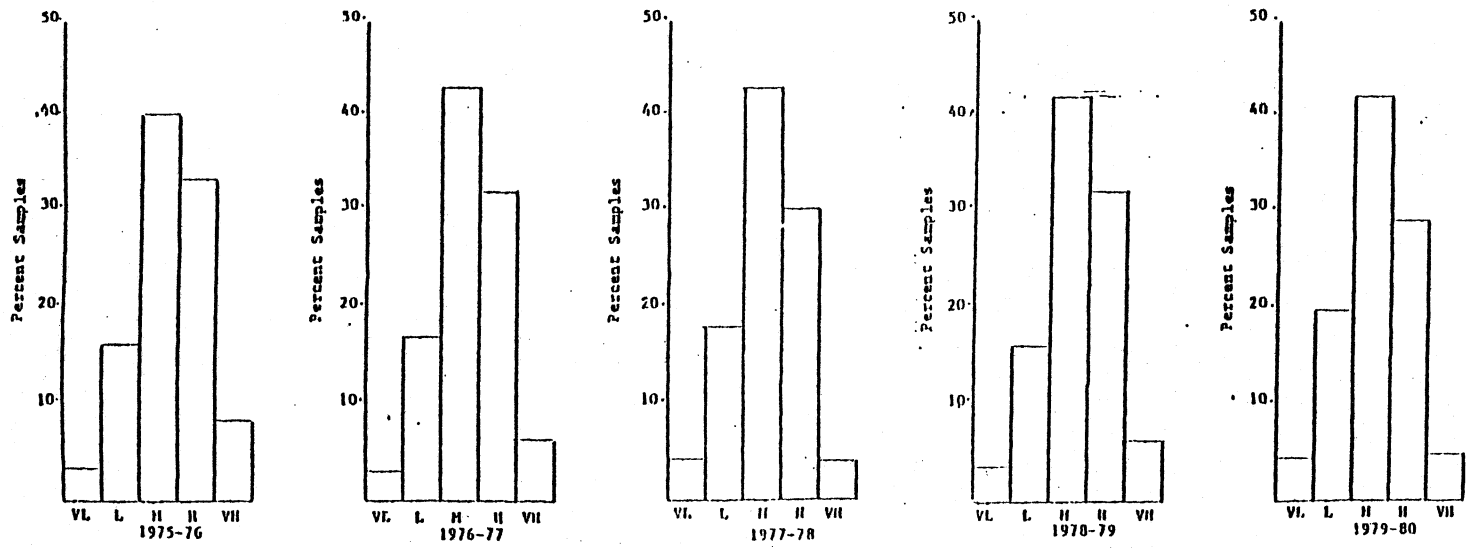


SOIL-TEST RATINGS FOR POTASSIUM

FIG. 2. Soil test levels of P and K for pasture and hay crops, 1976-1980.



SOIL - TEST RATINGS FOR PHOSPHORUS



SOIL - TEST RATINGS FOR POTASSIUM

FIG. 3. Soil test levels of P and K for horticultural crops, 1976-1980.



Table 6. Percent of Samples at Each Level of P, K, and Mg for 3 Crop Groups

Year	Pct. phosphorus						Pct. potassium					Pct. magnesium	
	VL	L	M	H	VII	EH	VL	L	M	H	VII	L	H
Row crops													
1975-76	6.7	14.9	33.8	32.6	10.3	1.6	1.4	13.3	45.3	35.6	4.4	18.6	81.4
1976-77	7.7	15.8	32.6	31.5	10.3	2.0	1.1	12.0	44.5	38.1	4.2	16.2	83.8
1977-78	7.3	16.8	35.7	30.4	8.3	1.5	1.4	12.2	44.0	38.9	3.5	10.0	90.0
1978-79	5.5	15.1	34.1	33.6	10.1	1.6	1.2	12.1	43.2	39.2	4.2	10.3	89.7
1979-80	7.7	17.7	36.4	29.0	7.9	1.3	1.7	14.3	46.3	34.8	2.9	11.2	88.8
Pasture and hay crops													
1975-76	20.2	18.7	24.8	21.9	10.4	3.9	2.8	16.6	38.9	32.8	8.9	13.6	86.4
1976-77	18.2	18.0	25.0	22.8	10.5	5.6	1.8	15.5	39.9	34.5	8.4	11.3	88.6
1977-78	19.6	18.1	25.0	21.4	9.9	6.0	1.9	14.3	39.6	36.1	8.1	10.1	89.9
1978-79	17.8	17.1	25.7	23.0	10.6	5.8	1.9	14.5	38.0	36.5	9.1	9.4	90.6
1979-80	21.7	18.3	26.0	21.1	8.3	4.6	3.5	17.8	39.7	32.1	6.9	10.4	89.6
Horticultural crops													
1975-76	8.8	8.0	12.8	18.0	19.6	32.9	3.1	15.9	39.9	32.8	8.3	13.1	86.9
1976-77	9.0	8.4	12.4	16.0	18.2	35.9	2.8	16.7	43.1	31.5	5.8	11.4	88.6
1977-78	10.8	8.5	12.1	16.2	17.6	34.8	4.1	18.0	43.3	30.3	4.3	9.8	90.2
1978-79	9.5	8.4	12.7	17.2	18.1	34.1	3.2	16.3	42.3	31.8	6.4	9.1	90.9
1979-80	11.4	8.7	13.1	16.4	17.8	32.7	4.3	20.1	41.6	29.4	4.5	11.2	88.8

Table 7. Percent Samples at each Level of P, K, and Mg for Cotton

Year	Pct. phosphorus						Pct. potassium					Pct. magnesium	
	VL	L	M	H	VH	EH	VL	L	M	H	VH	L	H
1975-76	3.4	8.9	24.4	38.6	21.5	3.2	0.5	9.5	52.1	36.3	1.6	8.6	91.4
1976-77	3.6	9.2	26.0	38.9	19.5	2.8	0.4	7.2	47.9	42.2	2.2	7.0	93.0
1977-78	2.2	9.5	28.8	40.6	17.1	1.6	0.2	5.4	43.4	49.6	1.4	4.1	95.9
1978-79	1.5	8.1	27.3	42.2	18.8	2.0	0.3	3.9	40.6	53.8	1.4	4.1	95.9
1979-80	3.6	11.2	31.8	37.2	14.7	1.4	0.4	6.8	48.7	43.0	1.2	3.9	96.1

Table 8. Percent Samples at each Level of P, K, and Mg for Corn

Year	Pct. phosphorus						Pct. potassium					Pct. magnesium	
	VL	L	M	H	VII	EH	VL	L	M	H	VII	L	H
1975-76	6.3	14.8	36.7	33.0	8.2	1.1	0.7	7.9	39.6	44.4	7.4	24.4	75.6
1976-77	6.1	15.5	35.3	32.2	9.0	2.0	0.3	6.1	39.9	47.3	6.4	20.6	79.4
1977-78	6.0	16.5	35.6	29.6	10.0	2.3	0.3	3.7	33.4	54.9	7.9	14.5	85.5
1978-79	4.3	12.9	34.4	34.6	11.4	2.4	0.4	3.9	32.8	53.3	9.7	15.6	84.4
1979-80	5.8	16.6	39.0	29.2	7.8	1.6	0.5	5.6	35.6	51.6	6.7	15.6	84.4

Table 9. Percent Samples at each Level of P, K, and Mg for Peanuts

Year	Pct. phosphorus						Pct. potassium					Pct. magnesium	
	VL	L	N	II	VII	EH	VL	L	M	II	VII	L	H
1975-76	3.9	14.4	39.7	35.1	6.6	0.4	3.5	24.7	50.3	20.6	0.9	9.0	81.0
1976-77	6.0	15.9	38.8	32.5	6.6	0.2	3.8	27.0	52.6	16.3	0.2	16.6	83.4
1977-78	4.5	17.6	42.3	31.0	4.0	0.6	1.6	14.5	45.8	34.8	3.3	10.4	89.6
1978-79	3.5	14.7	41.2	35.0	5.1	0.6	1.8	16.4	46.8	31.6	3.4	10.8	89.2
1979-80	5.5	19.0	40.6	30.6	3.8	0.4	3.3	24.5	54.5	17.3	0.4	10.8	89.2

Table 10. Percent Samples at each Level of P, K, and Mg for Soybeans

Year	Pct. phosphorus						Pct. potassium					Pct. magnesium	
	VL	L	M	H	VII	EH	VL	L	M	H	VII	L	H
1975-76	13.6	21.6	30.6	23.8	8.0	2.5	2.7	22.2	49.6	23.9	1.6	12.8	87.2
1976-77	14.7	21.2	28.8	24.5	8.4	2.3	2.3	21.7	48.8	24.3	2.8	12.6	87.4
1977-78	13.4	20.2	32.8	25.0	6.8	1.7	2.6	19.4	50.1	26.1	1.8	9.5	90.5
1978-79	9.2	19.7	32.3	28.4	8.8	1.6	1.8	18.5	49.2	28.4	2.2	8.7	91.3
1979-80	11.9	20.7	34.2	24.9	6.9	1.4	2.6	20.8	51.6	23.7	1.3	10.3	89.7

Table 11. Percent Samples at Different Soil pH Levels for Three Crop Groups

Year	Soil acidity									No. samples
	Below 4.5	4.5- 4.9	5.0- 5.4	5.5- 5.7	5.8- 5.9	6.0- 6.4	6.5- 6.9	7.0- 7.4	Above 7.4	
Row crops										
1975-76	0.2	3.8	20.4	19.9	14.2	29.6	9.0	1.5	1.3	28,943
1976-77	0.2	3.4	18.1	20.4	16.2	29.7	8.5	1.6	1.8	32,410
1977-78	0.2	2.7	14.4	19.8	17.2	33.8	7.9	1.6	2.4	25,266
1978-79	0.2	3.3	15.2	19.4	16.7	31.4	9.7	1.9	2.2	27,255
1979-80	0.2	3.0	14.6	17.5	16.2	34.8	10.7	1.7	1.2	28,208
Pasture and hay crops										
1975-76	0.6	5.6	24.5	20.4	12.6	22.9	8.1	2.3	2.9	26,218
1976-77	0.6	5.8	22.6	21.8	13.8	22.1	6.9	2.3	3.2	24,450
1977-78	0.7	6.2	23.7	22.0	14.6	21.9	6.3	1.8	2.8	19,476
1978-79	0.9	6.9	24.3	21.0	14.3	21.6	6.6	1.9	2.4	17,493
1979-80	0.8	7.2	23.6	20.7	13.8	23.4	6.9	1.6	2.1	17,124
Horticultural crops										
1975-76	1.1	6.9	21.9	17.6	10.5	22.0	12.2	5.6	2.2	15,970
1976-77	1.1	7.4	20.2	16.4	11.0	21.5	12.7	6.6	3.2	14,887
1977-78	1.1	6.7	20.0	18.0	11.8	24.4	11.8	4.0	2.1	12,698
1978-79	1.4	8.1	21.2	16.5	11.3	21.9	11.7	5.6	2.4	14,764
1979-80	1.3	7.4	21.6	17.2	11.2	22.4	12.4	4.6	1.9	15,934

Table 12. Percent Samples For Different Soil pH Levels  
For Cotton, Corn, Peanuts and Soybeans

Year	Below 4.5	4.6- 4.9	5.0- 5.4	5.5- 5.7	5.8- 5.9	6.0- 6.4	6.5- 6.9	7.0- 7.4	Above 7.4	Total
Cotton										
1975-76	0.2	3.1	16.5	16.3	13.2	32.5	15.3	2.4	0.5	5,264
1976-77	0.2	3.3	15.9	16.2	14.6	34.2	12.5	2.6	0.4	5,252
1977-78	0.1	2.7	14.9	18.0	16.3	36.6	10.3	1.1	0.1	4,137
1978-79	0.3	2.8	12.5	16.0	15.2	34.4	16.3	2.4	0.1	4,052
1979-80	0.2	2.3	11.8	15.2	13.9	36.2	17.7	2.5	0.1	4,191
Corn										
1975-76	0.3	4.4	3.0	20.8	14.5	23.9	6.8	0.9	0.5	14,149
1976-77	0.3	3.5	19.1	22.0	17.6	29.4	6.8	1.0	0.4	16,350
1977-78	0.4	4.5	17.4	21.4	16.7	30.9	7.3	0.9	0.4	5,568
1978-79	0.4	4.3	18.8	21.0	17.9	29.5	7.6	0.8	0.5	6,937
1979-80	0.3	3.7	15.4	18.1	17.4	35.8	8.1	0.8	0.3	9,232
Peanuts										
1975-76	0.0	1.8	16.4	23.3	16.6	34.2	7.3	0.3	0.0	4,280
1976-77	0.0	1.1	14.7	24.8	20.7	33.1	5.4	0.1	0.0	3,163
1977-78	0.0	0.6	9.3	21.1	21.2	41.3	6.0	0.4	0.0	7,605
1978-79	0.0	1.1	11.5	21.3	20.6	38.1	7.2	0.2	0.0	6,269
1979-80	0.0	0.6	11.8	19.0	20.5	39.8	7.6	0.4	0.1	4,030
Soybeans										
1975-76	0.3	4.9	20.8	18.1	12.6	24.6	9.8	3.4	5.6	5,250
1976-77	0.2	4.0	19.2	17.9	12.6	25.8	10.7	3.1	6.6	7,645
1977-78	0.1	3.4	17.1	18.4	14.2	27.2	8.7	3.5	7.3	7,956
1978-79	0.2	4.2	16.6	18.5	14.0	27.4	10.1	3.5	5.5	9,997
1979-80	0.1	3.4	16.1	17.2	14.5	31.6	11.4	2.7	3.0	10,705

Table 13. Number and Percent of Cotton Samples by Fertilizer Needs and P-K Ratios

P or K fertilizer	1975-76		1976-77		1977-78		1978-79		1979-80	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
Recommended	3,706	70.4	3,502	66.7	2,607	63.0	2,388	58.9	2,932	70.0
Not recommended	1,558	29.6	1,750	33.3	1,530	37.0	1,664	41.1	1,259	30.0
Total samples	5,264	100.0	5,250	100.0	4,137	100.0	4,052	100.0	4,191	100.0

Table 14. Number and Percent of Cotton Samples Needing P or K Fertilizer by P-K Ratio

P-K ratio*	1975-76		1976-77		1977-78		1978-79		1979-80	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1-1	940	25.4	964	27.5	723	27.7	608	25.5	890	30.4
2-1	383	10.3	382	10.9	301	11.5	230	9.6	377	12.8
1-2	173	4.7	107	3.1	80	3.1	56	2.3	96	3.3
1-0	437	11.8	586	16.7	579	22.2	603	25.2	590	20.1
0-1	1,773	47.8	1,463	41.8	924	35.4	891	37.3	979	33.4
Total samples needing fertilizer	3,706	100.0	3,502	100.0	2,607	100.0	2,388	100.0	2,932	100.0

\*Needed by those samples for which we recommend fertilizer.



Table 15. Number and Percent of Corn Samples by Need of P or K Fertilizer

P or K fertilizer	1975-76		1976-77		1977-78		1978-79		1979-80	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
Recommended	10,314	72.9	11,675	71.4	3,827	68.7	4,453	64.2	6,786	73.1
Not recommended	3,835	27.1	4,675	28.6	1,741	31.3	2,484	35.8	2,497	26.9
Total samples	14,149	100.0	16,350	100.0	5,568	100.0	6,937	100.0	9,283	100.0

Table 16. Number and Percent of Corn Samples Needing P or K Fertilizer by P-K Ratio

P-K ratio*	1975-76		1976-77		1977-78		1978-79		1979-80	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1-1	2,761	26.8	2,972	25.5	791	20.7	1,040	23.4	1,620	23.9
2-1	1,511	14.6	1,888	16.2	618	16.1	560	12.9	972	14.3
1-2	412	4.0	335	2.9	80	2.1	94	2.1	195	2.9
1-0	3,492	33.9	4,103	35.1	1,747	45.6	1,885	42.3	2,912	42.9
0-1	2,138	20.7	2,377	20.4	591	15.4	874	19.6	1,087	16.0
Total samples needing fertilizer	10,314	100.0	11,675	100.0	3,827	100.0	4,453	100.0	6,786	100.0

\*Needed by those samples for which we recommend fertilizer.

Table 17. Number and Percent of Peanut Samples by Need of P and K Fertilizer

P or K fertilizer	1975-76		1976-77		1977-78		1978-79		1979-80	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
Recommended	3,742	87.4	2,872	90.8	6,325	83.2	5,207	83.0	3,708	92.0
Not recommended	538	12.6	291	9.2	1,280	16.8	1,062	17.0	322	8.0
Total samples	4,280	100.0	3,163	100.0	7,605	100.0	6,269	100.0	4,030	100.0

Table 18. Number and Percent of Peanut Samples Needing P or K Fertilizer by P-K Ratio

P-K ratio*	1975-76		1976-77		1977-78		1978-79		1979-80	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1-1	1,244	33.2	1,003	34.9	2,017	31.9	1,583	30.4	1,305	35.2
2-1	361	9.6	305	10.6	791	12.5	553	10.6	476	12.8
1-2	495	13.2	378	13.2	474	7.5	452	8.7	453	12.2
1-0	381	10.2	233	8.1	1,613	25.5	1,131	21.7	392	10.6
0-1	1,261	33.7	953	33.2	1,430	22.6	1,488	28.6	1,082	29.2
Total samples needing fertilizer	3,742	100.0	2,872	100.0	6,325	100.0	5,207	100.0	3,708	100.0

\*Needed by those for which we recommend fertilizer.

Table 19. Number and Percent of Soybean Samples by Need of P or K Fertilizer

P or K fertilizer	1975-76		1976-77		1977-78		1978-79		1979-80	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
Recommended	4,604	87.7	6,725	88.0	6,963	87.5	8,485	84.9	9,437	88.5
Not recommended	646	12.3	920	12.0	993	12.5	1,512	15.1	1,228	11.5
Total samples	5,250	100.0	7,645	100.0	7,956	100.0	9,997	100.0	10,665	100.0

Table 20. Number and Percent of Soybean Samples Needing P and K Fertilizer by P-K Ratio

P-K ratio*	1975-76		1976-77		1977-78		1978-79		1979-80	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1-1	1,549	33.6	2,165	32.2	2,307	33.1	2,658	31.3	3,315	35.1
2-1	851	18.5	1,168	17.4	1,222	17.6	1,303	15.4	1,626	17.2
1-2	356	7.7	463	6.9	537	7.7	617	7.3	721	7.6
1-0	694	15.1	1,156	17.2	1,225	17.6	1,540	18.2	1,448	15.3
0-1	1,154	25.1	1,773	26.4	1,672	24.0	2,367	27.9	2,327	24.6
Total samples needing fertilizer	4,604	100.0	6,725	100.0	6,963	100.0	8,485	100.0	9,437	100.0

\*Needed by those samples for which we recommend fertilizer.

Table 21. Number and Percent of Samples by Need of P and K Fertilizer, 1979-1980

P or K fertilizer	Cotton		Corn		Peanuts		Soybeans		Total row crops		Pasture and hay		Total agronomic	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
Recommended	2,932	70.0	6,786	73.1	3,708	92.0	9,437	88.5	22,863	81.2	14,072	82.2	36,935	81.5
Not recommended	1,259	30.0	2,497	26.9	322	8.0	1,228	11.5	5,306	18.8	3,053	17.8	8,359	18.5
Total samples	4,191	100.0	9,283	100.0	4,030	100.0	10,665	100.0	28,169	100.0	17,125	100.0	45,294	100.0

Table 22. Number and Percent of Samples Needing P and K Fertilizer By Crop and By P-K Ratio Recommended, 1979-1980

P-K Ratio	Cotton		Corn		Peanuts		Soybeans		Total row crops		Pasture and hay		Total agronomic	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1-1	890	30.4	1,620	23.9	1,305	35.2	3,315	35.1	7,130	31.2	3,878	27.6	11,008	29.8
2-1	377	12.8	972	14.3	476	12.8	1,626	17.2	3,451	15.1	2,906	20.6	6,357	17.2
1-2	96	3.3	195	2.9	453	12.2	721	7.6	1,465	6.4	894	6.3	2,359	6.4
1-0	590	20.1	2,912	42.9	392	10.6	1,448	15.3	5,342	23.4	3,622	25.7	8,964	24.3
0-1	979	33.4	1,087	16.0	1,082	29.2	2,327	24.6	5,475	23.9	2,772	19.7	8,247	22.3
Total samples	2,932	100.0	6,786	100.0	3,708	100.0	9,437	100.0	22,863	100.0	14,072	100.0	36,935	100.0

Table 23. P-K Ratios Needed for Various P-K Ratings  
For Most Crops

P-K ratio	P-K rating combinations
1-1	VL-VL, VL-L, L-VL, L-L, M-M
2-1	VL-M, L-M
1-2	M-VL, M-L
1-0	VL-H, VL-VH, L-H, L-VH, M-H, M-VH
0-1	H-VL, H-L, H-M, VH-VL, VH-L, VH-M, EH-VL, EH-L, EH-M
0-0	H-H, H-VH, VH-H, VH-VH, EH-H, EH-VH

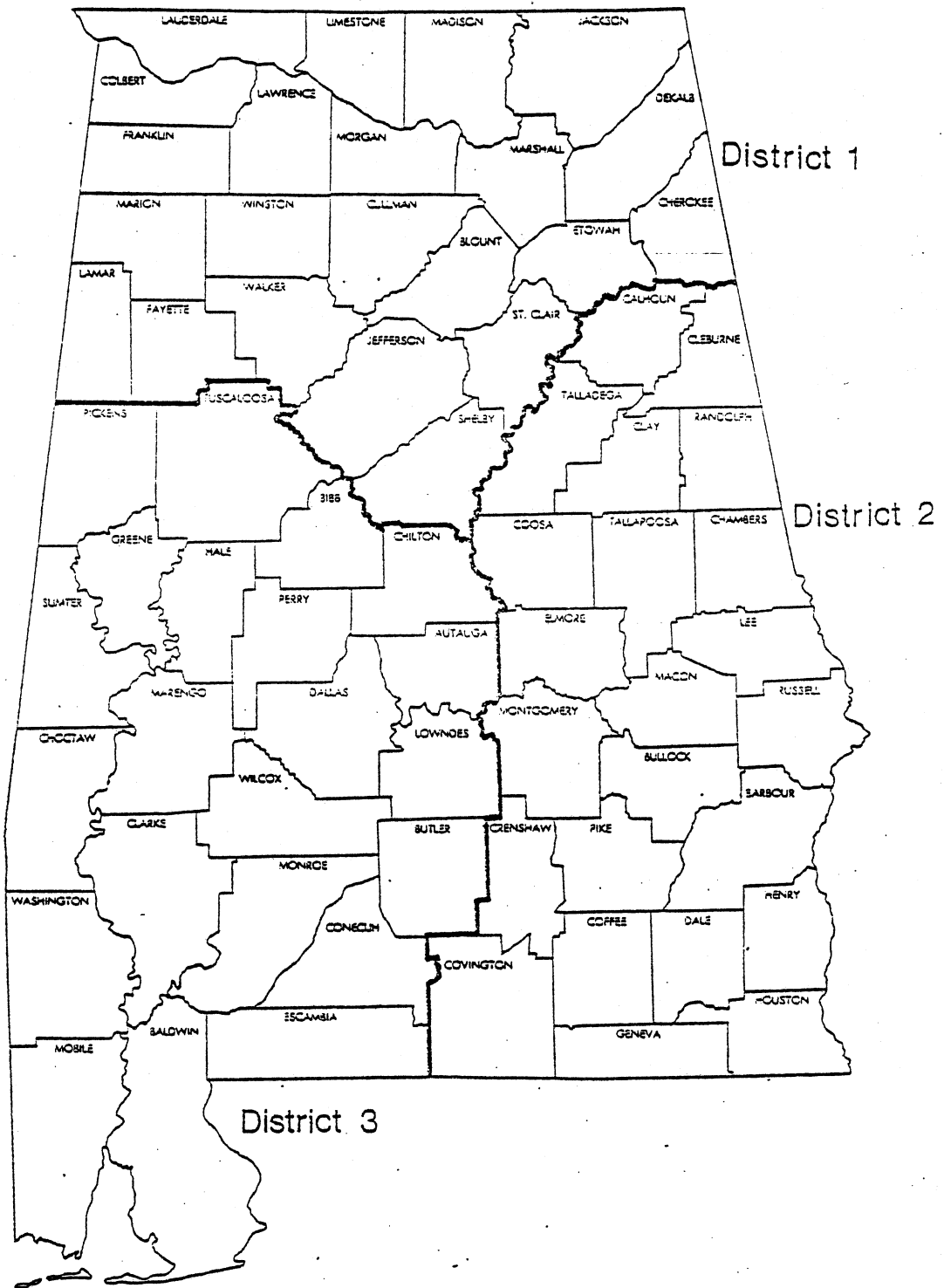


FIG. 4. Alabama Cooperative Extension Service Districts.



Information contained herein is available to all  
regardless of race, color, sex, or national origin