

Soil Test and Fertilizer Sales Data: Summary for the Growing Season – 2002 –

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BACKGROUND INFORMATION

Soil test data from samples submitted to the University of Arkansas Soil Testing and Research Laboratory in Marianna during the period 1 September 2001 through 30 August 2002 were categorized according to geographic area, county, soil association number (SAN), and selected cropping systems. This period roughly corresponds to the 2002 crop growing season; therefore, those samples should represent the soil fertility of that cropping season. The geographic area and SAN were from the General Soil Map, State of Arkansas (Base 4-R-38034, USDA, and University of Arkansas AES, Fayetteville, AR, December 1982). Descriptive statistics of the soil test data were calculated for categorical ranges for pH, phosphorus (P), potassium (K), nitrate-nitrogen ($\text{NO}_3\text{-N}$), and soluble salts (i.e., electrical conductivity, EC). Soluble salts and $\text{NO}_3\text{-N}$ can be indicators of adverse soil conditions that result in poor plant growth or leaching potentials. Routine analysis of $\text{NO}_3\text{-N}$ on all soil samples was discontinued in March 2001. Soil $\text{NO}_3\text{-N}$ is routinely determined on samples for corn, cotton, and all garden categories. Otherwise, soil $\text{NO}_3\text{-N}$ is performed only upon request. Soil pH and extractable (Mehlich 3, 1:7 extraction ratio analyzed by ICAP) soil nutrient (i.e., P, K, Ca, etc.) concentrations indicate the relative level of soil fertility.

RESULTS

Crop Acreage and Soil Sampling Intensity

During the interval from 1 September 2001 through 30 August 2002, 83,603 soil samples were analyzed in the University of Arkansas Soil Testing and Research Laboratory in Marianna. A total of 50,487 soil samples representing a total of 1,205,853 acres had complete

data for the county, SAN, last crop produced, geographic area, total acres, pH, P, K, EC, and month/day/year categories and are described in this report. Samples that did not have values in all of those categories were not included in this report. Soil samples from the Bottom Lands and Terraces and Loessial Plains, primarily row crop areas, represented 48% of the total samples and 71% of the total acreage (Table 1). The county average ranged from 2 to 78 acres/sample (Table 2). Clients from Arkansas (4,098 samples), Washington (3,238), Benton (2,155), and Lonoke (2,049) counties submitted the most soil samples for analyses.

Soil association numbers show that most samples were taken from row crops and pasture (Table 3). The 44 and 45 SAN represented 34% of the sampled acreage. Crop codes indicate that, in addition to row crops and pastures, turf and garden enterprises contributed largely to the number of samples submitted but represent only a small percentage of the total acreage (Table 4).

Soil Test Data

Information in Tables 5, 6, 7, and 8 pertain to the fertility status of Arkansas soils as categorized by geographic area, county, SAN, and the crop intended for production in 2002, respectively. The soil test values relate to the potential fertility of a soil but not necessarily to the productivity of the soil. Therefore, it may not be realistic to compare soil test values among SAN without knowledge of factors such as location, topography, and cropping system. Likewise, soil test values among counties cannot be realistically compared without knowledge of the SAN and a profile of the local agricultural production systems. Soil test data for cropping systems can be carefully compared; however, the specific agricultural production systems often indicate past fertilization

practices or may be unique to certain soils that would influence the current soil test values. For example, soils used for cotton production have a history of intensive fertilization, whereas intensive fertilization of soybean is normally not practiced (Table 8). Similarly, rice is commonly grown on soils with low P and K concentrations, which may be more a reflection of the management practices (i.e., flooded soil conditions) used rather than the routine fertilization practices. The majority of Arkansas soils have a pH >5.5, but <6.5 (Table 7).

Table 8 contains soil test levels and the median (Md) concentrations for each of the cropping system categories. The Md is the value that has an equal number of higher and lower observations and thus is a better overall indicator of a soil's fertility status than a mean value. Among row crops, the lowest P and K median values appear for rice and irrigated soybeans. As expected, the highest median P and K concentrations for row crops were from soils used for cotton production. The median P and K concentrations for row crops have remained constant over the past 10 years, but soil P has gradually increased for soils used for warm- and cool-season grass production (data not shown).

Fertilizer consumption by county (Table 9) and by fertilizer nutrient and formulation (Table 10) illustrate the wide use of fertilizer used predominantly in row-crop production areas.

PRACTICAL APPLICATIONS

The data presented, or more specific data, can be used in county or commodity-specific educational programs on soil fertility and fertilization practices. Comparisons of annual soil test information can also document trends in fertilization practices or areas where nutrient management issues may need to be addressed.

ACKNOWLEDGMENTS

Financial support for routine soil testing services offered to Arkansas citizens provided from the Arkansas Fertilizer Tonnage Fee is appreciated.

Table 1. Sample number and total acreage by geographic area for soil samples submitted to the University of Arkansas Soil Testing and Research Laboratory in Marianna from September 2001 through August 2002.

Geographic area	Acres sampled	No. of samples	Acres/sample
Ozark Highlands			
- Cherty Limestone and Dolomite	149,061	8,585	17
Ozark Highlands			
- Sandstone and Limestone	6,038	400	15
Boston Mountains	29,664	2,921	10
Arkansas Valley and Ridges	61,063	4,777	13
Ouachita Mountains	40,057	4,864	8
Bottom Lands and Terraces	449,148	13,421	34
Coastal Plain	43,310	3,413	13
Loessial Plains	409,557	10,685	38
Loessial Hills	14,249	1,142	13
Blackland Prairie	3,706	279	13

Table 2. Sample number and total acreage by county for soil samples submitted to the University of Arkansas Soil Testing and Research Laboratory in Marianna from September 2001 through August 2002.

County	Acres sampled	No. of samples	Acres/sample	County	Acres sampled	No. of samples	Acres/sample
Arkansas, DeWitt	74,831	2,085	36	Lincoln	9,875	358	28
Arkansas, Stuttgart	74,035	2,013	37	Little River	4,812	110	44
Ashley	30,689	957	32	Logan, Booneville	2,585	176	15
Baxter	2,136	366	6	Logan, Paris	7,695	410	19
Benton	31,471	2,155	15	Lonoke	82,490	2,049	40
Boone	8,091	558	15	Madison	10,526	707	15
Bradley	583	113	5	Marion	7,721	260	30
Calhoun	278	23	12	Miller	11,736	321	37
Carroll	11,015	609	18	Mississippi, Blytheville	27,350	909	30
Chicot	18,594	240	78	Mississippi, Osceola	6,795	138	49
Clark	1,755	229	8	Monroe	29,630	562	53
Clay, Corning	15,376	764	20	Montgomery	3,628	204	18
Clay, Piggott	18,291	579	32	Nevada	1,175	82	14
Cleburne	3,011	334	9	Newton	2,988	127	24
Cleveland	376	45	8	Ouachita	1,307	302	4
Columbia	2,501	274	9	Perry	6,178	328	19
Conway	11,786	511	23	Phillips	18,387	449	41
Craighead	50,672	1,564	32	Pike	3,252	182	18
Crawford	8,600	495	17	Poinsett	34,375	936	37
Crittenden	29,765	849	35	Polk	7,095	385	18
Cross	83,144	1,522	55	Pope	15,706	894	18
Dallas	249	94	3	Prairie, Des Arc	15,066	336	45
Desha	21,364	1,701	13	Prairie, DeValls Bluff	11,725	236	50
Drew	1,746	199	9	Pulaski	8,754	1,880	5
Faulkner	4,629	440	11	Randolph	10,081	510	20
Franklin, Charleston	578	55	11	Saline	1,211	312	4
Franklin, Ozark	7,357	372	20	Scott	1,847	129	14
Fulton	2,325	172	14	Searcy	6,462	328	20
Garland	3,291	1,619	2	Sebastian (Fort Smith)	1,381	306	5
Grant	580	129	5	Sebastian (Greenwood)	1,266	183	7
Greene	28,302	1,376	21	Sevier	5,585	200	28
Hempstead	4,876	263	19	Sharp	3,027	270	11
Hot Spring	2,418	178	14	St. Francis	20,293	667	30
Howard	5,955	408	15	Stone	2,015	162	12
Independence	10,254	374	27	Union	3,260	516	6
Izard	4,407	241	18	Van Buren	6,032	436	14
Jackson	21,189	642	33	Washington	63,132	3,238	20
Jefferson	47,967	1,305	37	White	9,930	1,680	6
Johnson	6,513	476	14	Woodruff	13,033	302	43
Lafayette	3,075	139	22	Yell, Danville	5,359	290	19
Lawrence	33,922	1,142	30	Yell, Dardanelle	3,094	146	21
Lee	29,997	861	35				

Table 3. Sample number and total acreage by soil association number (SAN) for soil samples submitted to the University of Arkansas Soil Testing and Research Laboratory in Marianna from September 2001 through August 2002.

SAN	Soil Association	Acres sampled	No. of samples	Acres/sample
1.	Clarksville-Nixa-Noark	19,144	1,093	18
2.	Gepp-Doniphan-Gassville-Agnos	14,104	1,166	12
3.	Arkana-Moko	13,680	719	19
4.	Captina-Nixa-Tonti	94,236	5,353	18
5.	Captina-Doniphan-Gepp	5,514	127	43
6.	Eden-Newnata-Moko	2,383	127	19
7.	Estate-Portia-Moko	2,057	131	16
8.	Brockwell-Boden-Portia	3,981	269	15
9.	Linker-Mountainburg-Sidon	10,133	689	15
10.	Enders-Nella-Mountainburg-Steprock	19,531	2,232	9
11.	Falkner-Wrightsville	1,423	75	19
12.	Leadvale-Taft	22,658	1,927	12
13.	Enders-Mountainburg-Nella-Steprock	5,793	372	16
14.	Spadra-Guthrie-Pickwick	2,354	178	13
15.	Linker-Mountainburg	28,835	2,225	13
16.	Carnasaw-Pirum-Clebit	19,031	2,807	7
17.	Kenn-Ceda-Avilla	3,324	206	16
18.	Carnasaw-Sherwood-Bismarck	11,440	1,499	8
19.	Carnasaw-Bismarck	590	50	12
20.	Leadvale-Taft	1,224	68	18
21.	Spadra-Pickwick	4,448	234	19
22.	Foley-Jackport-Crowley	82,645	2,818	29
23.	Kobel	14,011	375	37
24.	Sharkey-Alligator-Tunica	30,101	676	45
25.	Dundee-Bosket-Dubbs	88,316	2,306	38
26.	Amagon-Dundee	35,859	1,136	32
27.	Sharkey-Steele	5,956	172	35
28.	Commerce-Sharkey-Crevasse-Robinsonville	23,169	441	53
29.	Perry-Portland	34,766	1,881	19
30.	Crevasse-Bruno-Oklared	357	15	24
31.	Roxana-Dardanelle-Bruno-Roellen	7,816	317	25
32.	Rilla-Hebert	112,037	2,930	38
33.	Billyhaw-Perry	6,258	143	44
34.	Severn-Oklared	6,897	148	47
35.	Adaton	95	4	24
36.	Wrightsville-Louin-Acadia	612	28	22
37.	Muskogee-Wrightsville-McKamie	253	31	8
38.	Amy-Smithton-Pheba	4,047	159	26
39.	Darco-Briley-Smithdale	613	42	15
40.	Pheba-Amy-Savannah	2,380	331	7
41.	Smithdale-Sacul-Savannah-Saffell	11,298	1,224	9
42.	Sacul-Smithdale-Sawyer	19,200	1,347	14
43.	Guyton-Ouachita-Sardis	5,772	310	19
44.	Calloway-Henry-Grenada-Calhoun	232,471	6,060	38
45.	Crowley-Stuttgart	177,086	4,625	38
46.	Loring	1,897	92	21
47.	Loring-Memphis	12,196	1,037	12
48.	Brandon	156	13	12
49.	Oktibbeha-Sumter	3,706	279	3

Table 4. Sample number and total acreage by crop for soil samples submitted to the University of Arkansas Soil Testing and Research Laboratory in Marianna from September 2001 through August 2002.

Crop	Acres sampled	No. of samples	Acres/sample
Soybean - dryland	42,236	1,237	34
Soybean - irrigated	421,331	10,236	41
Cotton	191,247	5,812	33
Rice	86,428	2,057	42
Wheat	19,089	589	32
Double-crop wheat-soybean - dryland	5,792	200	29
Double-crop wheat-soybean - irrigated	15,913	318	50
Warm season grass - establish	12,208	613	20
Warm season grass - maintain	96,384	4,632	21
Cool season grass - establish	31,496	1,244	25
Cool season grass - maintain	56,150	2,607	22
Grain sorghum	12,102	302	40
Corn	23,424	594	39
All garden	8,665	3,266	3
Turf and ground cover	11,122	6,788	2
Fruit and nut	1,159	481	2
Vegetable	57	11	5
Other	171,050	9,500	18

Table 5. Soil test data by geographic area for soil samples submitted to the University of Arkansas Soil Testing and Research Laboratory in Marianna from September 2001 through August 2002.

Geographic area	pH		P ^z (lb/acre)				K ^z (lb/acre)				EC ^y (µmhos/cm)			
	<5.5	5.5-6.5	<26	26-44	45-100	101-300	>300	<176	176-220	221-350	>350	<100	100-500	>500
Ozark Highlands														
- Cherty Limestone and Dolomite	12	59	4	8	21	38	29	22	12	29	37	82	17	1
Ozark Highlands														
- Sandstone and Limestone	7	61	11	19	29	25	16	36	13	27	24	91	9	0
Boston Mountains	15	59	5	11	27	41	16	35	14	27	24	85	15	0
Arkansas Valley and Ridges	22	58	13	13	23	30	21	36	14	26	24	89	11	0
Ouachita Mountains	26	56	7	11	26	35	21	42	16	25	17	87	13	0
Bottom Lands and Terraces	6	47	9	16	47	27	1	19	15	37	29	96	4	0
Coastal Plain	24	52	11	12	21	33	23	46	15	23	16	91	8	1
Loessial Plains	6	34	21	33	36	9	1	38	25	28	9	95	5	0
Loessial Hills	15	52	22	17	31	23	7	26	14	37	23	87	12	1
Blackland Prairie	36	39	17	16	24	31	12	39	13	17	31	83	16	1
Average	17	52	12	16	29	29	14	34	15	28	23	89	11	0

(Percentage of sampled acreage)

^z Analysis by 1:7 soil weight:Mehlich-3 volume.

^y EC = electrical conductivity; which is a measure of soluble salts in 1:2 soil weight:water volume.

Table 6. Soil test data by county for soil samples submitted to the University of Arkansas Soil Testing and Research Laboratory in Marianna from September 2001 through August 2002.

Geographic area	pH		Pz (lb/acre)					Kz (lb/acre)					ECy (µmhos/cm)		
	<5.5	5.5-6.5	<26	26-44	45-100	101-300	>300	<176	176-220	221-350	>350	<100	100-500	>500	
----- (Percentage of sampled acreage) -----															
Arkansas, DeWitt	3	23	21	42	33	3	1	37	30	27	6	97	3	0	
Arkansas, Stuttgart	8	43	31	32	31	6	0	33	25	28	14	93	7	0	
Ashley	5	28	12	12	33	41	2	23	16	45	16	95	5	0	
Baxter	5	30	65	4	14	22	31	18	13	28	41	71	28	1	
Benton	11	64	25	1	4	17	40	19	10	29	42	77	23	0	
Boone	8	57	35	4	14	32	36	28	12	28	32	88	11	1	
Bradley	8	25	67	5	7	18	43	34	23	34	9	98	2	0	
Calhoun	9	52	39	0	0	30	52	48	26	17	9	91	9	0	
Carroll	4	53	43	1	3	21	43	16	8	27	49	71	27	2	
Chicot	5	33	62	12	36	27	20	8	6	30	56	88	11	1	
Clark	43	38	19	16	11	26	31	59	11	16	14	94	5	1	
Clay, Corning	3	55	42	13	33	43	10	48	25	23	4	98	2	0	
Clay, Piggott	6	49	45	9	16	44	29	24	15	40	21	97	3	0	
Cleburne	18	62	20	7	14	27	33	36	13	31	20	90	9	1	
Cleveland	16	73	11	18	11	29	27	58	9	20	13	98	2	0	
Columbia	34	45	21	11	10	18	39	50	14	26	10	91	8	1	
Conway	29	58	13	17	12	19	24	34	13	22	31	95	5	0	
Craighead	5	38	57	10	18	43	27	21	13	39	27	92	8	0	
Crawford	17	62	21	11	15	29	31	37	18	29	16	94	6	0	
Crittenden	6	48	46	1	7	59	31	1	3	36	60	97	3	0	
Cross	3	19	78	19	34	40	6	43	23	21	13	97	3	0	
Dallas	21	55	24	18	17	19	27	61	22	11	6	96	4	0	
Desha	3	35	62	5	11	55	29	12	13	35	40	97	3	0	
Drew	30	43	27	19	11	24	32	31	11	33	25	86	13	1	
Faulkner	28	41	31	14	18	22	29	30	17	28	25	81	17	2	
Franklin, Charleston	22	40	38	16	16	20	44	26	22	35	17	98	2	0	
Franklin, Ozark	22	66	12	8	9	20	32	29	11	27	33	85	15	0	
Fulton	6	56	38	7	13	24	44	19	15	30	36	84	16	0	
Garland	26	58	16	4	11	31	39	50	16	24	10	81	19	0	
Grant	29	50	11	17	17	15	33	44	12	23	21	86	12	2	
Greene	12	57	31	22	26	36	15	31	18	34	17	96	4	0	
Hempstead	26	46	28	15	11	30	28	41	13	20	26	90	10	0	
Hot Spring	29	47	24	11	11	16	32	53	11	22	14	93	6	1	
Howard	20	64	16	4	4	11	23	24	9	30	37	85	14	1	
Independence	14	52	34	10	16	30	34	39	20	28	13	90	9	1	
Izard	9	58	33	14	17	25	30	47	17	19	17	88	12	0	
Jackson	8	55	37	12	21	44	20	34	24	30	12	92	8	0	
Jefferson	8	46	46	4	8	50	33	18	16	42	24	95	4	1	
Johnson	19	62	19	11	15	21	31	36	12	26	26	90	10	0	
Lafayette	15	53	32	7	6	27	33	27	20	30	23	91	9	0	
Lawrence	3	61	36	27	34	33	6	37	26	29	8	97	3	0	
Lee	7	47	46	3	11	63	23	17	23	43	17	98	2	0	
Lincoln	8	44	48	5	8	39	42	17	14	40	29	98	2	0	
Little River	11	49	40	11	22	38	20	45	13	17	25	89	9	2	

continued

Table 6. Continued.

Geographic area	pH		P ^z (lb/acre)				K ^z (lb/acre)				EC ^y (µmhos/cm)			
	<5.5	5.5-6.5	<26	26-44	45-100	101-300	>300	<176	176-220	221-350	>350	<100	100-500	>500
Logan, Booneville	30	59	40	13	21	18	8	56	16	17	11	92	8	0
Logan, Paris	18	61	11	16	28	32	13	41	14	19	26	95	5	0
Lonoke	10	53	16	25	42	16	1	26	20	35	19	94	6	0
Madison	14	74	5	10	15	43	27	25	11	30	34	91	9	0
Marion	11	52	3	12	25	40	20	19	13	30	38	85	15	0
Miller	22	48	10	19	26	35	10	37	16	22	25	89	11	0
Mississippi, Blytheville	10	66	1	2	44	51	2	6	7	49	38	97	3	0
Mississippi, Osceola	2	60	4	17	55	23	1	2	11	30	57	93	7	0
Monroe	3	34	22	26	43	8	1	32	24	32	12	97	3	0
Montgomery	27	60	4	7	16	35	38	40	10	22	28	91	8	1
Nevada	21	67	26	13	17	29	15	39	13	28	20	89	11	0
Newton	12	56	13	18	32	21	16	33	13	25	29	89	11	0
Ouachita	25	59	10	5	15	49	21	53	15	23	9	90	9	1
Perry	30	64	22	15	20	25	18	39	12	24	25	88	12	0
Phillips	10	44	3	10	50	36	1	15	15	46	24	94	6	0
Pike	23	62	4	9	9	27	51	42	14	22	22	85	14	1
Poinsett	3	22	27	28	31	13	1	44	20	22	14	95	5	0
Polk	39	53	6	10	19	37	28	47	14	21	18	91	9	0
Pope	22	57	11	13	24	29	23	36	12	25	27	91	9	0
Prairie, Des Arc	3	38	21	36	35	7	1	41	32	22	5	94	6	0
Prairie, DeValls Bluff	9	35	23	48	23	4	2	45	28	19	8	92	8	0
Pulaski	23	50	8	12	26	35	19	34	20	30	16	87	13	0
Randolph	11	44	15	19	46	17	3	33	21	27	19	94	6	0
Saline	28	51	9	14	23	31	23	51	9	21	19	86	13	1
Scott	19	66	9	15	24	37	15	40	9	21	30	92	6	2
Searcy	24	63	9	9	29	40	13	30	10	28	32	87	13	0
Sebastian, Fort Smith	23	43	12	6	22	32	28	26	12	30	32	75	24	1
Sebastian, Greenwood	9	69	16	19	14	27	24	44	15	22	19	92	8	0
Sevier	30	63	10	12	15	34	29	43	8	23	26	94	5	1
Sharp	10	58	12	20	34	23	11	35	13	33	19	88	11	1
St. Francis	6	36	9	27	46	15	3	26	21	34	19	95	5	0
Stone	19	63	4	4	22	36	34	28	11	28	33	82	17	1
Union	16	48	10	14	30	35	11	55	20	19	6	95	5	0
Van Buren	20	68	8	12	30	32	18	37	13	29	21	90	10	0
Washington	13	62	4	7	19	40	30	23	11	29	37	84	16	0
White	15	52	8	13	29	41	9	39	16	28	17	82	18	0
Woodruff	7	66	11	22	53	14	0	23	24	46	7	97	3	0
Yell, Danville	26	69	21	9	24	33	13	40	15	21	24	95	5	0
Yell, Dardanelle	12	56	5	12	27	36	20	21	14	34	31	95	5	0
Average	15	53	11	15	29	29	16	34	16	28	22	91	9	0

^z Analysis by 1:7 soil weight:Mehlich-3 volume.

^y EC = electrical conductivity; which is a measure of soluble salts in 1:2 soil weight:water volume.

Table 7. Soil test data by soil association number (SAN) for soil samples submitted to the University of Arkansas Soil Testing and Research Laboratory from September 2001 through August 2002.

SAN	Soil Association	pH		Pz (lb/acre)				Kz (lb/acre)				ECy (µmhos/cm)			
		<5.5	5.5-6.5	<26	26-44	45-100	101-300	>300	<176	176-220	221-350	>350	<100	100-500	>500
1.	Clarksville- Nixa- Noark	12	63	5	10	22	43	20	23	13	31	33	86	13	1
2.	Gepp-Doniphan-Gassville-Agnos	8	46	11	16	28	29	16	23	15	29	33	84	15	1
3.	Arkana-Moko	8	51	6	10	26	37	21	30	12	23	35	79	20	1
4.	Captina-Nixa-Tonti	13	63	3	5	18	40	34	21	11	29	39	81	19	0
5.	Captina-Doniphan-Gepp	5	57	6	15	37	32	10	11	16	32	41	90	10	0
6.	Eden-Newnata-Moko	28	62	7	8	29	46	10	30	11	32	27	92	8	0
7.	Estate-Portia-Moko	4	51	11	10	18	31	30	22	12	25	41	83	17	0
8.	Brockwell-Boden-Portia	9	65	12	23	34	22	9	43	13	28	16	94	6	0
9.	Linker-Mountainburg-Sidon	11	61	5	13	26	35	21	31	14	27	28	83	16	1
10.	Enders-Nella-Mountainburg-Steprock	16	58	6	10	27	42	15	37	14	27	22	85	15	0
11.	Falkner-Wrightsville	32	65	16	13	25	36	10	37	8	39	16	88	12	0
12.	Leadvale-Taft	20	54	15	13	21	31	20	34	15	26	25	87	13	0
13.	Enders-Mountainburg-Nella-Steprock	30	61	22	18	27	23	10	52	12	22	14	96	4	0
14.	Spadra-Guthrie-Pickwick	20	67	17	10	25	29	19	41	12	24	23	93	6	1
15.	Linker-Mountainburg	22	59	10	13	24	31	22	34	14	27	25	89	11	0
16.	Carnasaw-Pirum-Clebit	23	54	7	12	27	35	19	41	17	26	16	85	14	1
17.	Kenn-Ceda-Avilla	33	57	17	12	20	29	22	50	13	22	15	96	4	0
18.	Carnasaw-Sherwood-Bismarck	30	58	3	9	26	38	24	44	16	24	16	87	13	0
19.	Carnasaw-Bismarck	28	44	4	10	26	34	26	46	12	14	28	80	20	0
20.	Leadvale-Taft	32	54	34	7	27	19	13	34	15	16	35	94	6	0
21.	Spadra-Pickwick	29	64	25	11	23	26	15	42	10	27	21	91	8	1
22.	Foley-Jackport-Crowley	6	56	20	31	39	9	1	34	25	30	11	96	4	0
23.	Kobel	9	55	15	24	41	19	1	26	22	40	12	98	2	0
24.	Sharkey-Alligator-Tunica	4	45	6	21	57	16	0	6	5	16	73	96	3	1
25.	Dundee-Bosket-Dubbs	6	47	7	13	48	31	1	20	13	39	28	97	3	0
26.	Amagon-Dundee	10	65	1	4	43	49	3	10	9	47	34	96	3	1
27.	Sharkey-Steele	0	41	0	15	62	23	0	4	4	25	67	95	5	0
28.	Commerce-Sharkey-Crevasse-Robinsonville	3	39	5	11	58	25	1	3	3	29	65	90	10	0
29.	Perry-Portland	4	34	6	15	51	26	2	14	14	36	36	96	4	0
30.	Crevasse-Bruno-Oklared	27	27	7	20	27	7	39	7	20	20	53	80	20	0
31.	Roxana-Dardanelle-Bruno-Roellen	22	49	14	16	30	28	12	37	13	27	23	93	7	0
32.	Rilla-Hebert	4	42	3	8	51	37	1	12	15	48	25	97	3	0
33.	Billyhaw-Perry	8	40	8	13	43	36	0	20	10	41	29	93	5	2
34.	Severn-Oklared	12	41	10	17	43	25	5	20	19	22	39	94	6	0
35.	Adaton	50	25	50	25	25	0	0	100	0	0	0	100	0	0
36.	Wrightsville-Louin-Acadia	14	79	7	4	18	29	42	39	21	32	8	100	0	0
37.	Muskogee-Wrightsville-McKamie	42	42	32	19	19	19	11	36	23	36	5	87	10	3
38.	Amy-Smithton-Pheba	19	51	21	11	24	31	13	55	15	15	15	93	6	1
39.	Darco-Briley-Smithdale	12	60	0	17	38	31	14	52	12	12	24	86	14	0
40.	Pheba-Amy-Savannah	24	55	16	13	18	31	22	50	13	22	15	93	6	1
41.	Smithdale-Sacul-Savannah-Saffell	25	52	9	7	15	35	34	43	14	26	17	89	10	1
42.	Sacul-Smithdale-Sawyer	23	52	11	15	27	31	16	47	17	22	14	91	8	1
43.	Guyton-Ouachita-Sardis	31	52	8	11	24	35	22	47	14	21	18	95	4	1
44.	Calloway-Henry-Grenada-Calhoun	6	33	18	30	39	12	1	40	23	28	9	95	5	0

continued

Table 7. Continued.

SAN	Soil Association	pH		P ^z (lb/acre)				K ^z (lb/acre)				EC ^y (µmhos/cm)			
		<5.5	5.5-6.5	<26	26-44	45-100	101->300	<176	176-220	221-350	>350	<100	100-500	>500	
----- (Percentage of sampled acreage) -----															
45.	Crowley-Stuttgart	6	35	26	37	32	5	0	34	27	28	11	94	6	0
46.	Loring	28	46	16	22	28	25	9	40	19	22	19	75	22	3
47.	Loring-Memphis	14	52	22	17	32	23	6	24	14	39	23	88	12	0
48.	Brandon	23	54	54	0	31	8	7	69	0	8	23	100	0	0
49.	Oktibeha-Sumter	36	39	17	16	24	31	12	39	13	17	31	83	16	1
	Average	18	52	13	14	31	28	14	34	14	27	25	91	9	0

^z Analysis by 1:7 soil weight:Mehlich-3 volume.

^y EC = electrical conductivity; which is a measure of soluble salts in 1:2 soil weight:water volume.

Table 8. Soil test data by crop for soil samples submitted to the University of Arkansas Soil Testing and Research Laboratory in Marianna from September 2001 through August 2002.

Crop	pH		P ^z (lb/acre)				K ^z (lb/acre)				No ₃ -N ^y (lb/acre)				EC ^x (µmhos/cm)										
	<5.5	5.5-6.5	>6.5	Md ^y	<26	26-44	45-100	101-176	176-221	>300	Md	<176	176-220	220-350	>350	Md	<26	100	>100	Md	<100	100	>500	Md	
	(Percentage of sampled acreage)																								
Soybean - dryland	12	56	32	6.3	11	22	51	16	0	58	25	23	30	22	227	98	2	0	9	91	9	0	29		
Soybean - irrigated	2	34	64	6.8	20	36	40	4	0	41	38	25	26	11	195	98	2	0	8	96	3	1	35		
Cotton	3	44	53	6.6	1	3	51	45	0	97	5	11	50	34	305	99	1	0	8	96	4	0	32		
Rice	6	41	53	6.6	29	33	35	3	0	37	36	19	28	17	207	88	12	0	7	79	20	1	43		
Wheat	22	58	20	6.0	13	17	48	22	0	63	28	18	33	21	233	92	8	0	14	79	18	3	36		
Double-crop wheat-soybean - dryland	9	57	34	6.3	2	14	63	21	0	70	7	17	53	23	273	89	11	0	8	73	27	0	29		
Double-crop wheat - soybean - irrigated	5	35	60	6.7	10	23	56	11	0	53	29	25	33	13	210	98	2	0	8	89	11	0	35		
Warm season grass - establish	19	60	21	6.1	8	7	21	30	34	161	32	13	26	29	243	87	12	1	17	65	32	13	48		
Warm season grass - maintain	20	67	13	5.9	9	10	22	31	28	132	35	13	27	25	229	93	7	0	13	77	21	2	39		
Cool season grass - establish	16	72	12	6.0	2	6	18	43	31	203	24	13	27	36	281	86	13	1	18	65	32	3	52		
Cool season grass - maintain	13	70	17	6.0	5	10	23	38	24	151	27	13	29	31	265	88	12	0	15	71	26	3	45		
Grain sorghum	7	52	41	6.4	8	20	49	23	0	68	24	24	31	21	228	98	2	0	9	93	6	1	31		
Corn	9	51	40	6.4	6	15	55	23	1	67	21	21	44	14	240	98	2	0	11	78	21	1	38		
All garden	10	36	54	6.6	3	5	14	34	44	259	17	11	26	46	326	74	25	1	17	63	28	9	61		
Turf and ground cover	19	52	29	6.2	5	11	29	45	10	111	37	17	30	16	209	84	16	0	17	64	32	4	51		
Fruit and nut	29	48	23	6.0	15	15	26	30	14	78	43	10	24	23	204	86	14	0	12	80	15	5	44		
Vegetable	27	18	55	6.6	18	9	9	18	46	295	46	0	9	45	232	82	18	0	10	75	13	12	49		
Other	22	54	24	6.0	16	16	25	27	16	79	38	14	25	23	212	87	12	1	12	77	20	3	42		
Average	14	50	36		10	15	35	26	14		28	16	31	25		90	10	0		78	19	3			

^z Analysis by 1:7 soil weight:Mehlich-3 volume.

^y Number of plant samples from first to last categories are 463, 1050, 5689, 286, 101, 114, 87, 379, 2267, 1200, 1644, 116, 447, 1277, 951, 118, 8, and 3656.

^x EC = electrical conductivity; which is a measure of soluble salts in 1:2 soil weight:water volume.

Table 9. Fertilizer consumption in Arkansas counties from 1 July 2001 through 30 June 2002^z.

County	Total	County	Total
	(tons)		(tons)
Arkansas	87,809	Lee	27,705
Ashley	19,564	Lincoln	13,632
Baxter	4,285	Little River	769
Benton	14,886	Logan	3,880
Boone	7,553	Lonoke	44,048
Bradley	3,065	Madison	6,508
Calhoun	352	Marion	1,380
Carroll	4,133	Miller	9,386
Chicot	20,242	Mississippi	70,490
Clark	5,061	Monroe	33,709
Clay	44,468	Montgomery	557
Cleburne	3,490	Nevada	2,484
Cleveland	155	Newton	1,196
Columbia	776	Ouachita	126
Conway	8,990	Perry	2,316
Craighead	49,097	Phillips	68,431
Crawford	12,251	Pike	13,445
Crittenden	22,878	Poinsett	75,810
Cross	47,782	Polk	1,949
Dallas	13	Pope	3,107
Desha	40,254	Prairie	36,159
Drew	6,520	Pulaski	12,638
Faulkner	5,895	Randolph	21,455
Franklin	4,425	Saline	4,135
Fulton	2,880	Scott	1,534
Garland	186	Searcy	1,423
Grant	279	Sebastian	173
Greene	28,437	Sevier	5,404
Hempstead	5,555	Sharp	1,434
Hot Spring	1,779	St. Francis	52,344
Howard	2,073	Stone	3,452
Independence	11,940	Union	1,645
Izard	4,615	Van Buren	10,212
Jackson	37,238	Washington	6,040
Jefferson	37,234	White	47,870
Johnson	2,305	Woodruff	30,841
Lafayette	6,857	Yell	2,090
Lawrence	28,457		

^z Arkansas Distribution of Fertilizer Sales by Counties July 1, 2001-June 30, 2002, Arkansas State Plant Board, Division of Feed and Fertilizer, Little Rock, Arkansas and University of Arkansas AES, Fayetteville, Arkansas.

Table 10. Fertilizer nutrient and formulation consumed in Arkansas from 1 July 2001 through 30 June 2002^z.

Fertilizer	Bulk	Bagged	Fluid	Totals
	----- (tons) -----			
Mixed	397,421	42,571	14,299	454,291
Nitrogen	525,157	5,201	113,340	643,698
Phosphate	21,129	157	0	21,286
Potash	44,887	560	49	45,496
Other	35,479	2,689	613	38,781
Totals	1,024,073	51,178	128,300	1,203,551

^z Arkansas Distribution of Fertilizer Sales By Counties July 1, 2001-June 30, 2002, Arkansas State Plant Board, Division of Feed and Fertilizer, Little Rock, Arkansas and University of Arkansas AES, Fayetteville, Arkansas.