Introduction

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Rice production in Arkansas began in 1902 with one acre of rice grown in Lonoke County. By 1904, Arkansas rice acreage had expanded to 460 acres. Official state records on yields, harvested acres and prices have been kept on rice production since 1905 (Table Intro-1). Rice acreage gradually increased until 1955 when the first government acreage controls stabilized rice production on about 500,000 acres. Marketing quotas were lifted in 1974 and rice acreage increased, peaking in 1981 at 1.54 million harvested acres. In 1999, Arkansas rice producers planted a record acreage of 1.65 million acres. Currently, rice is grown in 40 of the state's 75 counties and ranks as one of the top three crop commodities in cash receipts for Arkansas farmers.

The Arkansas rice producing area is primarily in the eastern one-half of the state. Rice is also produced up the Arkansas River Valley and in southwest Arkansas. The state latitude range is from about 33° N where Arkansas borders Louisiana in the South to 36° 30' N along the northern border of Missouri. The state longitude ranges from 89° 36' W to 94° 36' W.

Approximately 55, 35 and 9 percent of the rice grown in Arkansas is produced on silt loam, clay and sandy loam soils, respectively. The predominate seeding method is direct dry seeded. About 70 percent of the rice is drill seeded, 28 percent is broadcast seeded and only about 2 percent is water seeded.

Arkansas produces about 40 to 45 percent of the U.S. rice and ranks number one in acres planted and bushels produced. Arkansas has been the nation's leading rice-producing state since 1973. Other major rice-producing states include California, Louisiana, Texas, Mississippi, Missouri and Florida. Prior to 1973, no one state dominated rice production. Arkansas, California, Louisiana and Texas each accounted for near equal proportions of the rice production in the U.S.

Rice planting typically starts during the first week of April and continues into early June. Planting is approximately 50 and 95 percent completed by April 25 and May 30, respectively. Since most of Arkansas rice production is a direct dry seeded culture, flooding of rice fields begins at the end of May and early June.

Rice harvest begins during the middle of August and usually peaks about the second week of September. Planting progress statistics suggest that rice planting progress has not changed over the last 30 years. However, the five-year averages for rice harvest progress by September 20 between 1969-1973 and 1992-1996 indicate that 16 and 48 percent of rice acreage was harvested, respectively. Increased harvest efficiency and new shorter season rice varieties developed during the past 15 years are primarily responsible for faster harvest.

In Arkansas, rice yields have increased dramatically since the early 1980s. Prior to 1985, Arkansas' highest average yield was in 1971 at 112 bushels per acre. Since 1985, the state average yield record has been broken six times. The current record of 136.6 bushels per acre (45 pounds rough rice per bushel) was set in 1996. The highest county average yield is 148.8 bushels per acre produced by Lonoke County rice growers in 1996. The common range for rough rice yields in Arkansas commercial rice fields is 100 to 200 bushels per acre at 12 percent moisture.

Arkansas and Poinsett Counties are the two largest rice-producing counties in the state and rank among the top five counties in the nation in acres planted and bushels produced. Since 1993, Arkansas and Poinsett Counties have averaged more than 100,000 harvested acres of rice. Cross, Jackson, Craighead, Lonoke and Prairie Counties rank next in number of harvested rice acres.

Table Intro-2 shows the variety distribution on Arkansas rice acreage for the past 30 years. The history of rice production reveals two recent

phases when yields increased dramatically over a two- to three-year period. Each phase coincides with the release, subsequent acceptance and widespread growth of a new variety or varieties (Tables Intro-1 and Intro-2).

The first phase started in 1967 when Starbonnet was first released by the University of Arkansas. Prior to 1967, the highest average rice yield was 96 bushels per acre. Record yields were produced in four of the next five years. In 1969, Starbonnet replaced Bluebonnet as the most popular rice variety and remained the number one variety through 1984. In 1985, yields again increased several bushels per acre. Newbonnet and Lemont were released in 1983, and in 1985 Newbonnet replaced Starbonnet as the most widely grown variety. In 1984, Starbonnet, Lebonnet and Labelle were planted on 80.7 percent of the state's acres. In 1985, these three varieties were planted on less than 13 percent of the state's acreage. In comparison, Newbonnet and Lemont acreage increased from 6.5 percent in 1984 to almost 77 percent in 1985. More recently, varieties like Bengal, Cypress, Drew, Kaybonnet and LaGrue have increased the overall state average yields.

A new era of rice varieties and new yield records are on the horizon as we enter the 21st century. In the past two years mid-south land grant universities have released several new varieties that will replace currently grown varieties and again increase rice yields when seed is readily available to growers.

Between 1967 and 1985, rice acreage increased from 0.5 million acres to over 1 million acres. This increase in rice acreage may have contributed to the lower yields of the late 1970s and early 1980s. Two additional factors contributing to lower yields were marginal land being placed in production and producers adjusting to managing more acres. In addition to the availability of improved varieties, other events have significantly impacted Arkansas rice production over the past 20 years. In 1975, 53 rice growers in 11 counties field tested an alternate method of timing mid-season nitrogen fertilizer applications. The program, now known as the computerized DD50 program, helps farmers with 28 management decisions and is used on 65 percent or more of the state's acreage. Other important events and dates in rice production are listed below:

- 1961 – Propanil first used in commercial rice fields
- 1968 – Molinate first used in commercial rice fields
- 1982 – Collego labeled to control northern jointvetch
- 1989 – Katy released as blast tolerant variety
- 1990 – Gibberellic acid seed treatment received label
- 1990 – Propanil-resistant barnyardgrass documented
- 1991 – Sheath blight treatment thresholds changed to account for variety tolerance
- 1992 – Facet labeled for weed control in rice
- 1998 – Dale Bumpers National Germplasm Center completed
- 1999 – Facet-resistant barnyardgrass documented

The goal of the University of Arkansas Division of Agriculture is to assist farmers in producing profitable, high yielding crops that enable our growers to be competitive on the world market. The Cooperative Extension Service is proud to present a summary of research-based recommendations and an overview of Arkansas rice production in this handbook. The information presented and publication of this handbook was made possible through cooperative efforts of the University of Arkansas Division of Agriculture and the Arkansas rice growers through grower check-off contributions.

Links to other Sources of U.S. Rice Production Information

Cooperative Extension Service, University of Arkansas – http://www.aragriculture.org

University of Arkansas – http://www.uark.edu/depts/agripub/Publications/

Louisiana State University – http://www.agctr.lsu.edu/wwwac/rice/RiceHome.html

Mississippi State University – http://ext.msstate.edu/anr/plantsoil/

Texas A&M University – http://soil-testing.tamu.edu/ or http://soilcrop.tamu.edu/

University of California-Davis – http://agronomy.ucdavis.edu/uccerice/index.htm

University of Florida – http://EREC.ifas.ufl.edu/Erptoc.htm and http://edis.ifas.ufl.edu/MENU_RH:RHTOP

University of Missouri – http://agebb.missouri.edu/rice/index.htm

Table Intro-1. History of Arkansas Rice Acreage and State Average Yield

Year	Harvested Acres (1,000)	Yield (bu)	Average Price ($/cwt)	Year	Harvested Acres (1,000)	Yield (bu)	Average Price ($/cwt)
1905	1	32.0	2.25	1953	494	51.1	4.93
1906	4	38.0	1.89	1954	672	55.6	4.25
1907	6	37.5	1.89	1955	434	69.4	5.00
1908	11	42.6	2.04	1956	382	71.1	4.93
1909	27	46.8	1.93	1957	332	68.9	5.16
1910	60	45.0	1.51	1958	336	65.6	4.94
1911	72	44.0	1.80	1959	383	75.6	4.60
1912	91	43.5	1.98	1960	384	78.3	4.41
1913	105	42.0	2.04	1961	384	77.8	5.20
1914	93	42.5	1.91	1962	426	85.6	5.10
1915	100	46.0	1.89	1963	426	95.6	4.92
1916	125	50.5	2.20	1964	430	95.6	4.87
1917	152	45.5	4.20	1965	434	95.6	4.98
1918	170	42.0	3.51	1966	477	95.6	5.09
1919	160	47.5	4.93	1967	477	101.1	5.12
1920	180	49.0	2.38	1968	572	95.6	5.07
1921	140	53.5	2.00	1969	515	105.6	5.32
1922	163	48.0	1.98	1970	438	106.7	5.41
1923	143	39.5	2.29	1971	441	112.2	5.62
1924	166	43.0	2.78	1972	441	110.6	7.20
1925	176	43.0	3.16	1973	533	106.0	15.30
1926	196	52.8	2.29	1974	710	102.4	11.40
1927	179	43.0	1.91	1975	898	100.9	8.54
1928	173	47.9	1.89	1976	847	106.0	7.25
1929	156	51.0	2.11	1977	837	94.0	9.79
1930	173	47.5	1.76	1978	1090	98.9	8.47
1931	177	55.0	0.98	1979	1020	96.0	10.60
1932	163	51.0	0.84	1980	1280	91.3	12.30
1933	147	49.0	1.78	1981	1540	100.4	9.37
1934	141	47.2	1.82	1982	1330	95.3	8.61
1935	138	44.0	1.82	1983	915	95.1	9.18
1936	160	54.7	1.82	1984	1150	102.2	8.51
1937	189	56.0	1.33	1985	1050	115.6	6.70
1938	189	51.4	1.38	1986	1020	117.8	3.68
1939	171	50.0	1.67	1987	1010	116.7	7.60
1940	191	50.2	1.80	1988	1210	118.9	6.90
1941	212	51.5	2.73	1989	1140	124.4	7.46
1942	265	48.0	3.56	1990	1200	111.1	6.75
1943	257	47.0	3.80	1991	1260	117.8	7.69
1944	287	52.5	3.87	1992	1380	122.2	5.39
1945	281	47.0	3.84	1993	1230	112.2	7.97
1946	320	44.5	5.04	1994	1420	126.7	6.52
1947	365	46.6	5.78	1995	1340	121.1	9.14
1948	391	52.4	4.64	1996	1170	136.6	10.20
1949	412	47.8	4.07	1997	1370	125.6	9.87
1950	346	50.0	5.13	1998	1525	128.9	8.87
1951	457	44.4	4.98	1999	1645	131.1	6.00
1952	466	45.6	5.82	2000	1440	—	—

Information obtained from Arkansas Agricultural Statistics.

Table Intro-2a. Distribution of Rice Varieties in Arkansas from 1994-1999

Variety	1999	1998	1997	1996	1995	1994
			% of total acres			
Adair	—	—	—	0.2	0.4	—
AB647	0.2	—	—	—	—	—
Alan	0.6	0.9	2.4	3.4	9.2	17.4
Bengal	17.1	13.6	18.2	22.0	13.6	7.1
Cocodrie	0.8	—	—	—	—	—
Cypress	21.9	25.6	28.8	27.0	34.9	0.1
Drew	35.1	37.0	3.0	0.1	—	—
Jackson	0.1	0.2	0.2	0.6	1.1	1.6
Jefferson	5.8	1.8	0.1	—	—	—
Kaybonnet	4.9	8.4	33.8	33.4	4.3	0.1
Katy	—	—	0.1	0.4	8.6	11.9
LaGrue	9.9	10.2	9.8	7.0	11.6	1.6
Lacassine	—	—	0.2	0.8	2.9	4.0
Lemont	2.8	1.7	1.7	2.3	4.2	10.1
Madison	0.1	—	—	—	—	—
Mars	0.2	—	—	0.1	1.1	5.5
Millie	—	0.2	0.7	0.1	2.8	6.0
Newbonnet	—	0.2	0.6	1.3	4.1	10.4
Orion	—	—	—	—	0.1	1.6
Priscilla	0.3	—	—	—	—	—
Wells	0.2	—	—	—	—	—

Variety distribution data obtained from DD50 computer program.

Table Intro-2b. Distribution of Rice Varieties in Arkansas from 1978-1993

Variety	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978
	% of total acres															
Alan	28.5	19.4	3.8	0.2	—	—	—	—	—	—	—	—	—	—	—	—
Bond	—	—	—	—	—	—	0.2	0.8	5.6	3.6	0.3	—	—	—	—	—
Della	0.1	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gulfmont	0.5	0.6	1.3	2.3	2.9	1.8	0.2	—	—	—	—	—	—	—	—	—
Jasmine-85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Katy	18.8	20.8	12.5	5.5	0.3	—	—	—	—	—	—	—	—	—	—	—
L202	0.6	1.3	2.6	2.2	0.9	0.9	0.9	—	—	—	—	—	—	—	—	—
Labelle	—	—	0.3	0.7	1.1	0.7	0.9	0.7	4.1	18.8	25.2	20.4	17.2	17.3	14.6	11.4
Lebonnet	0.1	—	0.1	0.2	0.6	1.1	1.3	1.2	5.5	20.1	20.6	14.9	15.5	25.1	30.0	30.0
Lemont	12.1	15.8	15.3	20.5	23.4	27.7	16.7	11.4	12.2	1.4	—	—	—	—	—	—
Mars	6.0	7.1	11.8	10.8	8.7	9.4	10.8	6.9	4.3	7.4	11.1	11.4	14.5	10.8	2.4	0.1
Maybelle	1.5	1.1	4.0	0.6	—	—	—	—	—	—	—	—	—	—	—	—
Millie	7.9	8.3	2.2	0.1	—	—	—	—	—	—	—	—	—	—	—	—
Newbonnet	8.8	19.3	38.3	39.5	44.5	32.6	54.5	68.9	61.2	5.1	0.3	—	—	—	—	—
Newrex	—	—	—	—	—	—	0.4	0.3	0.3	0.6	0.3	—	—	—	—	—
Nortai	—	—	—	—	—	—	0.3	0.1	0.1	0.1	0.3	0.9	0.9	1.6	1.7	1.7
Orion	5.9	1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rexmont	—	0.2	0.2	0.4	0.4	0.4	0.1	—	—	—	—	—	—	—	—	—
Skybonnet	—	—	0.1	0.4	0.5	0.8	0.3	—	—	—	—	—	—	—	—	—
Starbonnet	—	—	0.1	—	—	—	0.2	0.5	2.9	41.8	41.7	52.4	50.4	40.2	43.9	38.1
Tebonnet	0.8	2.2	7.2	16.4	16.3	24.1	13.2	9.2	3.2	—	—	—	—	—	—	—

Variety distribution data obtained from DD50 computer program, 1981-1992, and from Rice Millers Association Report prior to 1981.

Table Intro-2c. Distribution of Rice Varieties in Arkansas from 1964-1977

Variety	1977	1976	1975	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
							% of total acres						
Arkrose	—	—	—	—	—	—	—	—	—	—	—	0.8	1.1
Belle Patna	—	—	—	1.4	0.5	0.6	1.0	1.9	2.8	5.0	5.5	1.8	1.1
Bluebelle	1.6	5.2	7.4	9.6	3.9	4.0	7.3	9.3	23.1	5.6	0.2	—	—
Bluebonnet	—	—	0.7	0.1	1.7	2.0	5.6	12.0	27.4	50.6	50.9	54.2	53.7
Bonnet 73	1.2	2.6	5.2	—	—	—	—	—	—	—	—	—	—
Brazos	2.8	1.8	1.7	—	—	—	—	—	—	—	—	—	—
Century Patna	—	—	—	—	—	—	—	—	0.1	0.5	0.9	0.9	0.9
Dawn	0.1	1.2	3.4	0.8	0.6	0.6	0.9	2.0	2.3	0.8	0.1	—	—
Labelle	7.3	7.6	7.6	0.3	—	—	—	—	—	—	—	—	—
Lebonnet	33.9	22.9	1.4	—	—	—	—	—	—	—	—	—	—
Nato	10.3	13.2	15.2	20.4	19.9	18.4	16.1	17.6	22.2	31.1	37.0	39.3	37.6
Nortai	2.2	2.0	2.4	0.9	—	—	—	—	—	—	—	—	—
Northrose	—	—	—	—	—	—	—	—	—	—	—	0.3	0.9
Nova	2.1	3.3	2.9	5.5	5.6	5.0	6.0	6.8	4.2	2.4	1.9	1.2	3.6
Pearl	—	—	—	0.1	0.7	0.8	1.0	1.4	0.8	0.8	0.8	1.3	0.7
Roses	—	—	—	—	0.4	0.4	0.6	0.5	0.7	0.7	1.0	—	—
Saturn	0.1	0.2	0.3	1.2	0.3	0.6	1.3	1.5	0.8	0.3	0.2	—	—
Starbonnet	38.3	39.5	52.1	58.6	66.4	67.6	60.4	46.9	15.4	0.7	—	—	—
Vegold	—	—	—	—	—	—	—	0.3	0.2	1.2	1.5	0.2	0.3
Vista	0.2	0.7	0.4	0.5	—	—	—	—	—	—	—	—	—
Zenith	—	—	—	—	—	—	—	—	—	—	—	—	0.1

Data not available for 1974.