

Arkansas Turfgrass Acreage

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Photo by Aaron Patton

Lawns comprise the largest facet of turf acreage in Arkansas.

Summary. Previous estimates of cultivated turf (518,427 acres) and home lawn area (308,271 acres) in Arkansas are published. The following article summarizes some information by others and estimates the acreage of turfgrass in Arkansas by use and species. The average lawn in Arkansas is 12,591 ft², but lawns represent <1% of Arkansas' total land mass. Seventy-two percent of Arkansas lawns are bermudagrass for a total of 221,351 acres of bermudagrass lawns. Zoysiagrass is the next most commonly used turf species for lawns, but only 12.5% or 38,426 acres are used on lawns in Arkansas. Tall fescue is the primary cool-season grass used in the state

with 9.6% of the lawns or 29,649 acres across Arkansas. There are approximately 18,032 acres of turf on golf courses in Arkansas with the majority of that area planted in bermudagrass comprising 87% of the areas on Arkansas golf courses. Zoysiagrass comprises 8% of the turf on Arkansas golf courses. Currently, 8,276 acres of sod are produced in Arkansas on its 46 sod farms. At least 200,000 acres of turfgrass are planted on Arkansas roadsides. These values are approximate estimates (not absolute values) of turf areas in Arkansas and should be treated as such and used to guide future turfgrass research and aid in extension program planning.

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Numerous research studies and surveys have attempted to define the turfgrass acreage in the United States (Vinlove and Torla, 1995; Milesi et al., 2005; Lyman et al., 2007), but less is known about the turfgrass acreage within each state including Arkansas. Milesi et al. (2005) estimated that 518,427 acres of turf was cultivated in Arkansas. Vinlove and Torla (1995) estimated that 308,271 acres or 59.5% of cultivated turf was home lawn acreage. The following article summarizes some information by others and attempts to quantify and estimate the acreage of turfgrass in Arkansas by use and species.

Materials and Methods

Using previous estimates of turfgrass acreage in Arkansas (Vinlove and Torla, 1995; Milesi et al., 2005) and summary data on home lawn turfgrass species from soil samples submitted to the University of Arkansas, Soil Testing and Research Laboratory, Marianna, Ark. (Slaton, pers. comm., 2007), estimates were calculated on lawn acreage in Arkansas. Golf course acreage was estimated by the number of golf facilities in Arkansas (NGF, 2003) and average golf course acreage (GCSAA, 2007). A species breakdown is provided based upon an informal survey (M. Richardson, pers. comm.) in Arkansas and site visits to golf courses in Arkansas.

Results and Discussion

Lawns. The average lawn in Arkansas is 12,591 ft² (Vinlove and Torla, 1995), but lawns only represent 0.925% of Arkansas' total land mass. Based on calculations and previous estimates, 71.8% of Arkansas lawns are bermudagrass (*Cynodon* spp.) for a total of 221,351 acres of bermudagrass lawns (Table 1). Zoysiagrass (*Zoysia* spp.) is the next most commonly used turf species for lawns, with 12.5% or 38,426 acres of zoysiagrass used on lawns in Arkansas. Tall fescue (*Festuca arundinacea*) is the primary cool-season grass used in the state with 9.6% of the lawns or 29,649 acres across Arkansas. St. Augustinegrass (*Stenotaphrum secundatum*) is the fourth most commonly used turfgrass species comprising 3.7% of the lawns and a total of 11,295 acres across the

state. Kentucky bluegrass (*Poa pratensis*), perennial ryegrass (*Lolium perenne*), and centipedegrass (*Eremochloa ophiuroides*) are also used, but each is present in <2.2% of the lawns and represent a combined total of 7,550 acres. New cultivars of Kentucky bluegrass that are more heat and drought resistant could increase its use in northern counties in Arkansas in the future. When summarized by turf species type (cool-season or warm-season), 90% of Arkansas' lawns are warm-season turf species (bermudagrass, zoysiagrass, St. Augustinegrass, and centipedegrass), while only 10% are cool-season turf species (Kentucky bluegrass, tall fescue, perennial ryegrass) (Table 2). Other species grown in Arkansas lawns, but not listed on the soil test sample submission form, include carpetgrass (*Axonopus fissifolius*) in southern Arkansas and fine fescues such as hard fescue (*Festuca brevipila*) or creeping red fescue (*Festuca rubra* ssp. *rubra*) in shady areas of northern Arkansas lawns. Since these estimates are based upon soil tests, acreage of some species such as centipedegrass could be underestimated as the soil testing is more likely to occur on turf species with higher maintenance requirements.

Golf Courses. There are approximately 18,032 acres of turf on golf courses in Arkansas (Table 3). The majority of that area is comprised of golf course roughs and fairways (Table 3) with bermudagrass comprising 15,595 acres or (86.5%) of the areas on Arkansas golf courses. Zoysiagrass is the next most commonly used turfgrass species comprising 7.5% or a total of 1,350 acres on Arkansas golf courses. Among Arkansas golf course putting greens, about 70% (386 acres) are creeping bentgrass and 30% (166 acres) are bermudagrass. Most creeping bentgrass putting greens contain some level of annual bluegrass (*Poa annua*) contamination, but it is difficult to estimate an average contamination based upon seasonal population shifts between these two species. Most other species (carpetgrass, Kentucky bluegrass, perennial ryegrass, tall fescue) are used on less than 1.2% of the areas on Arkansas golf courses and their use varies by location.

Sod Farms. There are approximately 46 sod farms in Arkansas although that number fluctuates

based on the economic climate (Census of Agriculture, 2007). Currently, 8,276 acres of sod are grown in Arkansas (Census of Agriculture, 2007) with the species grown including bermudagrass, zoysiagrass, St. Augustinegrass, centipedegrass, tall fescue, and Kentucky bluegrass (Patton et al., 2008). The species breakdown is similar to that grown on lawns (Table 1), with the exception of perennial ryegrass which is not typically grown as sod.

Other. Other areas of turf in Arkansas include roadsides, athletic fields, and parks, but these areas are difficult to estimate because there is little published research or surveys on their acreage. Most roadsides in Arkansas are planted as bermudagrass, although they are a mixture of grass and broadleaf species. According to the Arkansas State Highway and Transportation Department, at least 200,000 acres of turf-covered roadsides are mown each year in Arkansas (C. Flowers, pers. comm., 2010). Most athletic fields in Arkansas are bermudagrass although at least 6 acres of zoysiagrass athletic fields are in central Arkansas. Park areas likely have a similar species composition to lawns, but their acreage is unknown.

These values are approximate estimates (not absolute values) of turf areas in Arkansas and should be treated as such and used to guide future turfgrass research and aid in extension program planning.

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Table 1. Breakdown of acreage of various turfgrass species in Arkansas lawns based upon lawn estimates by Vinlove and Torla (1995) and data from Arkansas soil tests (Slaton, 2007).

Lawn species	Number of soil samples submitted in 2006 for each lawn species	Percentage of all lawns ---%---	Estimated acreage ^z ---acres---	Percentage of the total land mass in Arkansas ^y ---%---
Bermudagrass	7,212	71.8	221,351	0.664
Centipedegrass	210	2.1	6,445	0.019
Kentucky bluegrass	14	0.1	430	0.001
Perennial ryegrass	22	0.2	675	0.002
St. Augustinegrass	368	3.7	11,295	0.033
Tall fescue	966	9.6	29,649	0.089
Zoysiagrass	1,252	12.5	38,426	0.115
Total	10,044	100.0	308,271	0.925

^z Calculated based upon Vinlove and Torla's (1995) estimate of 308,271 acres of home lawns in Arkansas.

^y Calculated based upon 33,323,643 acres of land mass in Arkansas (U.S. Census 2000).

Table 2. Breakdown of acreage of various turfgrass types (cool-season or warm-season) in Arkansas lawns based upon lawn estimates by Vinlove and Torla (1995) and data from Arkansas soil tests (Slaton, 2007).

Lawn species	Number of soil samples submitted in 2006 for each lawn species	Percentage of all lawns ---%---	Estimated acreage ^z ---acres---	Percentage of the total land mass in Arkansas ^y ---%---
Warm-season	9,042	90.0	277,518	0.833
Cool-season	1,002	10.0	30,753	0.092
Total	10,044	100.0	308,271	0.925

^z Calculated based upon Vinlove and Torla's (1995) estimate of 308,271 acres of home lawns in Arkansas.

^y Calculated based upon 33,323,643 acres of land mass in Arkansas (U.S. Census 2000).

Table 3. Breakdown of acreage of various golf course components based upon average estimates (GCSAA, 2007) and the number of golf courses in Arkansas (NGF, 2003).

Golf course components	Average size on each golf course ^z -----acres-----	Total acreage in Arkansas ^y
Rough	51	9,384
Fairways	30	5,520
Driving ranges/practice areas	7	1,288
Putting greens	3	552
Tee boxes	3	552
Clubhouse grounds	3	552
Turf nursery	1	184
Totals	98	18,032

^z Average acreage on an 18-hole golf course.

^y Calculated based upon 184 golf courses in Arkansas (NGF, 2003).

Table 4. Breakdown of acreage of various golf course components by turf species based upon site visits to golf courses and an informal survey by M. Richardson.

Golf course components	Bermudagrass	Zoysiagrass	Carpetgrass	Creeping bentgrass ^z	Kentucky bluegrass	Perennial ryegrass	Tall fescue	Total acreage in Arkansas ^y
								-----acres-----
Rough	8,774	94	94	0	188	47	188	9,384
Fairways	4,416	1,021	55	0	0	28	0	5,520
Driving ranges/Practice areas	1,172	64	13	0	13	13	13	1,288
Putting greens	166	0	0	386	0	0	0	552
Tee boxes	442	102	6	0	0	3	0	552
Clubhouse grounds	497	50	6	0	0	0	0	552
Turf nursery	129	18	0	37	0	0	0	184
Totals	15,595	1,350	173	423	201	90	201	18,032
Percentage of total (%)	86.5	7.5	1.0	2.3	1.1	0.5	1.1	100

^z A majority of creeping bentgrass putting greens in northern Arkansas are a mixture of creeping bentgrass and annual bluegrass.

^y See Table 3.