



# Alternative Ag Ventures - Turfgrass Sod



Photo Source: Turfgrass as seen on <http://pubs.caes.uga.edu/caespubs/pubcd/B1233-Figures/B1233-cover.jpg>

## Introduction

Overall, the turfgrass and lawn care industry continues to grow in the United States due to the rising demand for property development, affluence, and environmental benefits in the urban and suburban landscapes.

The process of sod production involves growing high quality turf grasses, and harvesting the grass in strips with its roots, and a very thin layer of top soil to hold the grass together. Types of grasses typically seen in Ohio sod production include Rhizomatous Fescue, Tall Fescue, Hybrid Bluegrass, and Bluegrass blends.

It is important to understand the characteristics of each grass in order to determine its intended usage. For example you would not want to grow and sell grasses that are typically used on golf course greens to the average homeowner. Grasses used for golf courses usually require more maintenance and are more finely textured with higher density versus the typical Ohio lawn grass.

## Market Information

The market for sod production in Ohio is highly centered on economic development. Construction of subdivisions, and public green spaces,

golf courses, parks, athletic fields, garden centers, landscapers, homeowners, and cemeteries are some of the market opportunities that a producer can take advantage of for sod outlets. Because the market is somewhat saturated it is important to know your competition in the area. Sod is a highly perishable product which must be harvested, transported, and installed in the same day, so local production is favored in the industry.

Within the turfgrass industry sod production creates close to \$1.8 billion in output, \$1.3 billion in value-added, and 17,028 jobs in the US economy. Ohio ranks fourth in the nation in the turfgrass industry for employment impacts at 33,154. According to the 2002 US Census of Agriculture, the total number of sod farms in the US is 2,124 with 386,504 acres of production. There are 62 sod farms in Ohio totaling 9,434 acres, or 2.4 percent of the nation's sod acreage.

## Production Considerations

The basics of growing grass for all varieties of sod are very similar. They include:

- Soil, Selection, and Planting
- Maintenance - Mowing and Pest Management

Turfgrass sod is a mature grass cover which is produced in an intensively managed agricultural operation. It is removed intact with a minimal amount of soil, transplanted in another area and instantly forms a grassy turf cover.

- (Taken from Ontario Ministry of Agriculture Food and Rural Affairs – Sod Production, by Pam Charbonneau)

### • Harvest and Labor Requirements

The site you select for growing sod should be a large level area with a deep well or moderately well drained loam soil. The top soil should be rather thick. These specifications can be determined with a soil test through your local Extension office. The soil should also be free of rocks. After all, no one wants rocks in their potential new lawn, and they can cause damage to harvest equipment. It is also good to know the soil history and any pesticide or herbicide carry-over. For example if the field you are planning for sod production was formerly a soybean field that was sprayed for weeds in the grass family and there is herbicide carryover, it is possible that the grass seed you plant for sod, will be affected and not establish properly. Once the field is cleared, proper fertilizer should be applied. Common practice is then to plow, roll, and seed the soil.

The selection of turfgrass species varies depending on its intended use and timing to market. The more common and adaptable varieties grown in Ohio include Kentucky Bluegrass, Perennial Ryegrass, Tall and Fine Fescue, and Bentgrass.

Kentucky bluegrass is the most common lawn turfgrass in Ohio. It is fine in texture and produces rhizomes which are underground stems

that result in new grass plants. This characteristic allows bluegrass to recuperate from injury, fill in the thinner areas of the lawn, and withstand temperature and moisture extremes. The soil should be moist, but well drained to allow for good establishment. It prefers neutral soil pH and partly to mostly sunny areas. It develops best when seeded in the last summer or early fall when days are still warm and nights get cooler. Bluegrass cultivars are mostly resistant to turf-grass diseases, so herbicides are typically not necessary. Fertilizer should be applied routinely to assure a lush appearance.

Perennial ryegrass is also a fine-textured species and has rapid seed germination and establishment qualities. Ryegrass has more of a bunch type growth habit versus the rhizome growth of bluegrass. It is a little less cold tolerant and disease resistant than bluegrass, but is still acceptable for most of Ohio. Maintenance, fertility, and soil pH are similar to that of Kentucky bluegrass. Because Perennial ryegrass has better drought tolerance than K. bluegrass, but may still need irrigation in times of water shortage. Perennial ryegrass is usually seeded with Kentucky bluegrass and seldom seeded alone.

Tall fescue is a low maintenance grass with a courser texture that germinates and establishes quickly and is often used in areas where this is favorable including playgrounds, parks, and public athletic fields. Tall fescue tolerates low soil fertility, requires minimal maintenance, and has good insect, disease, and drought tolerance. The species has excellent wear, is also deep-rooted. An

important point to note is that young tall fescue seedlings are not cold-tolerant and can result in winterkill.

Fine fescue is a more fine-leaved grass that grows well in low light, moisture, and fertility and soils with unfavorable pH. The species requires well-drained slightly dry soils and minimal management. Fine fescues are seldom seeded alone as they are more commonly found in mixtures with other cool season grasses in Ohio.

Bentgrass is an extremely fine-textured, high-quality, uniform and dense turf. Maintenance is very intense to establish a good stand, but also costly, which is why most homeowners are incapable of growing it for lawns. Bentgrass is most commonly found on golf course greens and tees and does not blend well with other grasses.

General maintenance and pest control for sod includes frequent (weekly or bi-weekly) mowing, weed, and grub control. Mowing greatly helps to increase turf density, controls weeds and removes excess growth. White grubs are usually not problematic if the sod is harvested within two years of seeding.

Harvesting usually occurs 12-18 months after seeding. Some grasses can be ready for harvest after six months if netting is used. In order to take full advantage of the market, you should time your seeding for harvest when the sod product is in the highest demand. Landscapers are predominantly the end users of sod and typically require it in the early spring and late summer/early fall

for new landscapes. Sod is harvested with a dedicated sod harvester and tractor that usually requires at least three people to operate. After the sod is harvested with the machine, it is then stacked as large slabs or rolled on pallets and then loaded onto a flatbed truck for transportation. Because of the perishable nature of sod, it is important that the product be harvested, transported and installed in the same day.



## Economics

Sod production can be an expensive enterprise because harvest and installation costs far outweigh the cost of growing the sod to maturity. If a second entity is involved who will transport and install the sod, then the costs can get a little more manageable.

Equipment needed for sod production includes a designated turf tractor (50 HP), seeder, roller, finish drag, mower, harvester, fork lift, pallets, and a flatbed truck. Gently used equipment was investigated and found at reasonable prices for the following:

- 5520 John Deere - Turf Special 2004, 4x4, Cab, A/C, Heat with 1850 hrs.
  - o \$28,000
- 3 pt. 10' Brillion Turf Seeder
  - o \$3,500
- 42" x 12' heavy Duty Roller
  - o \$4,500
- 3 pt. 14' Finish Drag
  - o \$1,200
- 22' Brouwer Mower
  - o \$4,000
- Magnum 30" Big Roll Harvester
  - o \$35,000
- 1995 Model 1560 Brouwer Harvester - 16 x 24" slabs. Mounted on 3910 Ford tractors.
  - o \$10,000
- Used forklift
  - o \$12,000
- 1996 International Single Axle Truck with 10' Aluminum Bed
  - o \$13,900

The University of Kentucky New Crop Opportunities Center estimated the cost of production in 2006 at \$0.63 per square yard or approximately \$2,835 per acre. It was sited that a similar cost for harvest and loading can be expected so

in order to break even, the producer must sell the sod for at least \$1.26 per square yard.

A sod farm in SW Ohio listed prices on their website from \$1.53-3.60 per square yard depending on the quantity and turf type.

## References and More Information

Turfgrass Producers International  
[http://www.turfgrassod.org/index\\_01.html](http://www.turfgrassod.org/index_01.html)

USDA National Ag Statistics Service 2002 Census of Agriculture  
[www.nass.usda.gov](http://www.nass.usda.gov)

University of Kentucky Extension New Crop Opportunities Center  
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<http://edis.ifas.ufl.edu/pdf/FE/FE63200.pdf>

Turfgrass Species Selection, William E. Pound and John R. Street  
<http://ohioline.osu.edu/hyg-fact/4000/4011.html>

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<http://www.omafra.gov.on.ca/english/crops/facts/>

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Further References:

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<http://ohioturfgrass.org/index.php>

Agricultural Marketing Resource Center  
[www.agmrc.org](http://www.agmrc.org)

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[www.ohioline.osu.edu](http://www.ohioline.osu.edu)

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Turfgrass-Sod Production in Alabama: Economics and Marketing  
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