

WT&T  
PROFILE

# THE BUSINESS OF SOD PRODUCTION



# SOD PRODUCERS PLANT FEWER ACRES IN 1978

Approximately 1,200 companies grow \$225 million worth of sod each year according to a survey of 144 sod producers by Weeds Trees & Turf.

In the process, sod producers spend \$6.6 million for seed, \$15 million for fertilizer, and \$3.9 million on chemicals each year.

More than 700 U.S. sod producers were mailed questionnaires for this survey. Twenty percent returned them.

The universe of 1,200 sod companies was derived from input by the American Sod Producers Association and suppliers. Those considered actual sod farmers either have sod production as a primary source of revenue or farm a significant amount of sod acreage. Significant in this case would be more than 20 acres. Many nurseries grow a few acres of sod as a sideline to wholesale or retail business. For this survey, such nurseries were not included.

A value of \$1,500 per acre of sod produced was used to calculate gross revenue. This figure is a moderate estimate based upon data from Maryland (see article page 33). Value per acre has been reported as high as \$2,200 and as low as \$1,300.

The average sod farm is 290 acres from which 112 acres of sod was sold in 1977 at a value of \$168,000. Using median figures, the typical sod farm is 150 acres from which 70 acres was harvested in 1977 at a value of \$105,000. A few sod farms in the 800 to 1,500 acre range inflated the average. The average staff is six full-time and seven part-time employees.

According to these figures, sod growers harvest between a third and a half of their acreage annually. They expect to sell between 10 and 15 percent more acreage in 1978 than in 1977. However, respondents planted 15 percent less acreage in 1978. Perhaps this is in response to a predicted downturn in building starts.

Landscape contractors are the largest purchasers of sod, followed by homeowners and builders. Nearly two-thirds of sod growers sell to retail nurseries and 56 percent sell to wholesale nurseries. Athletic fields (58 percent) and golf courses (51 percent) are major buyers of sod.

Sod growers indicated that Tifway is the most common bermudagrass for sod, Penncross is the most common bentgrass, Pennlawn is the most common fescue, Manhattan is the most common ryegrass, Floratam is the most common St. Augustine grass, and Meyer Z-52 is the most common Zoysia.

Bluegrass, of course, is the dominant type of sod produced. Baron ranked number one with 47 percent of the growers. Merion still places strongly in second (27 percent), Fylk-

ing third (26 percent), Glade fourth (25 percent), and Adelphi fifth (23 percent). The Maryland article in this issue points out that most sod today contains mixes and blends of varieties. The amount of single variety sod grown has dropped dramatically in the last ten years.

The average sod grower spends approximately \$30,000 annually for seed, fertilizer and chemicals. Using the average acreage of 290, the average material cost per acre is \$103. The largest part of this cost is fertil-

## Annual expenditures projected for 1,200 sod producers.

	%	Range	Median	Mean	Projection
Fertilizer	87	\$ 75-\$140,000	\$7,000	\$14,465	\$15,000,000
Fungicide	25	\$100-\$ 27,000	\$ 500	\$ 2,198	\$ 660,000
Herbicide	74	\$ 20-\$ 35,000	\$2,000	\$ 3,604	\$ 3,200,000
Seed	58	\$250-\$ 85,000	\$6,000	\$ 9,505	\$ 6,600,000

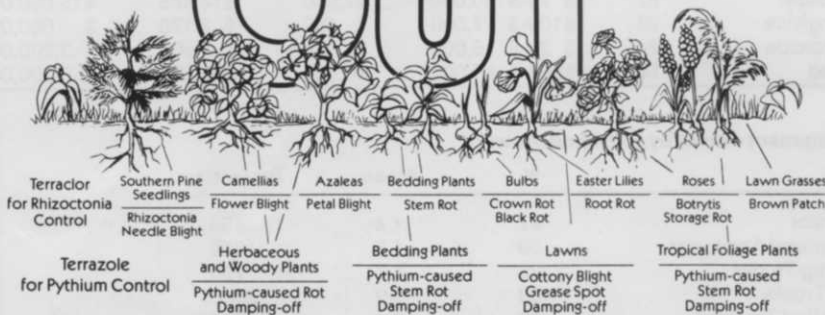
## Equipment owned by 1,200 sod growers.

	%	Mean	Projection
Aerator	27	1.4	450
Chemical Applicator	69	1.5	1200
Dump Trucks	36	1.7	730
Lift Trucks	58	3.3	2300
Flat Bed Trucks	66	2.4	1900
Pickup Trucks	81	2.9	2800
Trailer Trucks	44	2.7	1400
Flail Mowers	49	1.4	820
Rotary Mowers	58%	1.6	1100
Reel Mowers	42	4.6	2300
Gang Mowers	64	4.6	3500
Fertilizer Applicators	71	1.8	1500
Small Utility Vehicles	21	2.0	500
Sod Cutters	71	2.3	2000
Self Contained Sod Harvesters	47	1.8	1000
Tractor Drawn Sod Harvesters	17	1.7	350
1-25 h.p. Tractors	33	1.7	670
26-50 h.p. Tractors	79	3.5	3300
51-100 h.p. Tractors	57	2.4	1600
100+ h.p. Tractors	22	1.9	500

## Projected totals of acreage of sod farms.

	Projected to 1,200 farms
Total Acreage	349,000
Acres Planted in 1978	128,000
Acres Harvested in 1978	150,000
Acres Sold in 1977	135,000

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## Survey

izer (\$50), followed by seed (\$33) and then herbicides (\$12). An average of \$7.50 per acre is spent for fungicides.

The 1,200 sod producers own 3,350 harvesters and cutters, 6,070 tractors, 7,720 mowers, 2,300 lift vehicles, 2,800 pickup trucks, 1,900 flat-bed trucks, 1,500 fertilizer spreaders, 1,200 spray rigs, 1,400 trailer trucks, and 450 aerators. A conservative value of equipment inventory of the average sod producer is \$250,000. **WTT**

### Types of seed used for sod and number of respondents indicating use.

#### BERMUDA 19%

Tifway 419 or 328	22
Santa Ana	3
PD 102	2
Tiff Green	4
Midiron	2
Coastal	1
Common	2

#### BENT 3%

S71	1
Penncross	3
Seaside	1
Toronto C-15	1

#### BLUEGRASSES 67%

Baron	47
Merion	27
Glade	25
Fylking	26
Adelphi	23
Victa	15
Park	10
Windsor	6
Newport	8
Touchdown	7
Majestic	12
Pennstar	5
Others	33
Blends	34

#### FESCUE 15%

Pennlawn	5
Jamestown	2
K 31	4
Creeping Red	3

#### RYEGRASS 6%

Manhattan	4
Citation	1
Pennfine	2

#### ST. AUGUSTINE 10%

Floratom	8
Bitter Blue	4
Living Carpet	1
Blue-Green	1
Common Texas	1

#### ZOYSIA 12%

Emerald	11
Meyer Z-52	15
Metrella	2

#### ARGENTINE BAHIA 2%

#### CENTIPEDE 12%



# PURSLEY TURF GRASS: WARM CLIMATE SOD SPECIALISTS

Florida in the summertime is hot and humid. Away from Disney World, Floridians relax in air conditioned cars and buildings. Except for armadillos, cattle egrets, an occasional sandhill crane . . . and sod farmers!

Just outside of Palmetto, not too far from the Gulf coast, 1,200 acres of sod keep 33 people working long hours. Planting, mowing, fertilization, irrigation, harvesting, and hauling must be done during the heat of the day.

Pursley Turf Grass is a unique operation in Florida. Incorporated in 1956 as Pursley Zoysiagrass Company, Walter Pursley, president, and Stan Cruse, vice-president, grew *zoysia matrella* sod. Meyer Z-52 came along and Pursley shipped it out all over the country. Emerald



**Mike Swanson** (left), vice-president of growing operations, and **Stan Cruse**, president of Pursley Turf Grass.

was the next successful zoysiagrass. Sod farming became a large industry and Pursley grew with it. With successful endeavors into golf course construction, land development, and retail nurseries, Pursley Turf Grass also produces some of the best, certified sod in Florida.

Today Pursley Turf Grass grows Emerald, Argentine Bahia, four varieties of bermudagrass, two varieties of St. Augustine grass and centipedegrass. All except the centipedegrass are Florida state certified. This means, according to Mike Swanson, vice-president of growing operations, that they are grown under the auspices of the Div. of Plant Industry, Florida Dept. of Agriculture. Original planting material must come from an approved source, such as the University of Florida in Gainesville. The ground site must be approved and then fumigated. Each sprig is hand-planted in a foundation block. The rest of the sod fields are then planted by expanding out of that block.

The fields are constantly inspected by the Division of Plant Industry. Their inspections play an important part in the maintenance of Pursley Turf Grass sod. The Pursley acreage is divided into farms, numbered in the order of acquisition. Each farm is then divided into blocks, delineated by drainage/irrigation ditches. The blocks range in size from two and one-half acres up to 38 acres. Swanson treats each block as an individual entity, keeping a complete history of progress and treatment of each.

A soil sample is prepared from each block. According to Swanson, they generally indicate a need for lime. In addition to standard N-P-K tests, Swanson also keeps track of copper, calcium and magnesium. Some of the land has been used in the past for tomato production," says Swanson, "and we find real high copper readings." I've also run into problems such as where we ran a soil test on a block and it looked good. There was one area within the block, though, where centipedegrass just wouldn't grow. We went in and sampled just that one area and found a phosphorus level of 4. We had to redo about a half acre within

the block, made a correction for phosphorus deficiency and the grass filled in beautifully."

Weeds are a big headache in growing southern turf species. "Probably the biggest single problem here," indicates Swanson, "is nutsedge. We have both varieties, yellow and purple." Floratum St. Augustinegrass lends itself well to control of yellow nutsedge. The variety was developed through the University of Florida and Texas A&M (hence the name Flora-tam) because of its immunity to St. Augustinegrass decline virus (SADV).

In the process of testing for SADV, they also found a degree of resistance to chinchbugs. It is a little coarser than the Floratine variety and lacks just a slight degree of its blue green color, but has a much higher tolerance to the herbicide Atrazine. "We have found that we get better yellow nutsedge control by using an increased rate of Atrazine. The purple nutsedge is still a real headache for us, though," adds Swanson. Atrazine is also used extensively as a preemergent crabgrass treatment in St. Augustinegrass and in centipedegrass.

Swanson feels that he is getting good post emergence control of crabgrass in St. Augustinegrass with Asulox, a new product made by Rhodia. Post emergence treatment on bermudagrass is either MSMA or DSMA in conjunction with 2,4-D.

Even though the blocks are fumigated before planting, there are still weed problems. The sod farms are surrounded by farmland and weed seeds are carried in by the irrigation water, by birds and by the wind. Swanson has a full time roguing crew to see that the fields are kept perfectly clean. The crew members also carry flags and if they run into a particular type of weed that they don't want to take a chance on digging out, they flag it. Someone will then come through with a small sprayer and spot treat the area.

"Bermudagrass is one example," says Swanson. "If you get it in St. Augustinegrass, it is extremely difficult to mechanically remove with a roguing tool. If the person leaves just one little node, then he's wasted his

## Pursley Turf Grass

time. Torpedograss is another weed that is tough to get. We find roots 8-12 feet down when we dig irrigation ditches."

Swanson has had good luck with Roundup for problems like those. "Roundup suits a very specific purpose for us, as an in-field control of contamination. Of course, we might not get any grass out of the area where we've sprayed, but we don't inadvertently send weedy sod out." Often, because Roundup has hardly any residual effect, the grass will begin to fill back in.

The chemical itself is still expensive, about \$55-60 per gallon. At higher rates, it takes about five quarts to treat an acre. However, the price has decreased substantially from the original \$85 per gallon when Roundup was first introduced.

Broadleaf weeds are not much of a problem at Pursley Turf Grass. "We're constantly mowing," says Swanson. "Unless we get caught by the rain and can't get into the fields. The Atrazine is effective on broad-leaf weeds.

A full-time mechanic and assistant mechanic take care of almost a million dollars worth of equipment at Pursley. The inventory includes three Princeton harvesters originally \$29,000 apiece. A fourth, tractor-drawn harvester has been added. Thirteen John Deere tractors are maintained. A 60-hp model currently sells for about \$13,000.

"Because equipment costs are going sky high," laments Swanson, "we do all the preventative maintenance we can. We have even taken two or three of our older tractors and com-

pletely refurbished them in our shop, right down to a paint job and new seat. We're talking \$1500 versus \$12-13000 for a new one."

Much of the Pursley Turf Grass acreage is reclaimed bayheads. Often, in order to keep the land dry, a small lake has been dug to provide fill. The topsoil was pushed off and then spread back over the fill.

These ponds, and other natural ones, provide ideal irrigation sources. Drop a portable pump in a pond and turn the sprinklers on. A stationary system is used until the runners fill in enough to support traveling sprinklers. If necessary, water can even be pumped from pond to pond.

The ditches around each block serve a dual purpose. During heavy rains, they help carry water away. During the dry season, they become irrigation ditches.

Disease could be a problem, but doesn't go long unchecked. Gray leaf spot on St. Augustinegrass and dollar spot on bermudagrass are the most common, according to Swanson. "We also treat every block of grass we send out," adds Swanson, "whether it needs it or not. The critical factor in sod installation is that consumers get plenty of water on it. Even at this time of year, when we're getting plenty of rain, its extremely deceptive. You might get an inch of rain, then the sun comes out and it evaporates. Very little actually gets to the rootzone. Asking the consumer to keep it moist creates conditions for fungus. We want to see it get off to a good start."

The sod is harvested in 16-inch by 24-inch pieces, stacked 400 square feet to a pallet. Each pallet weighs approximately 3,500 pounds, depending upon moisture content, and weight restrictions generally limit a truck load to 16 pallets. All of the sod is cut to order. "That avoids having any grass around that's not 100 percent fresh," says Swanson. Pursley Turf Grass hasn't had to worry about having any old grass around for the last two years.

Because of the extra care and expense Pursley Turf Grass puts into their product, it naturally sells for a higher price. There is a good market, however, for quality sod and they've proved it. "One of the pleasant discoveries in this business," sums up Swanson, "is that people are willing to pay for quality." Ron Morris



**One of Pursley's** three Princeton harvesters in action (below). Roguing crews work near ditches used for drainage, irrigation and to separate fields.



# PACIFIC SOD FARMS: TRYING TWICE AS HARD

Effective management, careful attention to cultural practices, regulated growth, and a professional understanding of the needs of the ornamental horticulture industries in California are the reasons for the ten-year success story of Pacific Sod Farms, Camarillo.

Starting with 38 acres of leased land on the Davis Ranch in Ventura County in 1968, the company has become one of Southern California's leading suppliers of sod in 1978, with 394 acres of bluegrass, hybrid bermudagrass, and other varieties under cultivation.

Pacific Sod's 394 acres give it a No. 3 ranking in the California sod industry, just behind Cal-Turf and Nunes Turfgrass, and makes it typical of the many mid-size sod companies in America.

"Everybody has heard the slogan that when you're No. 2, you try harder," says Lawrence R. Hart, vice president and corporate general manager of Davis Pacific Corp., and its subsidiary, Pacific Sod Farms.

"However, our company philosophy is that when you're No. 3, you try twice as hard. This, more than anything, is the reason for the success of Pacific Sod Farms."

And Pacific Sod's determination to try harder in the highly-competitive California sod business is paying off.

Now enjoying the best year in its history, Pacific Sod manages to keep its eleven 40-ton Peterbilt trucks on the road constantly, delivering sod to customers from Santa Maria to San Diego, the entire length of Southern California.

To keep these customers happy, Pacific Sod grows seven different varieties of turfgrass, and literally delivers them to the customers' "front doortstep" to meet most installation deadline requirements.

Of Pacific Sod's 394 acres, 210 are devoted to bluegrass, which has the greatest demand in Southern California. The rest of the acreage is divided as follows: Tifgreen, 85 acres; dichondra, 35 acres; Santa Ana, 30 acres; Bluerye, 15 acres; Tifdwarf, 10 acres; and St. Augustine, 8 acres;

Tifgreen, Santa Ana, and Tifdwarf are hybrid bermudagrasses, while dichondra, Bluerye, and St. Augustine are special varieties grown for special purposes.

According to Hart, professional landscape contractors in Southern California are Pacific Sod's biggest customers, accounting for 54% of the company's total sod sales.

The remaining sales are broken down as follows: sod brokers, 19%; retail nurseries, 11%; distributors, 9%; builders-developers, 5%; and



**Vacuums clean up** after mowing. A land plane is used to smooth the surface for seeding.





## Pacific Sod Farms

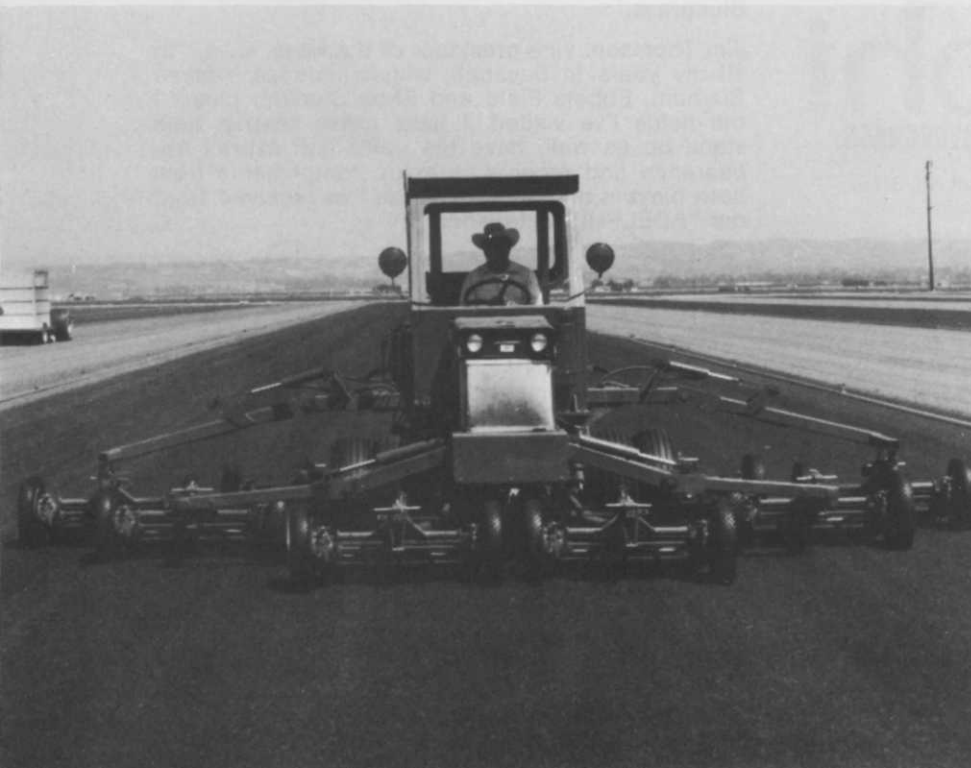


**One of two Ford/Brouwer harvesters** used by Pacific Sod Farms.



**A John Deere tractor and tiller** prepare part of Pacific's 400 acres of fields for seeding.

**A seven-gang Jacobsen mows** between irrigation lines as a vacuum follows in the next row.



all others, 2%. In the latter category are golf courses, parks & recreation departments, and governmental agencies on the city and county levels.

Pacific Sod has 51 permanent and 20 seasonal employees, with Larry Hart and Walt Flowers directly involved in the management of the company. Flowers is vice president of the Davis Pacific Corporation's farming operations in Ventura County, and also serves as Pacific's farm manager.

The company takes great pains to keep its cultural practices up-to-date, and utilizes a variety of equipment to maintain and harvest the sod.

This includes Jacobsen and Roseman mowers, Nunes and Rake-o-Vac sweepers, two Ford tractors equipped with Brouwer harvesters, a D4 Caterpillar tractor, tractors from John Deere, Massey-Ferguson and Allis-Chalmers, a 40-foot Marvin land plane, a 500-gallon Master spray rig, and other highly specialized items.

Pacific Sod was founded in 1968 by five Ventura investors, who successfully operated the company for three years, then sold their interests in December, 1971.

For the past seven years, the company has been owned and operated by the Davis family, pioneer settlers in Ventura County, and their major farming enterprise, the Davis Pacific Corporation. With their deep agricultural roots in the county, the Davis family brings more than a hundred years of farming tradition and experience to the highly successful Pacific Sod operation.

In its continuing program of improving its product and operations, Pacific Sod has undergone extensive reorganization and revitalization during the past two years.

The company has computerized its accounting system, modernized its business operations, and expanded its services to customers. In addition, it has developed and purchased new equipment, and inaugurated better cultural practices to assure uniform, high quality standards of sod production.

On August 22nd, Pacific Sod will celebrate its tenth anniversary, and launch its second decade of service to the landscape and ornamental horticulture industries. **WTT**