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Economic Information
Report EI 01-04

Market Expansion Strategies for Turfgrass Producers in the Central United States



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October 2001

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by

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September 2001

Executive Summary

This paper reports the results of the second phase of a multi-year marketing study of turfgrass in the Central United States. The research, implemented by the University of Florida, consisted of two sequential steps. In the first step, case studies were conducted through personal interviews of various sod-related businesses. Their purpose was to identify the most critical factors influencing the demand for sod. This information was necessary to design, develop and implement telephone surveys, the second portion of the research. Roughly 430 firms, representing eight (8) distinct Standard Industrial Classifications (SIC) in 13 states, were sampled. Data were analyzed by: 1) geographic subregion — north and south central, and; 2) type of business — contractors and developers, landscape service firms, retail garden centers, and sports turf facilities.

In contrast to an earlier study that examined the eastern U.S. where the retail sector dominated, the most important markets in the central region were landscape services, with 42 percent market share, followed by sports turf businesses (25 percent), retailers, and general contractors (12 percent). Moreover, considerable differences in the quantities of sod purchased were apparent among buyer groups between the north and south. For instance, very little (3 percent) sod was bought by contractors in the north, but considerably more (15 percent) was purchased by their counterparts in the south. Similarly, home improvement chains such as Home Depot and Lowe's were important outlets in the north (40 percent), but much less so in the south (20 percent). Finally, sports turf facilities were prominent in the south (18 percent), but not in the north (8 percent).

An analysis of purchasing characteristics demonstrated that retail outlets and landscape services were generally lower-priced but higher-volume customers. In contrast, general contractors and sports turf facilities consumed lower volumes but paid higher prices for their grass. With regard to the tradeoff between sod versus seed, in the north roughly equal proportions of sod and seed were used. In the more southerly regions however, the use patterns were more pronounced, with average consumption increasing to more than two-thirds. In terms of utilization by different types of businesses, the northern region varied considerably more than the south. For instance, contractors in the north sodded roughly two-thirds (63 percent) of their developments. In contrast, sports turf facilities were on the lower end, sodding only about one-third of their turf areas. Retailers and landscape services were roughly equal at about 50 percent each.

To assess current and future economic impacts, respondents were asked how their business volumes had changed from the previous year (1999). Nearly all firms (81 percent) stated that business activity had grown from the previous year. Sports turf users, architects and retailers all claimed that business had increased roughly 25 percent. General contractors and developers indicated that business volume had grown by 57 percent. The average growth for all categories was an impressive 31 percent. Nine percent of firms claimed that business had declined and 10 percent stated there was no change from the previous year.

Results of this research demonstrate that although there are common threads to both geographic regions (Eastern and Central), pronounced differences were also apparent. Disparities became more pronounced as the data were analyzed into smaller market segments. Results strongly suggest that producers interested in maximizing their marketing strategies must pay special attention to the differing needs and expectations of the target markets they are pursuing.

Keywords: central region, market demand, product characteristics, product supply, sod.

Acknowledgment. This research was sponsored by the International Turfgrass Producers Foundation, Rolling Meadows, IL.

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Market Expansion Strategies for Turfgrass Producers in the Central United States

John J. Haydu and Alan W. Hodges¹

Introduction

When the International Turfgrass Producers Foundation (ITPF) funded the first phase of its market research effort in late 1998 (Haydu and Hodges, 2000), the U.S. economy was vibrant and the outlook for sod production was good. Research from the eastern region confirmed this assessment with demand for sod appearing strong and healthy. Indeed, results suggested that the problem confronting producers was not one of demand, but essentially ineffective approaches to marketing, or insufficient resources directed at marketing. Customers interviewed reiterated the most fundamental marketing problems – not being able to find sod *when* it was needed, *where* it was needed, and *how* it was needed. Part of the problem lies with the inherent nature of sod (i.e., bulky and highly perishable) and that it is handled much differently than most agricultural commodities. For instance, rather than utilize traditional marketing channels, most sod is purchased at the wholesale level directly from the farm. Because producers expect customers to come to them, many market opportunities were overlooked in this region.²

In February 2001, results of the second phase of ITPF's marketing effort, covering the Central United States, were presented in Albuquerque, New Mexico. As expected, many of the problems that surfaced in the eastern region were also in the central portion. However, there were also some substantial differences. These differences, in addition to a detailed examination of results specific to the central region, are the subject of this report, which begins with a general background to the sod industry.

Once sod leaves the farm, it typically passes through one or more marketing channels — to new residential or commercial developments, for re-landscaping existing developments, for sports turf facilities such as athletic fields and golf courses, and commercial applications that include businesses, public and private schools, and roadside uses (Haydu et. al., 1998). A conceptual illustration of product flows within the sod production-marketing system and its major players is shown in Figure 1. For simplicity, the sod market is divided into two primary sectors — new developments, comprising roughly 75 percent and existing homes and commercial businesses covering the remaining 25%. For new developments, it is estimated that roughly a third of total volume is sold through landscape contractors and the other two-thirds is sold by sod installers. In essence, these segments represent the array of possibilities that producers must consider in their marketing strategies.

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² For detailed coverage of these and other issues in the eastern region, see Haydu and Hodges, 2000.

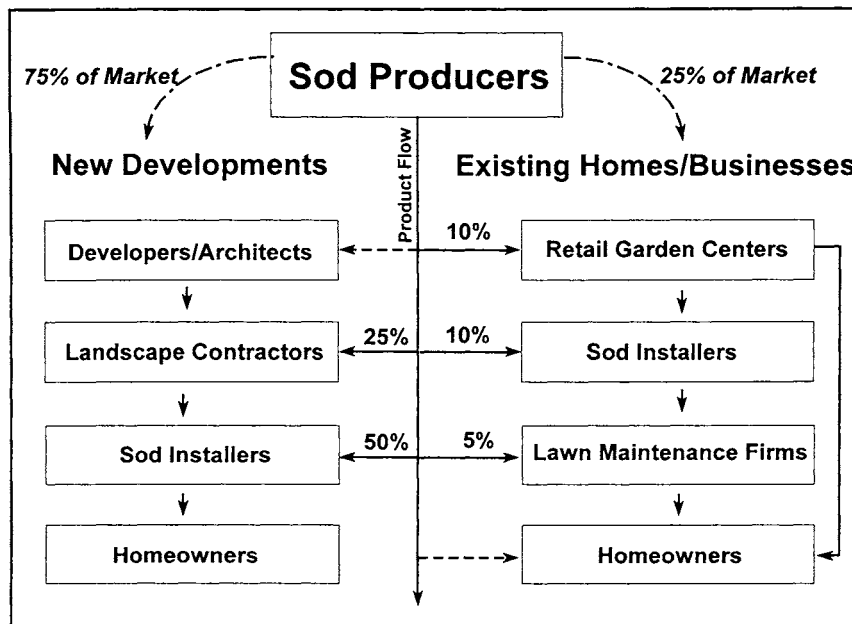


Figure 1. Illustration of marketing system for turfgrass-sod and traditional product flow.

The final customer for sod can be the homeowner, a golf course, or an elementary school. Each of them has different circumstances and, hence, different expectations. Thus, the producer needs to take these different needs into account. Although the customer generally decides the type of sod to purchase, the installer also plays an important role. Both the landscape contractor and sod installer often make the decision *from whom to buy* and may even recommend to the homeowner the type of sod to plant. Hence, although both are important, the latter is critical from the producers' perspective, and so both sets of customers should be considered.

The purpose of this study is to address these marketing issues and to identify practical strategies for expanding sod markets. More specifically, the objective is to identify major factors that influence the demand for turfgrass in selected metropolitan centers in the central United States. The report consists of three main parts. In part one, the research methods employed are presented and discussed. Part two introduces important findings of the research in the central region and also compares key results with the eastern region. Part three offers specific marketing recommendations based on conclusions of the study.

Research Methods

Study Areas. The research focused on the central portion of the United States. Due to the geographic diversity this large area represents, and in order to make project results more applicable to producers in different parts of the study area, it was further delineated into two sub-regions as shown in Figure 2.

Case Studies. Case studies were conducted through personal interviews to identify important factors affecting sod demand in each major geographic area. The types of companies interviewed included: 1) an athletic field used for professional baseball and soccer; 2) a very

large, vertically integrated sod producer-distributor-landscaper and irrigation contractor; 3) a very large landscape nursery; 4) a wholesale distributor, broker, re-wholesaler; and 5) a large, newly completed golf and country club. Preliminary questionnaires were developed for the interviews that were conducted at the business site and took between 1 and 1½ hours to complete. The information was compiled and organized for the second phase of the research process – the telephone surveys.

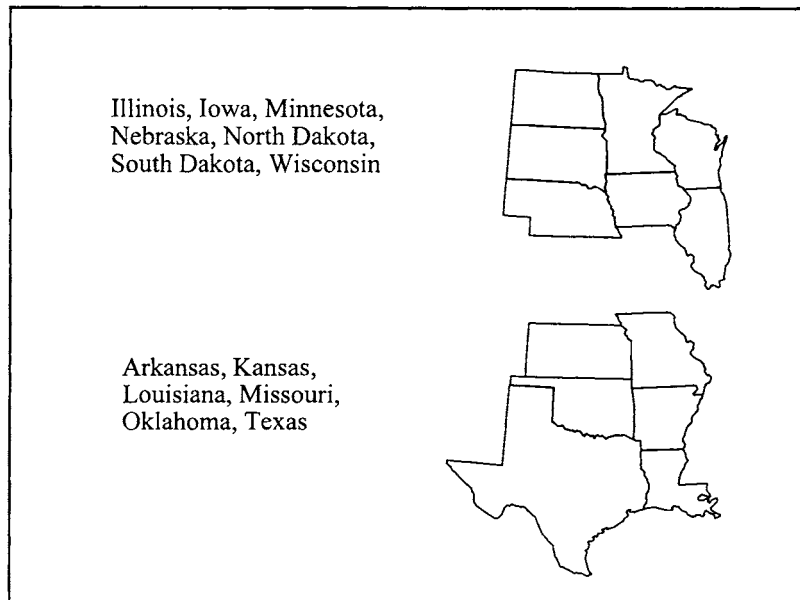


Figure 2. States and subregions comprising the Central U.S.

Telephone Surveys.

Whereas case studies provide the basic information to determine strategic opportunities, telephone surveys establish authenticity through a large random sample of representative firms. Phone surveys are useful because they allow a wide spectrum of people to be covered within a short time period. Although mail surveys can provide more detail, acquiring an adequate sample often takes many months, while telephone surveys can be completed in a matter of weeks. However, a limitation of phone interviews is that only a brief time is available to obtain the information. Therefore, questions must be concise and target a specific issue. Establishing which questions should or should not be included in the interviews was an essential function of the case studies. Respondents fell into four main categories based on Standard Industrial Classification (SIC) codes developed by the U.S. Department of Commerce. These four sectors were: 1) General Contractors, 2) Landscape Services, 3) Retailers, and 4) Sports Turf Users and included the following SIC categories:

- *General Contractors* – General contractors and developers of single family housing construction (SIC 1521), commercial residential construction (SIC 1522) and non-residential construction (SIC 1542).
- *Landscape Services* – Landscape architects comprising landscape counseling and planning (SIC 0781), lawn and garden services (SIC 0782), hydro-seeding contractors (SIC 078213), sodding services (SIC 078203), landscape contractors (SIC 078204), and lawn maintenance firms (SIC 078206).
- *Retailers* – Nurseries and garden centers (SIC 5261).
- *Sports Turf* – Sports turf and golf courses comprising public golf courses (SIC 7992) and membership sports and recreation clubs, including private golf clubs (SIC 799700). Athletic field maintenance (SIC 078216), and Stadiums, Arenas, and Athletic Fields (SIC 794104).

A random sample of firms were selected within these sectors. Lists of firms were purchased from a company called *Marketing Systems Group*, an authorized vendor for data products from *American Business Information*, the original source for the lists. A total of 429 firms were interviewed from the 12 states. Data were analyzed based on geographic region and business category — general contractors, landscape services, retail garden centers and sports turf businesses (Table 1). As noted, each group actually represent a substantially broader range of business types, accounting for a total of eight (8) SIC codes. These businesses were selected because they represent both major and minor turfgrass markets, and were the most likely to possess knowledge concerning market opportunities.

Table 1. Number of respondents interviewed, by turfgrass buyer category, in two regions of the Central United States in 2000.

Type of Business	Region			
	North ¹	South ²	Total	Percent
General Contractors ³	29	27	56	14%
Landscape Services ⁴	63	62	125	29%
Retailers ⁵	54	59	113	26%
Sports Turf ⁶	57	78	135	31%
All Industries	203	226	429	100%

¹ North Central region includes Illinois, Iowa, Minnesota, Nebraska, North Dakota, South Dakota and Wisconsin.

² South Central region includes Arkansas, Kansas, Missouri, Oklahoma and Texas.

³ Category includes general contractors and developers of single family housing construction (SIC 1521), commercial residential construction (SIC 1522) and non-residential construction (SIC 1542).

⁴ Category includes landscape architects and contractors comprising landscape counseling and planning (SIC 0781) and lawn and garden services (SIC 0782).

⁵ Nurseries and garden centers (SIC 5261).

⁶ Sports turf and golf courses comprising public golf courses (SIC 7992) and membership sports and recreation clubs, including private golf clubs (SIC 799700).

In addition to the type of business, annual sales volume (size) can influence sod purchases. Table 2 provides information on the number of firms interviewed within four class sizes based on annual business volume — small (less than \$500 thousand); medium (\$500 thousand to \$2.5 million); large (\$2.5 million – \$10 million); and very large (over \$10 million). A total of 146 small, 130 medium, 37 large and 14 very large businesses were interviewed in this study.

Finally, Figure 3 shows the average years in business for the four types of companies. General contractors averaged the least with 15 years, followed by landscape services with 18 years, retailers had 27 years experience and sports turf users had the most with 29 years.

Table 2. Number of respondents interviewed by type of business and annual sales volume.

Annual Sales Volume	General Contractor	Landscape Services	Retailers	Sports Turf	Total
Less than \$500,000	13	62	41	30	146
\$500,000 – \$2.5 million	21	27	35	47	130
\$2.5 million – \$10 million	12	8	9	8	37
Over \$10 million	1	3	2	8	14

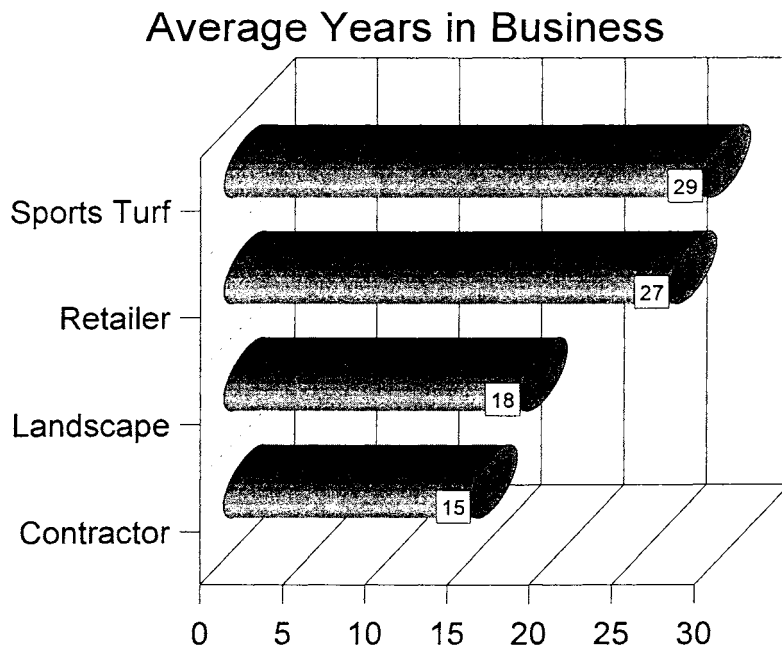


Figure 3. Average years in business as specified by the type of respondent interviewed, 2000.

Results

Market Outlets

As noted earlier, turfgrass sod customers have been grouped into four broad categories, although each also consists of several smaller categories based on SIC codes used by the Department of Commerce. For the Central U.S., the most important sod market was landscape services, with 42 percent market share, followed by sports turf businesses (25 percent), retailers,

and general contractors (12 percent) (Table 3)³. Roughly 80 percent of this sod was purchased in the southern region and, within this sector, landscape services and sports turf businesses were the largest sod consumers.

Table 3. Total square feet of sod purchased, by type of turfgrass buyer, in two regions of the Central United States in 2000.

Type of Business	Region			
	North	South	Total	Percent
	-----Square Feet -----			
General Contractors	332,100	5,943,400	6,275,500	12%
Landscape Services	4,948,538	15,531,199	20,479,737	41%
Retailers	4,104,786	6,717,980	10,822,766	22%
Sports Turf	776,111	12,065,799	12,841,910	25%
All Industries	10,161,535	40,258,378	50,419,913	100%

Inter-regional Assessment. When buyer groups are compared on a larger regional scale, variations in purchasing patterns are also evident. For example, retailers in the eastern U.S. (1999 study) accounted for the largest share of purchases (44 percent), but less than half that share (21 percent) in the central U.S. (Figure 4). Sod distribution through the retail chain is a relatively recent phenomenon. This market outlet could grow in the central region as well since it is driven by new housing developments in the last 10 years and the increased interest of outdoor landscaping by homeowners. Whereas retail chains such as Wal-mart, Home Depot and Lowe’s were the predominant outlet in the east, the landscape service sector was the predominant outlet in the central U.S. with 41 percent market share. Sports turf businesses were fairly similar (19 percent eastern versus 25 percent central) across regions, as were contractors, which accounted for the smallest purchases of all turf buyers.

Intra-regional Assessment. Narrowing the focus often provides a different yet equally meaningful perspective. With the exception of landscape services, considerable differences in the quantities of sod purchased were apparent between customer groups in the north and south (Figure 5). Very little (3 percent) sod was bought by contractors/developers in the north, but considerably more (15 percent) was purchased by their counterparts in the south. Similarly, home improvement chains such as Home Depot and Lowe’s were important distribution outlets in the north (40 percent), but much less so in the south (20 percent). Finally, sports turf facilities were prominent in the south (18 percent), but not in the north (6 percent).

³ For confidence statistics on this data, please refer to Table 3a in the Appendix.

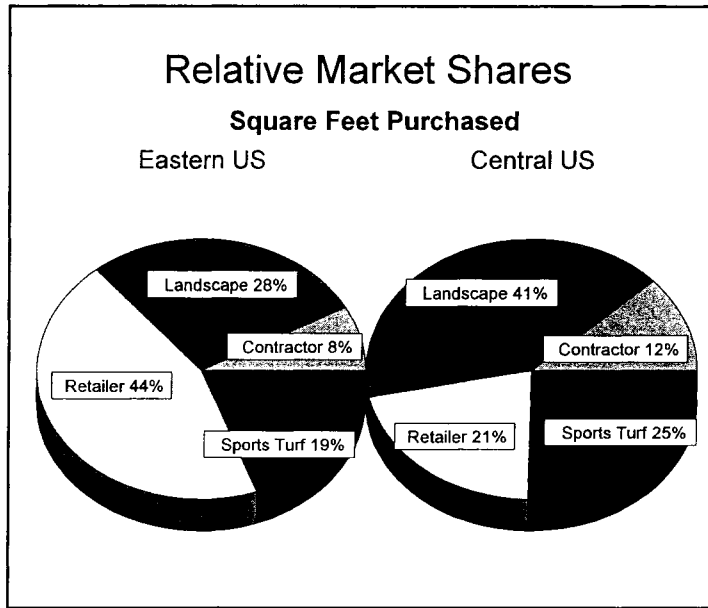


Figure 4. Comparison of market shares of turfgrass from various types of buyers in the Central and Eastern U.S.

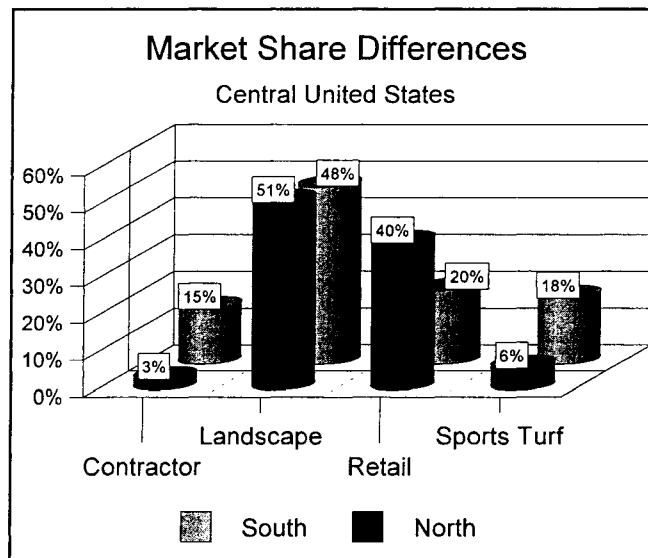


Figure 5. Comparison of market shares of turfgrass from buyer groups in the Central U.S., 2000.

These results have important implications for sod producers. First, although landscape services remains a traditional market channel for sod in the central region, this trend is expected to diminish as other outlets become more popular, such as the retail market in the eastern U.S. For instance, the retailers in the north were used twice as much as the south, suggesting a movement in that direction by producers. Second, the type of product used by chains has begun to shift away from plugs to more sod. Conversations with chain store managers and producers support the assertion that sales for use in small landscape renovations by homeowners and small landscape contractors had grown appreciably in recent years. Third, opportunities in the sports turf market were far greater in the south due to the preference for seeded fields in the north (Figure 6). However, this situation may be changing. Personal interviews with owners and managers of golf courses revealed that some chose to sod the entire course, with the exception of the putting greens. Reasons cited were the demand by club members to begin golf play immediately and the realization by club owners and course superintendents that major revenue would be lost during the six-to-nine months required for the seeded or sprigged grasses to develop adequate thatch.

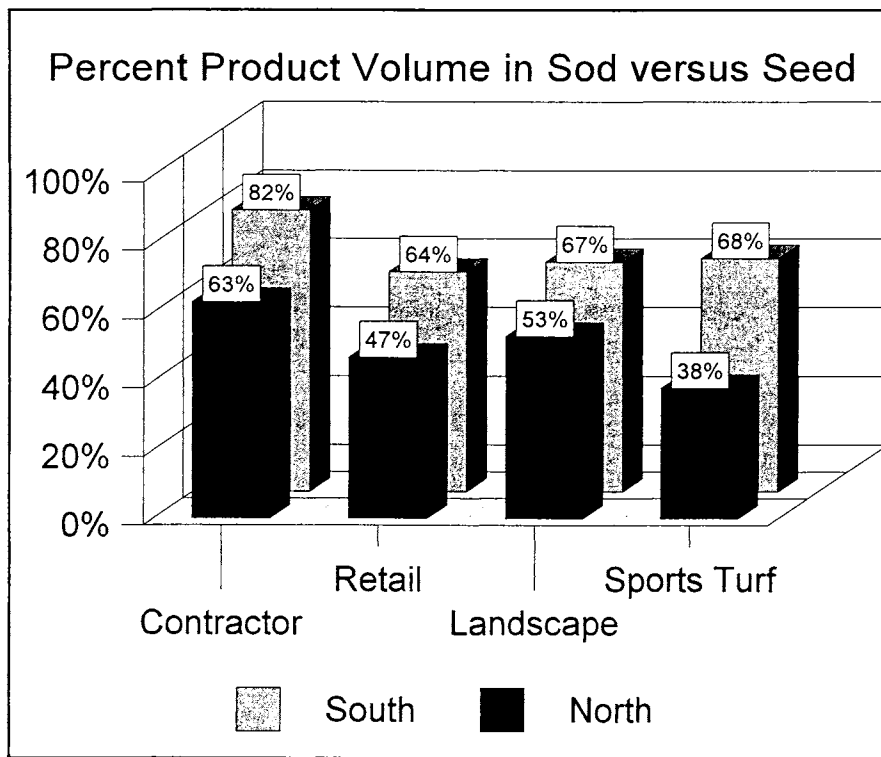


Figure 6. Percentage of total product volume purchased as sod compared to seed, from buyers in the Central U.S., 2000 data.

Purchasing Characteristics

Regional Differences. The preference for particular grass varieties among respondents was highly influenced by geographic location (Figure 7). In the north, grass varieties were heavily

concentrated (98 percent) into either Bluegrass (47 percent) or a Bluegrass/fescue blend (49 percent). The remainder was bermudagrass (2 percent) and several other grasses of little prominence. In contrast, states within the southern region planted a much greater diversity of turfgrass. The top four grass varieties were Bermudagrass (56 percent), Bluegrass (20 percent), St. Augustine (10 percent) and Zoysia (5 percent).

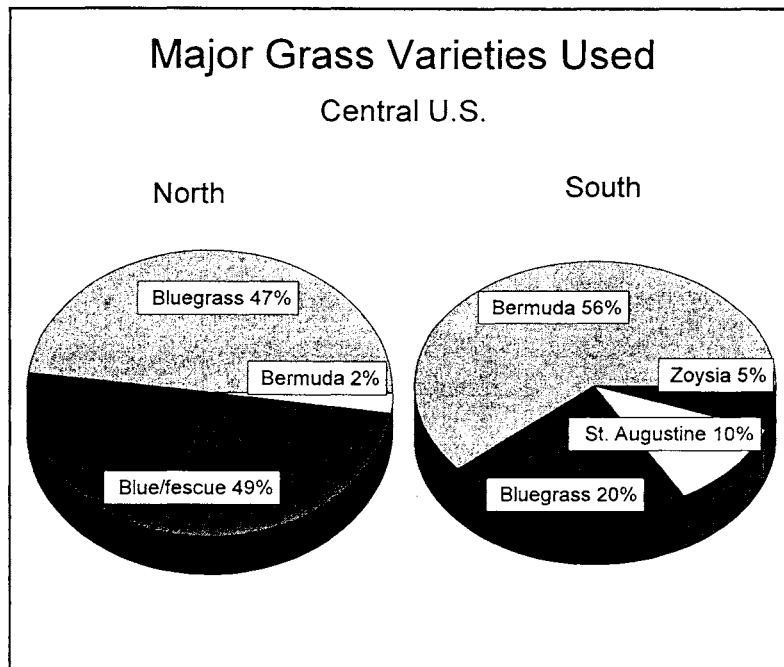


Figure 7. Major types of grasses purchased by respondents interviewed in the Central U.S., 2000

Type of Buyer. Purchasing characteristics varied according to buyer type and grass variety (Table 4). For bluegrass, sports turf was the most prominent customer category with 57 percent share of total value. Bluegrass was second in terms of quantity of sod purchased. A high value but lower quantity indicates that sports turf buyers paid a high per unit price (\$0.87) for their sod. On the other hand, landscape services and retail garden centers accounted for smaller shares in terms of value but larger (relative) quantities bought, translating into lower unit prices paid.

For the bluegrass/fescue blend, landscape services and retailers comprised the lion's share of the market for value and total square feet purchased, while paying the lowest per unit price for their sod. Sports turf and general contractors were essentially a negligible part of the market but paid substantially higher prices for their sod.

Landscape services dominated the market for bermudagrass both in terms of quantity (80 percent) and value (62 percent). The combination of high quantity and value translated into high prices paid. Some landscape services must have utilized bermudagrass for specialized jobs that included a substantial service component to have such a high unit price. Interestingly, sports turf buyers who paid high prices in the previous categories, paid the least for bermudagrass. Similarly, retailers represented a negligible component within this category, suggesting bermudagrass is of little importance to them.

Table 4. Value, quantity and average price of major turfgrass types purchased, by type of buyer (for respondents reporting both value and quantity purchased).

Type of Turfgrass & Buyer	Value (\$1,000)	Percent Share	Quantity (1,000 ft ²)	Percent Share	Price (\$/foot ²)
Bluegrass	\$3,190.5	100%	10,303.8	100%	\$0.31
General Contractors	\$50.6	2%	208.5	2%	\$0.24
Landscape Services	\$614.9	19%	3,414.1	33%	\$0.18
Retailers	\$697.1	22%	4,591.0	45%	\$0.15
Sports Turf	\$1,827.7	57%	2,090.2	20%	\$0.87
Bluegrass/fescue blend	\$390.1	100%	4,813.6	100%	\$0.08
General Contractors	\$3.0	1%	20.0	(-)	\$0.15
Landscape Services	\$152.5	39%	2,270.8	47%	\$0.07
Retailers	\$183.5	47%	2,415.8	50%	\$0.08
Sports Turf	\$51.	13%	107.0	3%	\$0.48
Bermudagrass	\$12,296.5	100%	17,007.2	100%	\$0.72
General Contractors	\$2,100.9	16%	2,182.2	13%	\$0.92
Landscape Services	\$9,813.5	80%	10,465.9	62%	\$0.94
Retailers	\$163.9	1%	1,247.5	7%	\$0.13
Sports Turf	\$318.0	3%	3,111.6	18%	\$0.10
St. Augustinegrass	\$2,215.6	100%	3,433.7	100%	\$0.64
General Contractors	\$2,058.1	93%	2,366.8	70%	\$0.87
Landscape Services	\$61.3	3%	786.2	23%	\$0.08
Retailers	\$89.9	4%	224.3	7%	\$0.40
Sports Turf	\$6.2	(-)	56.3	2%	\$0.11

In stark contrast to the other varieties, use of St. Augustinegrass was dominated almost entirely by general contractors who accounted for 70 percent of product volume, 93 percent of value, and expended the highest unit price. Because of its susceptibility to cold, St. Augustinegrass is restricted to the warmer southern regions where it remains a preferred grass by many developers. Retailers (4 percent) and landscape services (3 percent) were similar in terms of the dollar value of purchases, but retailers paid substantially higher prices for their product. Finally, sports turf facilities accounted for very little of St. Augustinegrass purchases.

Conclusions regarding purchasing characteristics of major customer categories are found by combining results across grass varieties. Large variations exist within market groups or even within a smaller market segment. For example, landscape services include landscape architects and contractors in addition to lawn maintenance businesses. A high-end design and contracting firm developing landscapes for prominent commercial establishments will have a different set of financial parameters than will a small contractor renovating landscapes for a middle-class

neighborhood. To satisfy customers, producers must identify relevant differences and offer a product and/or service that meets the expectations of the clients being served.

Sod versus Seed. A factor examined in this study was the proportion of land that was planted in sod as opposed to seed. From a marketing perspective, regions that utilize a greater proportion of seed could potentially offer a correspondingly larger market for sod. In the north, the average respondent used roughly equal proportions of sod and seed (Figure 6). In the more southerly regions that includes states like Arkansas, Louisiana and Texas, the average portion of sod being used increased to more than two-thirds. In terms of use patterns across business categories, the northern region experienced considerably more variation than the south. For instance, contractors in the north sodded roughly two-thirds (63 percent) of their developments, while sports turf facilities sodded only about one-third of their turf areas. Retailers and landscape services used sod and seed nearly equally at about 50 percent. In the southern states, use patterns for sod were nearly identical across business categories. The exception to this was general contractors who utilized sod about 15–20 percent more than the other business types.

Market opportunities for increasing sod sales by enticing current grass seed users to buy sod are more abundant in the north, where more seed is currently being used, and perhaps less abundant the further south one goes. As noted however, there are some discrepancies. For instance, sports turf companies in the north only used 38 percent sod, about 20 percent less than the other groups, suggesting their preference for seed. This may be related to the winter weather conditions in the north, which make outdoor sports neither practical nor desirable. The situation is markedly different for some southern states, which experience warmer winter weather, and where winter visitors are looking for outdoor activities. Not only can these businesses not afford long periods of down time from their fields, but turf-wear is much more intensive, necessitating more frequent replacement. The combination of these two characteristics makes sod very feasible for this group. Indeed, during the case studies, several respondents believed that many sports turf facilities under-utilized sod.

Business Seasonality. A related variable influencing the utilization of sod is seasonality of the business. Marketing strategies might target slow or fast periods, depending on the firm's objectives and where opportunities arise. For the firms interviewed, the peak periods were in the spring, summer and fall and the slack period was winter (Figure 8). There was almost no difference in seasonality between growers from the north or south. For some sod producers, the interval with the most activity might indicate the greatest opportunities, since demand at this time would be highest. On the other hand, since most producers are busy at this time, it might also be the most competitive so a possible strategy could be to target periods of low intensity to create market opportunities. For instance, slow winter months might be a good time to contact state and local governments who need lower quality grass for roadsides and drainage areas. Turf quality in northern areas is already compromised during this time of year, so offering a lower price to move excess production may be profitable. It may make sense from an operational and financial standpoint to even out the peaks and troughs of business activity throughout the year.

Seasonality of Business

Percent Annual Business Volume

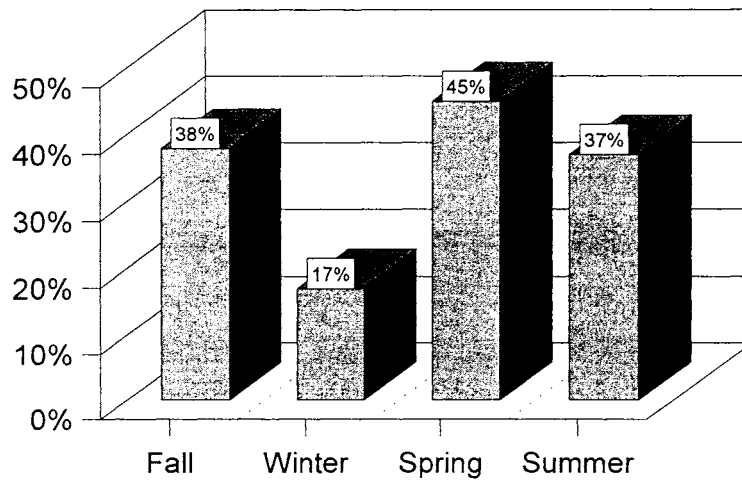


Figure 8. Seasonality of business volume for turfgrass related firms, Central U.S., 2000 data.

Business Outlook

Like most agricultural enterprises, sod production involves a certain degree of risk. Producers must make decisions today whose impact may not be felt for a year or more into the future. Decisions such as the types of grasses to plant, how much of each variety, capital investments that should be made, land improvements that will improve sod quality and enhance production efficiencies, and the “break-even” price necessary to sustain solvency and profitability are just some of the many vexing problems that business managers and owners must address on a continual basis. Since the demand for sod is so closely tied to housing starts, which in turn is affected by interest rates and the general health of the economy, knowledge of these issues is essential. How well informed the owner/manager is will determine the type of decisions made, including the inherent risks associated with those decisions. For example, deciding to expand the business under conditions of a slowing economy could be risky, depending on the circumstances of the producer and the particular market being served. Obtaining the opinions of important sod clients who are “downstream” in the production–distribution channel provides unique and valuable perspectives for sod producers.

Changes from the Previous Year. To assess current and future economic impacts to the sod market, respondents were asked how their business volumes had changed from the previous year (1999) and, if changed, by how much. Nearly all firms (81 percent), regardless of type, stated that business activity had grown from the previous year (Table 5). Sports turf users, architects and retailers all claimed that business had increased roughly 25 percent from the previous year. General contractors and developers indicated that business volume had grown by 53 percent. In spite of the present slowdown in the economy, such healthy expansions by this group should be

encouraging for the sod industry, which relies on new residential and commercial construction. Construction contracts are usually multi-year and so, even with a downturn, it could take some time before the full impact is felt, giving producers an opportunity to respond accordingly.

Table 5. Changes in business volume that occurred during 1999 for turfgrass related businesses in Central U.S., 2000 data.

Type of Business	Change in Business Volume from Previous Year							
	Increase			Decrease			No Change	
	Number of Firms	Percent of Firms	Avg %	Number of Firms	Percent of Firms	Avg %	Number of Firms	Percent of Firms
Contractors	35	8%	43%	9	2%	39%	10	2%
Landscape	109	26%	28%	7	2%	23%	9	2%
Retailers	96	23%	29%	8	2%	15%	6	1%
Sports Turf	95	23%	15%	15	4%	26%	15	4%
Total	335	81%	39%	39	9%	26%	40	10%

The average growth for all categories that claimed business had grown was an impressive 39 percent. Nine percent of firms claimed that business had declined and 10 percent stated there was no change from the previous year. Although the group maintaining that business activity had fallen was small, the percentage decline for the average business was quite substantial. Why these firms encountered such financial turmoil amidst a generally prosperous climate is unclear.

Future Purchases. Respondents were next asked about their expectations regarding sod purchases for the coming year (Table 6). In this case, fewer firms expressed such confidence (37 percent), although those that did were quite optimistic and expected a 44 percent average increase. Even the retail firms that are generally more conservative expected a 31 percent increase. General contractors and sports turf businesses were the most optimistic of the four groups, with average expected increases of 57 percent and 67 percent, respectively. The landscape service sector was similar to retailers with an anticipated 35 percent increase.

A smaller proportion (26 percent) of businesses surveyed expected no change in business activity for the coming year (2001). Given that business volume was strong in 1999, this may be interpreted as an expression of business confidence from this group. However, more than one-third (36 percent) of those surveyed expected sod purchases to decline by nearly 50 percent. This number is up substantially from the 1999 study in which only 9 percent expected decreases. This group was perhaps particularly acute sensing the contraction that the economy is currently experiencing. Like last year, the group expecting the largest decline in business activity was sports turf users. During personal interviews, some golf course managers observed that their industry tends to be “project driven”. During a period of project activity, managers may embrace

Table 6. Expectations regarding sod purchases next year (2001), by type of business, for firms in the Central U.S., 2000 data.

Type of Business	Expected Change in Business Volume for Next Year							
	Increase			Decrease			No Change	
	Number of Firms	Percent of Firms	Avg %	Number of Firms	Percent of Firms	Avg %	Number of Firms	Percent of Firms
Contractors	22	5%	57%	21	5%	57%	11	3%
Landscape	50	12%	35%	51	12	41%	22	5%
Retailers	46	11%	31%	41	10	24%	19	5%
Sports Turf	37	9%	67%	39	9%	61%	58	14%
Total	155	37%	44%	152	36%	51%	110	26%

a more optimistic outlook since expansion is often associated with economic health. Conversely, during a project hiatus, apprehensions may surface, including uncertainty about the economy and the financial risks that a downturn portends. Sports turf facilities provide leisure activities that rely almost exclusively on discretionary income. During economic slowdowns, such expenditures are often the first to be cut by consumers.

Finally, respondents were asked to give a longer projection regarding their expectations for sod purchases. Interestingly, less than one-fifth (18 percent) felt that business activity would warrant increases in sod purchases in the next three-to-five years (Table 7). Almost half (44 percent) believed sod purchases would fall, and another 38 percent indicated no change. Regarding increased purchases, only 13 percent of contractors were optimistic as opposed to 31 percent for both retailers and sports turf businesses. For declining purchases, landscape services, retailers and sports turf were roughly equal, each representing about one-third of their respective categories. Twelve percent of contractors felt that purchases would decline in the next 3–5 years. The same scenario was repeated for those indicating no expected change.

Table 7. Expectations regarding sod purchases in the next 3– 5 years, by type of business, for firms in the Central U.S., 2000 data.

Type of Business	Expectations for Sod Use in Next 3–5 Years							
	Increase		Decrease		Same		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Contractors	10	13%	22	12%	19	12%	51	12%
Landscape	19	25%	57	31%	32	21%	108	26%
Retailers	23	31%	49	27%	51	33%	123	30%
Sports Turf	23	31%	55	30%	54	35%	132	32%
Total	75	18%	183	44%	156	38%	414	100%

Desired Product Characteristics

Arguably the most essential, and often times the most difficult, marketing function is to determine what consumers want out of a product or service. Stated more technically, product suppliers should always strive to match product characteristics with buyer expectations. The closer the match, the happier the consumer, and the more value they attach to that product. From a producer's standpoint, value should translate into higher prices and greater quantities sold, which in turn suggest higher profits. To determine buyer expectations regarding sod, three inter-related questions were asked: (1) What are the most important criteria you consider when purchasing sod? (2) What features do you like *most* about sod? (3) What features do you like *least* about sod? Respondents were also requested to rank criteria on a scale of one to four with four being the most important. Results, presented in Table 8, are weighted averages for all firms and also categorized by type of business.

Table 8. Importance of major product features affecting the purchase of sod, differentiated by type of business.

Major Sod Features	Contractor	Landscape Services	Retailer	Sports Turf	All Firms
<i>1. Purchasing Criteria</i>					
Quality	3.10	3.50	3.50	3.58	3.58
Price	2.94	2.76	2.45	2.55	2.64
Availability	2.63	2.22	2.37	2.36	2.36
Delivery	1.39	1.50	1.68	1.53	1.54
<i>2. Features Liked Most about Sod</i>					
Rapid Establishment	3.34	3.22	3.19	3.63	3.36
Attractive Appearance	3.00	3.16	3.14	2.59	2.90
Erosion Control	2.24	2.25	2.37	2.25	2.28
Weed Control	1.37	1.52	1.44	1.54	1.49
<i>3. Features Liked Least about Sod</i>					
High Initial Cost	3.53	3.10	3.04	3.15	3.16
Labor to Install	2.77	3.18	3.17	3.37	3.19
Heavy and Dirty	2.34	2.35	2.46	2.24	2.34

Purchasing Criteria

Sod quality was the number one attribute cited by the sample of firms, as indicated by an average value of 3.58 for all firms (far right hand column, Table 8). The reader should note that, because these tabulations are weighted, even small differences between values can be significant. For example, the variation between quality and price is considerable since price is ranked at 2.64, or nearly one full point below quality. This large difference indicates that sod quality is a far greater concern to the average buyer than is price. The third most important feature was availability of supply, with a weighted rank of 2.36. A final purchasing criterion was delivery. With a rank of 1.54, delivery was either not important or was considered negligible compared to the other product features.

Variability concerning desired product features became more evident when examined by type of business. Quality, for example was given a high rank of 3.58 by sports turf users, but a relatively low rank (3.10) by general contractors and developers. Both retailers and landscape service firms also rated quality nearly as high (3.50) as did sports turf users. On the other hand, contractors placed more importance on price (2.94) compared to retailers (2.45) and sports turf businesses (2.55). Availability of sod (obtaining sod when it was needed) was most important to contractors (2.63) and least important to landscape services (2.22). Very little variation existed across business types for product delivery.

Based on these results, producers should generally feature quality over price for all groups except contractors. An interesting question is why contractors (compared to other groups) placed a premium on price rather than quality. Perhaps the best explanation is that sod purchases represent a minor part of a contractor's business volume. Many general contractors and developers deal with sod indirectly, through their landscape contractors. Moreover, from a marketing perspective, this group is also furthest removed from the final consumer — whether it be a homeowner, a garden center shopper, or the member of a golf & country club. Because they are more distant, they tend to be less aware of consumer concerns and, therefore, focus instead on their own financial bottom line. Conversely, retailers and sports turf users are in closer contact with the consumer and are more sensitive concerning the value placed on turf quality.

Features Liked Most about Sod

Rapid establishment was the most desired product feature with an average weighted rank of 3.36 for all firms (Table 8). In both the case studies and telephone interviews, respondents noted that sod provides a “finished, professional look” to their entire job, in contrast to seed that generally conveys an image of work left undone. Attractive appearance was the second dominant feature (2.90), which may be related to rapid establishment. Interestingly, even though “appearance” is an aesthetic feature, as opposed to functional, it underscores the importance of perception by the end-user. People expect a finished product to look good and sod provides that quicker than seed. The last two features, erosion (2.28) and weed control (1.49), are more functional attributes and were identified as less important to respondents. However, notice that erosion control was ranked much higher than weed control. This may stem from the fact that, in some areas, erosion can carry with it hefty fines by local government authorities. Soil run-off is viewed as harmful to streams and rivers and is increasingly becoming a sensitive issue with environmental agencies.

Although rapid establishment was ranked number one by all business types, there were modest differences across business categories (Table 8). Sports turf users ranked it highest (3.63) while retailers (3.19) and landscape service firms (3.22) ranked it the lower. Attractive appearance was the second most important attribute desired by the average firm. Landscape service firms regarded this as more critical (3.16), followed closely by retailers (3.14) and general contractors (3.00). Interestingly, sports turf businesses ranked attractive appearance considerably lower (2.59). Note that sports turf firms emphasized “quality” as a purchasing criteria, but quality for them may indicate tolerance to heavy traffic and perhaps the absence of weeds, as opposed to color and texture. Erosion control was considered about equally important by all business groups.

Features Liked Least About Sod

Three undesirable sod characteristics identified in the personal interviews: a) high initial cost; b) heavy and dirty; and c) the substantial labor required during installation. The labor expense (3.19) was viewed as the most undesirable characteristic, followed closely by the high initial cost (3.16) and not nearly so closely by the fact that sod is heavy and dirty (2.34) compared to seed. Clearly these characteristics are related — the more labor that is required to complete a job drives up overall costs. In both the case studies and telephone interviews, cost became the overriding issue. Although “heavy and dirty” was also cited repeatedly, it was not considered so important probably because most people recognize there is little that can be done about it.

When examined by type of business, high initial cost was ranked most important by general contractors (3.53) and least important by (retailers). Retailers are unlikely to be affected directly by this feature since the cost will be absorbed by the purchaser. Indirectly, of course, retailers could well be impacted through lower sales volume over time. The labor expense associated with installation was viewed most critically by sports turf facilities (3.37) and least by contractors (2.77). Again, those groups most likely to be affected directly by a negative attribute will understandably be most vocal. In most cases, sod landscaping is not part of the housing package, and is often absorbed by the homeowner after the house is built. Hence, general contractors will be less concerned about this cost than would a sports turf business that feels this expense directly. Although retailers considered “heavy and dirty” to be the least important of the three features (2.46), they ranked it of slightly higher importance than any other business category did. Retailers are more likely to hear the complaints of their customers as they either purchase the sod or switch to the more convenient seed.

Market Expansion Strategies

Important Marketing Concepts

“Markets” and “market research” are often perceived as synonymous concepts. They are not. A *market* is not so much a place or a location, but more of an activity that occurs between buyers and sellers who wish to create and exchange products and value with each other. Communication is the catalyst that facilitates exchange and it is a core part of *marketing*. Sellers must determine what buyers want, do their best to provide it, and then communicate their

offering back to the consumer. Hence, marketing is the *process* of communicating and negotiating among interested parties until an agreement has been reached. *Market research* is a management tool used to answer four fundamental questions regarding prospective customers — *what* do they want, *how* do they want it, *where* do they want it, and *when* do they want it? Since our society and economy are in a constant state of flux, the parameters that define these four elements are also changing. Market research keeps the producer abreast of changing consumer demands and allows the offering of the seller to be consistent with the expectations of the buyer.

In addition to communicating with customers, the producer should be aware of the environment within which the firm operates. This is commonly done through a *market analysis*. All producers operate within a set of geographic boundaries and share this space with certain competitors. Market competition refers to the direct and indirect threats faced by the firm. Direct threats would include other sod producers as well as other grasses the firm does not produce. Indirect competition refers to alternative choices available to the firm's intended customers, such as using Xeriscape products instead of lawn, or even perhaps selecting drought-tolerant native bahiagrass over the more intensively managed St. Augustinegrass. A market analysis then is a study of the basic factors defining the market for the firm's product and how the firm should position itself to take advantage of available opportunities. The factors would include:

- Geographical boundaries of the market.
- Economic, environmental, and competitive factors influencing activity in the market.
- The specific market niche(s) that the firm intends to target, including characteristics that define these niches.
- Sales potential for the identified market.
- Other products or services that directly or indirectly compete with those of the firm.

Once the market analysis has been completed, a *marketing plan* should be developed. A marketing plan is a coordinated program describing how the firm intends to motivate potential customers to purchase its product and existing customers to purchase more of the same product. It identifies the goals and objectives to be achieved, the strategies that will position the firm's product in the market, and the specific programs that will be implemented. In order to develop an effective marketing plan, the following types of questions must be answered:

- What is the firm's basic business philosophy and mission statement?
- What market opportunities exist for the firm's product or services?
- What are historical sales and what primary factors influenced sales?
- What are the firm's sales and profit goals for the next three years?
- Who are the product's main customers, how much do they buy, and why do they buy it?
- How do customers perceive the product in terms of quality, value, service, and price?
- What advantages or disadvantages might the firm's competitors have?

- What are current marketing channels used by firms and what opportunities do they imply?
- How will the target market be made aware of the product or service, and how will they be convinced to purchase it?

In simple terms, the marketing plan is essentially the road map to get the firm from point A to point B, including the type of vehicle to be used. The method of transportation is essentially the marketing strategy (or strategies) the firm shall employ. Three potential strategies identified in this research are now presented as viable options for many sod producers.

Increasing the Pie

Everything depends on satisfying the customer. The strategy of “selling what you grow” must be replaced with “growing what you can sell”. The problem is that traditionally growers are not well connected to their consumers. Growing a product is a farmer’s primary concern, and selling it is usually a secondary issue. Unfortunately, this passive approach to marketing carries with it substantial risks, particularly during periods of slowing economic activity.

“The era of simply selling what you grow is nearly gone. Success tomorrow will require growing what the consumer wants, a fact-based selling and increased marketing sophistication.”

Bruce Axtman, Marketing Consultant
Perishables Group, Inc.

Fact-based selling is another term for conducting market research and using the results of the research to develop a marketing program. Ultimately marketing must concentrate on two related objectives: 1) how to move more product, and 2) how to add value to that product. Both of these objectives require a consumer-oriented approach to marketing. Since producers are further removed from the consumer than wholesale or retail firms, establishing working relationships with them can benefit all parties involved. Typically producers sell their sod to contractors, landscape services, retailers, and sports turf facilities — but infrequently they also sell directly to the end-user. Sod producers should develop partnerships with their major customers to establish linkages to the final customer. If solidly constructed, these relationships can be a conduit transmitting crucial market information back and forth between producers and consumers on a regular basis.

Strategy 1: Partner With A Garden Center

Research from this study has confirmed that increasingly producers are using the retail sector as a market outlet (Figure 5 and Table 4). This situation can vary considerably depending on the farm’s geographic location (20 percent of sales in the south compared to 40 percent in the north) and type of grass being sold (40–50 percent for bluegrass or bluegrass/fescue blend compared to 7 percent for St. Augustinegrass or bermudagrass). Research has also shown that this sector has untapped potential. Both independent retail garden centers and chain stores cited that current sales approaches by (many) producers were not sensitive to their needs. In particular, they noted

that sod farms typically offered large loads only, product delivery was infrequent, and some placed a limit on shipping distance. These service features were nearly the opposite of what garden centers customers actually required. The majority of retail garden centers have very limited space available and most customers are homeowners or small, residential landscapers who typically purchase correspondingly small quantities of sod. As a consequence, nurseries absorb higher storage and labor costs (unsold sod must be physically removed from pallets and watered, then restacked), and are still confronted with sizable losses from unsold product. In spite of these obstacles, retailers still purchase and sell sod, but not nearly so much as would be feasible under more user-friendly conditions.

Sod producers have done little towards adding value to their product. Consider for a moment the value-added process for a loaf of bread. Value starts at the farmgate, where the farmer sells four cups of wheat to a miller for \$0.10. The miller grinds the wheat into flour and sells it to the baker for \$0.25, an increase in value of \$0.15. The baker transforms the flour into dough by adding small amounts of water, salt, yeast and an egg; then forms it into a loaf, bakes it, and sells it to a wholesale distributor for \$0.75, an increase in value of \$0.50. Finally, the distributor sells it to a retail grocery store for \$1.00, who in turn sells it to Mrs. John Q. Public for \$1.50. A 10-cent product is transformed across four value-added stages into a product worth \$1.50, roughly doubling its value at each economic stage (Figure 9). The key is altering the products form into something the consumer can utilize and enjoy. Consider what marketers have done with water. A pint of bottled water may cost anywhere from \$0.50 to \$1.50, depending on its source. Ten years ago, who would have imagined that water would cost more than gasoline! Yet unlike bread or gasoline, the original product undergoes very little physical transformation. Much like soft drink products, most of the cost is in advertizing, packaging and distribution, which is precisely what marketing is all about. The point being made is quite simple — if such value can be added to wheat or water, certainly the process can be applied to turfgrass-sod.

The Importance of Innovation. Innovation requires developing a new mode of thinking, changing the way business is done, or even altering the basic structure of the firm. Very simply, innovation demands “working out of the box”. “*Innovation is the pirate ship sailing into the yacht club*” says John Jordan, a principal at Cap Gemini Ernst & Young’s Center for Business Innovation (Cortese, 2001). With information at the fingertips of both producers and consumers, innovation becomes imperative. People and businesses have come to expect the unexpected. Those businesses unable to provide what consumers want through new products and services will not succeed.

The objective of the “market expansion strategy” is to move more product and add value. One such strategy involved a fairly large sod producer who utilized an independent garden center at two levels: 1) on-site sales to the nursery and 2) brokering to homes and small landscape contracting businesses. This was a medium-sized garden center that also had two other strategic locations within the metropolitan area. Unlike many other garden centers interviewed during these studies, the producer took great strides to satisfy this customer by providing sod in smaller quantities while shipping the product more frequently. Although total on-site sales of sod were not particularly large, the owner claimed that it was a service that his customers wanted.

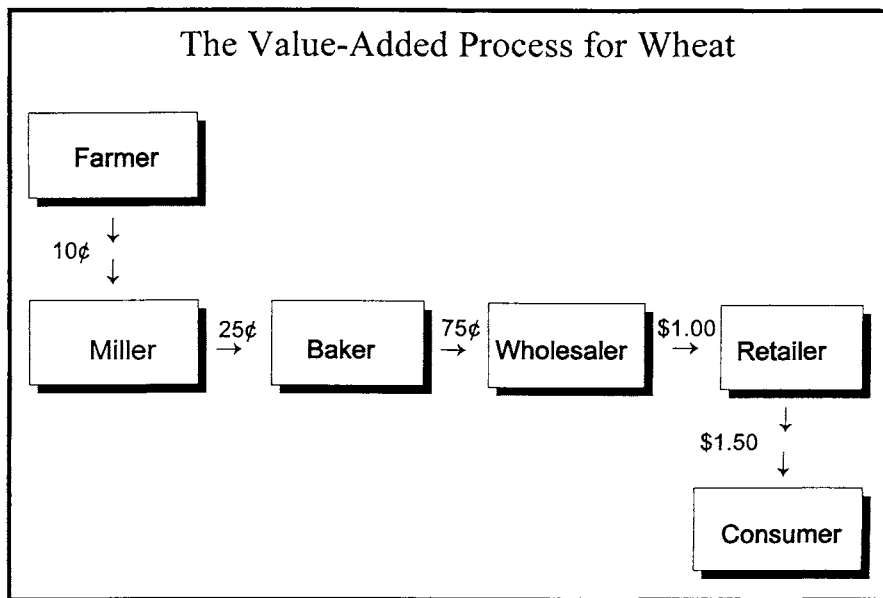


Figure 9. A conceptual illustration of the value-added process converting wheat to bread.

To date, nearly all effort has been directed at producing a quality product at the expense of service. Sod producers need to climb out of their boxes with regard to adding value to the service component of business. For example, many nursery managers noted that two factors were preventing greater sales of sod from their stores: 1) sod's high perishability once cut and 2) limited storage space in most garden centers. Sod not sold within a few days must be removed from the pallet and placed in the parking area for overnight watering. The following morning the sod is then collected and restacked on the pallets. Not only is this labor intensive and costly, the sod's quality is jeopardized each time it is handled. Managers complained of having to discard sizable inventories because of this problem.

A New Pallet System. To increase on-site sales of sod at the nursery will require developing a new pallet system and implementing more flexible shipping-distribution practices. Conceptually the new pallet should have spaces between each layer of sod, sufficient to allow air and water to penetrate each layer. Because of these spaces, each pallet might hold only half the quantity (200 ft²) of sod of standard pallets currently used by the industry. Such a system will cost more to construct, but it should dramatically improve shelf-life. Moreover, sod can remain on the pallet for extended periods of time in a relatively small area, alleviating space pressure on the garden center. As a consequence of less handling, the sod will maintain its quality, more will be sold, and it can be sold at a higher price. This is the essence of a value-added process — enhancing the quality of the product offered, convenience to garden center handlers, and the service to customers.

The Garden Center as Broker. A second “partnering” innovation of the sod producer was to use the garden center in a brokerage capacity for larger volume purchases. Although brokering itself is nothing new, channeling sod through a garden center is, and it allows the producer to tap into his client's customer base. Homeowners interested in complete lawn restoration and

smaller-sized landscape contractors doing restoration work would arrange for their sod to be shipped directly from the farm to the site. Because of the large customer base established by this mid-sized garden center, the manager averaged sales of nearly 10 million square feet annually. This was in addition to on-site sales, which averaged another 1–2 million square feet. This arrangement benefitted all three parties — 1) the garden center received roughly 2 cents per square foot for the negotiating the transaction; 2) the sod producer moved more product and, since it was a “retail” sale, received a price higher than wholesale transactions; and 3) the customer benefitted from the convenience of the nursery arranging for the sod, having the product shipped directly to the required location, and having it backed by a “quality guarantee”. The garden center manager commented that the arrangement worked particularly well because the producer provided exceptional service in four ways: 1) consistent high quality; 2) stood behind his product; 3) followed up on customer problems; and 4) always reliable. The end result is that their sod looks better, so more of it is sold and it is sold at a higher price than that of many competitors. According to the garden center owner, both of them are recognized as “innovators” and reliable suppliers of high quality product. This perception has enhanced their local reputations and improved both business volume and profitability.

Strategy 2. Partnering with Developers and Architects

Of the four buyer categories presented in this study, developers accounted for the smallest market share (12 percent, Table 3). However, several sod producers had established unique contractual arrangements with developers and landscape architects that had a very positive net effect for all parties concerned. Under normal circumstances, landscaping occurs at the tail end of the development process, and sod is the last item laid after other landscape ornamentals are in place. At this point, homeowners are often looking for ways to cut costs, and the only landscape material still needed is sod. Their choices are to seed the area, install xeriscape (which is really no less expensive), or do nothing. Developers noted that under these circumstances everyone loses out — the homeowner is upset when mud or dirt is tracked into the new house; the property does not look good, so it has a lower perceived value; and the developer’s work appears unfinished, in which case they may have a dissatisfied customer and a tarnished reputation. Although seed is a viable alternative under certain conditions, there are many situations where it is not — particularly where grow-in periods are long and the location is highly visible. For instance, as a compromise in cutting costs, some landscapers sod the more conspicuous front yard and seed the less noticeable backyard. Interestingly, sod actually represents a very small proportion of the total cost of a home, roughly one-half of one percent. Moreover, studies have shown that quality landscaping can add 10–15 percent to the home’s value. In other words, if value is the criteria, the last item that should be cut is a quality landscaping, yet this is precisely what is eliminated first.

To overcome this dilemma, some producers have negotiated with developers and architects to incorporate the landscape package into the total cost of the home. In this way, landscaping is not loosely placed at the end of the contract, but becomes part of the contractual agreement. The landscaping expense is thereby incorporated into the total expense of the new home, as are other components of the home. In this particular arrangement, four landscape packages were offered to customers: 1) native (xeriscape) landscapes, 2) small lawns with native (xeriscape) landscapes, 3) medium-sized lawns with landscape trees and shrubs, and 4) large-sized lawns with landscape

trees and shrubs. From a sod producers standpoint, the benefits of this arrangement are that sod is not line-itemed as a last detail, but rather part of a value-added package. Specifically, benefits of this agreement include longer-term production contracts, higher prices for sod, more volume sold, and improved planning capacity for the developer and the producer.

A second innovation was that some developers were also partnering with local water authorities. This group promoted the use of reclaimed water and helped develop educational material on water-efficient irrigation practices for homeowners. This demonstrated that developers and sod producers were environmentally responsible and wanted to work with regulatory agencies, not against them. Such a positive relationship was also seen as a way to avoid costly and lengthy legal and political battles with government agencies.

Concluding Comment

In the second phase of this three-part project, it is apparent that demand for turfgrass remains strong. Across all sectors examined, both geographically and by business category, results indicated that demand generally exceeded supply. Far more important, however, the data show that important differences exist within and across markets. Such differences have important implications for producers interested in developing marketing programs. Primarily it supports general marketing axioms — that markets should not be treated equally and that customer expectations differ depending on the type and location of the market. Producers seeking to maximize their marketing effectiveness should fine-tune their products and services according to the needs of the target market they wish to serve. This requires knowing in advance the criteria unique to that market, such as the product attributes desired most, and then developing management and marketing strategies designed to achieve those expectations.

Appendix

Table 3a. Confidence Statistics for Volume and Value of Sod Purchased by Buyers in the Central US, TPI Sod Marketing Survey, 2000

Statistic/Buyer type	Volume Purchased (sq. ft)			Value Purchased (\$)		
	North Region	South Region	All Regions	North Region	South Region	All Regions
Total (sum)						
Builders	332,100	5,943,400	6,275,500	194,477	4,496,780	4,691,257
Retail	4,104,786	6,717,980	10,822,766	583,287	2,013,842	2,597,129
Services	4,948,538	15,531,199	20,479,737	871,424	15,818,947	16,690,371
Sports	776,111	12,065,799	12,841,910	324,725	5,028,870	5,353,595
All Types of Buyers	10,161,535	40,258,378	50,419,913	1,973,913	27,358,439	29,332,352
Lower 95% Confidence Limit for Total*						
Builders	198,640	(2,176,413)	(2,139,580)	84,301	(2,998,010)	(2,990,796)
Retail	1,499,032	(157,837)	3,452,359	217,949	605,018	1,118,711
Services	871,354	(4,070,537)	283,741	387,761	(4,788,777)	(4,189,769)
Sports	364,884	936,061	1,542,278	59,223	452,272	704,327
All Types of Buyers	5,173,284	15,232,944	24,673,473	1,296,859	4,646,391	6,445,315
Upper 95% Confidence Limit for Total**						
Builders	465,560	14,063,213	14,690,580	376,882	13,125,666	12,650,222
Retail	731,594	33,751,712	28,156,946	775,934	40,314,544	31,829,591
Services	1,041,968	36,564,354	35,094,165	997,629	38,439,449	35,094,165
Sports	953,290	52,502,662	40,399,096	753,764	48,752,472	35,094,165
All Types of Buyers	3,192,412	136,881,941	118,340,787	2,904,208	140,632,132	114,668,142
Average						
Builders	15,814	396,227	174,319	11,440	321,199	151,331
Retail	124,387	186,611	156,852	16,665	46,834	33,297
Services	105,288	398,236	238,136	19,365	385,828	194,074
Sports	18,049	215,461	129,716	9,551	96,709	62,251
All Types of Buyers	70,566	275,742	173,862	15,068	182,390	104,386
Standard Deviation						
Builders	14,859	1,069,657	715,568	13,633	1,021,973	703,948
Retail	231,430	584,678	452,700	31,507	109,614	85,407
Services	303,428	1,601,423	1,111,117	36,786	1,642,034	1,148,757
Sports	31,996	758,813	579,416	23,231	323,806	255,787
All Types of Buyers	212,086	1,056,694	771,369	30,181	946,138	696,595
Number Respondents reporting						
Builders	21	15	36	17	14	31
Retail	33	36	69	35	43	78
Services	47	39	86	45	41	86
Sports	43	56	99	34	52	86
All Types of Buyers	144	146	290	131	150	281

*Confidence limits calculated as $[x \pm 1.96*s/(n)^{.5}] * n$, where x is the mean, s is the standard deviation, and n is the sample number.

References

- Axtman, Bruce. 2001. "Getting More from Retail Relationships: Forging Partnerships with Buyers." *Harvester* 37(2):25.
- Cortese, Amy. 2001. "Masters of Innovation." *BusinessWeek* 50, Bonus Issue, March 23, 2001. p. 159.
- Haydu, J. J., J. L. Cisar and L. N. Satterthwaite. 1998. "An Economic and Agronomic Profile of Florida's Turfgrass Sod Industry in 1996." *Economics Report* ER98-7, Food & Resource Economics Department, Institute of Food & Agricultural Sciences, University of Florida. 26 pp.
- Haydu, John J. and Alan W. Hodges. 2000. "Market Expansion Strategies for Turfgrass Producers in the Eastern United States." *Economic Information Report* EI 00-2. Food & Resource Economics Department, Institute of Food & Agricultural Sciences, University of Florida. 29 pp.