

Marketing Opportunities for Perennial Peanut Hay

by

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ABSTRACT

A survey of 3,400 Florida members of the USA Equestrian association was conducted to determine the awareness and use of perennial peanut hay among horse owners in Florida. While perennial peanut hay production and prices have improved during the last 20 years, there remain several significant market barriers to perennial peanut hay's widespread acceptance by Florida's horse industry. Ironically, the availability of this hay is perhaps its biggest impediment to market expansion. Over 50 percent of survey respondents that had tried perennial peanut hay indicated they were unwilling to use it in the future due to pronounced lack of availability. With respect to quality, survey results also revealed a widespread misperception regarding the nutritional value, palatability, and other qualitative aspects of perennial peanut hay. To overcome these roadblocks to market expansion, producers must implement measures to improve and promote the integrity of the perennial peanut hay industry, and to inform hay buyers about the accurate virtues of perennial peanut hay produced with quality control measures. The development and adoption of a widely recognized trade name along with a system of grades and standards will accelerate the realization of this product's genuine market potential.

EXECUTIVE SUMMARY

- The perennial peanut is a warm season legume that produces few nuts, but has foliage and stems that make very high quality hay. It was first introduced into Florida in 1936, but only after the release of several improved varieties in the late 1970s and early 1980s were farmers able to successfully commercialize production. University of Florida agronomists estimate that by the end of the 2001 planting season, perennial peanut production in Florida had expanded to about 23,000 acres.
- Florida is one of the nation's leading states with respect to horse numbers, and the horse industry represents one of the most lucrative markets for high quality legume hay. A 1988 University of Florida study found that only about 10 percent of horse owners in north-central Florida had first-hand experience with perennial peanut hay. Because of the continued growth of perennial peanut hay production and continuing demand for high-quality hay by the Florida horse industry, an updated assessment of the perennial peanut hay market among Florida horse owners was conducted.
- The overall objective of this study was to determine the awareness and use of perennial peanut hay among horse owners in Florida. Specific objectives were to determine the types of hay preferred by horse owners, relative quantities purchased, seasonality of demand and prevailing prices. Other important objectives were to identify barriers to increased consumption of perennial peanut hay and sources of information used by horse owners in deciding what types of hay to buy.
- A questionnaire was mailed to all 3,400 Florida members of USA Equestrian soliciting detailed information on types and quantities of hay fed by season, prices paid, numbers of horses owned, roles of the respondents in decision making with respect to hay purchases, sources of information about hay and activities in the horse industry. Respondents were also asked for basic demographic information such as age, income, and education.
- A total of 549 usable questionnaires were received, for an overall response rate of 17 percent. About 86 percent of the respondents were female, over 62 percent had college degrees, and over 60 percent had household incomes of \$70,000 or more. The average age was 45 years, and on average they had 23 years' experience in the horse industry.
- Approximately 90 percent of all respondents were directly involved with formulating rations for their horses or making decisions about hay purchases.
- The majority of respondents, 60 percent, buy some or all of their hay from retail feed stores. Much smaller percentages buy their hay from hay brokers. About 23 percent buy directly from hay growers with 50 miles of their horse farms, and about 11 percent buy from hay producers located more than 50 miles away.

- Respondents were asked about their satisfaction with the availability of hay from their major suppliers. Only 13 percent were “very satisfied”, but 31 percent were “very dissatisfied”. It appears that there are ample opportunities to improve the level of satisfaction of horse owners by adequately addressing availability issues. More emphasis on developing contractual agreements for future hay delivery could address issues of availability.
- Respondents mentioned a number of sources of information as to where to buy hay. Aside from their own personal experience, their network of friends was a prime source. Hay suppliers and veterinarians were mentioned by 64 and 42 percent of respondents, respectively. Sales representatives of feed retailers, Cooperative Extension agents, horse shows, exhibitions, seminars and horse industry publications were all mentioned by smaller numbers of respondents.
- In deciding what types of hay to buy, respondents mentioned many of the same sources of information as above. However, veterinarians were cited by nearly two-thirds of all respondents. Thus, a veterinarian who is adequately informed as to the attributes of perennial peanut hay can be an important and influential conduit of positive information to horse owners.
- Legume hays constituted about 28 percent of total hay purchases reported by respondents for 2001. Alfalfa represented 19 percent of the total. Perennial peanut had a 5.9 percent market share, and clover 3.0 percent.
- Projecting to the entire USA Equine membership, it is estimated that this group buys 533,000 square bales of legume hay annually. Perennial peanut hay currently has about 20 percent of this legume hay market; an aggressive education and promotional program, coupled with assurances of adequate supplies, could increase perennial peanut hay’s market share.
- Weighted average prices paid by respondents for alfalfa hay were nearly \$9.25 per bale in 2001, compared with about \$7.00 per bale for perennial peanut hay. However, it appears that the price premium enjoyed by alfalfa has been declining relative to perennial peanut hay. If prices reported in a 1988 University of Florida study are adjusted for inflation and compared with the prices reported by respondents for 2001, real (constant) alfalfa prices have declined by about 10 percent, while real perennial peanut hay prices have increased by over 90 percent.
- Respondents that had fed both alfalfa and perennial peanut hay were asked to evaluate nine critical product attributes for each hay type using a rating scale where zero represented “very dissatisfied” and 10 represented “very satisfied”. Attributes evaluated were smell, color, palatability, ease of handling, free of weeds, nutritional value, free of mold/rot, free of insects, and price. Respondents rated alfalfa hay higher on every attribute with the exception of price. All these rating differences were statistically significant at the 0.01 probability level. Price was the only attribute where perennial peanut hay received a superior rating.

- A significant minority of respondents gave perennial peanut hay very low ratings for most attributes. These respondents may have purchased poor quality perennial peanut hay, or may have fed field peanut hay (grown for nuts). In any case, the pervasive perception that perennial peanut hay is inferior poses a significant educational and public relations challenge. On a positive note, ratings by the 40-plus respondents that fed perennial peanut during 2001 were superior to all other types of hays over nearly all seasons of the year.
- Of the 492 respondents responsible for hay selection and purchases, 255 said they had fed perennial peanut hay. However, only 20 percent said they would feed it in the future. The major reason cited was lack of availability, mentioned by nearly 53 percent. Other reasons included “no longer feed legume hay”, appearance, and cost. A few said their horses did not like it, and small numbers said it offered poor nutritional value.
- Fortunately, most of the reasons given for not wanting to feed perennial peanut hay in the future can be overcome with greater perennial peanut hay production and assurance of adequate supplies, perhaps through forward contracting. Quality control measures and market development programs that can serve to educate hay users on the nutritional and palatability merits of perennial peanut hay can also pay dividends.
- There is also a pressing need for dissemination of factual information about perennial peanut hay to the horse industry. An investment in a proactive educational and promotional program aimed directly at horse owners and indirectly at individuals such as veterinarians and Cooperative Extension agents is recommended. Nearly 93 percent of respondents have Internet access, which suggests that a professionally developed Internet website would be a valuable product information dissemination tool.
- The Perennial Peanut Producers Association is in a unique position to develop and implement measures to improve and promote the integrity of the perennial peanut hay industry, and to inform hay buyers about the true merits of perennial peanut hay when quality control measures are in place. The development and adoption of widely recognized trade name along with a system of grades and standards will accelerate the realization of this product’s true market potential.

INTRODUCTION

The perennial peanut, (*Arachis glabrata* Benth.) is a warm season legume that was first introduced into Florida from Brazil in 1936 (French, et. al., 1998). It differs from the common peanut in that it produces few nuts and its leaves and stems produce a very high quality legume forage and hay. Its deep root system assures perennial production in the absence of severe freezes. When grazed, it does not cause bloating like most other legumes, and perennial peanut hay is very similar to alfalfa hay in nutritional characteristics. Palatability studies have shown that most livestock prefer it to alfalfa; one prominent horse breeder called it the “ice cream sundae of hay”, stating: “Horses will leave alfalfa to eat (perennial) peanut hay. Anytime it’s an either-or feeding situation, they go for the peanut” (Martin, 1998; Lieb, et. al. 1992).

Although its potential as a forage and hay crop was explored for many years, it was only after the release of the ‘Florigraze’ variety in 1979 and the ‘Arbrook’ variety in 1986 that commercial production began to accelerate. Continuing economic problems with traditional row crops such as corn and soybeans, united with strong demand for high quality legume hay, has continued to fuel the growth of the perennial peanut hay industry in Florida. While net returns to traditional row crops have been low, and sometimes negative, economic returns to perennial peanut hay producers have generally been good in recent years. Depending on prices and yields, returns have frequently amounted to several hundred dollars per acre (French, Prine and Blount, 2001; Hewitt and Olsen, 1997). As a result, acreage of perennial peanut hay has continued to expand. At the conclusion of the 2001 planting season, Prine and Blount estimated that 23,000 acres of perennial peanut hay acreage were being grown in Florida, compared with only 17,000 acres at the end of the 1997 planting season. This continued growth in acreage makes it imperative that growers identify viable market development strategies to assure long-term profitability.

Horse owners in Florida represent the pre-eminent and most lucrative market for high-quality hay. The Florida Department of Agriculture and Consumer Services estimated that there were approximately 300,000 horses and ponies in the state in 2000. While exact numbers are unknown, there are large numbers of purebred, performance, show, and breeding horses whose owners demand the best quality hay.

In the late 1980s, researchers at the University of Florida conducted a limited study to determine the status of the perennial peanut hay market among horse owners in the north-central part of the state. At that time, nearly 90 percent of the horse owners surveyed had no experience with perennial peanut hay. While there was a strong preference for high-quality alfalfa hay, few horse owners expressed negative reactions to trying perennial peanut hay (Degner and Locascio, 1988). Because of the continued growth of perennial peanut hay production and ongoing demand for high-quality hay by the Florida horse industry, it is important to obtain an updated assessment of the perennial peanut market among Florida horse owners.

OBJECTIVES

The basic objective of this study was to determine the extent of awareness and use of perennial peanut hay among horse owners in Florida. This is similar to the objective of

the 1988 study conducted by Degner and Locascio. While the scope of the 1988 study was limited to north-central Florida, the current study was expanded to include horse owners and others active in the horse industry throughout the state.

Specific objectives of the current study were to (1) determine the varieties of hay preferred by the Florida horse industry, including the relative quantities purchased and prices paid; (2) determine current levels of consumer satisfaction with various quality attributes of alfalfa and perennial peanut hays; (3) determine the seasonality of demand for various types of hay; (4) identify major barriers to greater use of perennial peanut hay and (5) identify sources of information used by the horse industry in deciding what type of hay to buy. This information can be utilized to assist in developing an appropriate educational program for perennial peanut hay.

PROCEDURE

In order to reach a broad spectrum of individuals involved with the horse industry in Florida, a membership list of all Florida members of USA Equestrian, Inc. was purchased in order to conduct a mail survey. This organization is also known as the National Equestrian Federation of the United States, and until 2001 was known as the American Horse Shows Association. Members of USA Equestrian represent an extremely diverse array of horse owners, trainers and competitors. The organization recognizes 26 breeds and includes both English and Western riders. Nationally, USA Equestrian has over 80,000 members, with over 3,400 in Florida.

After meeting with perennial peanut producers, a questionnaire was developed and pre-tested with several horse owners. Following approval by the University of Florida's Institutional Review Board, questionnaires were mailed in October 2002 via the U.S. Postal Service to all 3,409 USA Equestrian members residing in Florida. Approximately 10 days after the initial mailing, a reminder postcard was sent to non-respondents. Only 24 of the initial 3,409 questionnaires were undeliverable. After deducting undeliverable and ineligible responses, the final response rate was 17 percent (Table 1).

Because the survey was conducted before the end of 2002, the questionnaire sought purchase data from 2001 on alfalfa, perennial peanut, clover, and other major types of hay commonly fed by the Florida horse industry. In addition to hay purchase data, respondents were asked to evaluate specific characteristics of perennial peanut hay and alfalfa, its major competitor. Respondents were also asked for basic demographic information and other descriptive data to confirm their roles in deciding what kinds of hay to buy and their sources of information on matters concerning ration formulation and hay characteristics. A copy of the questionnaire is found in Appendix A. Data from the eligible respondents were carefully checked for consistency and coded for computer analyses.

Horse Industry Survey
Table 1. Disposition of Mailed Questionnaires and Response Rates.

Description of items mailed and returned	Number	Percent ^b
	----N----	----%----
Total questionnaires mailed	3,409	100.0
Undeliverable	24	0.7
Total questionnaires delivered	3,385	99.3
Questionnaires returned	576	100.0
Ineligible respondents ^a	27	4.7
Usable questionnaires	549	95.3
Estimated number of eligible respondents	3226	100.0
Adjusted response rate	-----	17.0
Number of respondents involved in hay purchase decisions	492	89.6 ^b
Projected number of Florida USA Equestrian members making hay purchasing decisions	2,891	-----

^a Ineligible respondents included those no longer active in the horse industry and respondents under 18 years of age.

^b Percentage is based upon 549 usable observations.

FINDINGS

Demographics

Demographics of the respondents corresponded very closely with those published by USA Equestrian, providing some assurance that the sample is representative of the organization's overall membership. For example, 86.2 percent of the returned questionnaires were from women, and according to USA Equestrian, 85 percent of their members are female. Also, 62.4 percent of the responses were from individuals that had a minimum of a college degree, compared with 58 percent of the USA Equestrian membership (Appendix Table B-1). Further, household incomes reported by respondents were very high, with over 60 percent reporting incomes of \$70,000 or more; while income distributions were not available from USA Equestrian, Inc., they reported that their members had an average household income of \$134,000 in 2000 (Appendix Table B-2). The average age of all respondents was 45 years, and on average, they had 23 years' experience in the horse industry. A high incidence of Internet accessibility was

reported, with nearly 93 percent of respondents able to surf online at home or at work (Appendix Table B-3).

Respondent's Roles in the Horse Industry

Because the focus of this study was on decision making with respect to hay products, particularly perennial peanut hay, respondents were asked to what extent they made decisions about what their animals were fed and/or hay purchases. Nearly 90 percent of those responding were directly involved in one of these activities. Only 10 percent did not make decisions regarding feed rations or hay purchases. Unless otherwise noted, the analyses that follow are based on the 492 respondents that make feed ration or hay purchasing decisions (Table 2).

Table 2. Ration Formulation and Hay Purchasing Activities by Survey Respondents. ^a

Activity	Number	Percent ^b
	---N---	---%---
Ration formulation	419	76.3
Hay purchasing	470	85.6
Both ration formulation and hay purchasing	492	89.6
Neither ration formulation nor hay purchasing	57	10.4

^a Percentages are based upon a total of 549 respondents.

^b Total does not sum to 100.0 % because of multiple responses.

Over 400 of the 492 respondents (82.9 percent) were horse owners (Table 3). The average respondent owned nine horses or ponies, although there was considerable variability in the number of horses owned. About 70 percent of all respondents owned nine or less, while some horse farms reported owning large numbers (Appendix Table B-4). About one-third of the respondents indicated that they were horse farm managers or operators, and a similar number said they were trainers. Ten respondents, approximately 2 percent, were veterinarians (Table 3). Over half, 52 percent, said their horse-related activities were classified as businesses for tax purposes.

While respondents reported a wide array of activities within the horse industry, a very high percentage, nearly 90 percent, engaged in competitive events of various kinds (Table 4). Other popular activities were horse training (71 percent) and non-competitive pleasure riding (nearly 57 percent). Only seven respondents, just over 1 percent, provide rental horses. Other miscellaneous activities included operating breeding farms, horse sales, boarding, riding lessons, therapeutic riding, etc. (Table 4).

Horse Industry Survey
Table 3. Respondents' Affiliation with the Horse Industry. ^a

Affiliation	Number	Percent ^b
	----N----	----%----
Horse owner	408	82.9
Horse farm manager/operator	166	33.7
Horse trainer	162	32.9
Veterinarian	10	2.0

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

^b Total does not sum to 100.0 % because of multiple responses.

Table 4. Respondents' Participation in Activities within the Horse Industry. ^a

Activities	Number	Percent ^b
	----N----	----%----
Competitive Events	432	87.8
Horse training	350	71.1
Pleasure (Non-Competitive)	280	56.9
Rental riding	7	1.4
Other ^c	138	28.1

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

^b Total does not sum to 100.0 % because of multiple responses.

^c Other activities include breeding farm operations, sales, boarding, lessons, therapeutic riding, etc.

Sources of Hay, Satisfaction with Availability, Contracting, and Use of Delivery Services

The majority of respondents, 60 percent, buy some or all of their hay from retail feed stores (Table 5). About 30 percent rely on hay brokers within 50 miles, and about 17 percent patronize hay brokers located further than 50 miles from their horse farms. Nearly one-fourth buy directly from hay farmers within 50 miles, and another 10 percent buy directly from farmers located more than 50 miles away. Limited numbers buy from miscellaneous sources such as vendors at horse shows and a few grow their own hay (Table 5).

Respondents were asked a general question about their satisfaction with the availability of hay from their major suppliers. Only 13 percent were "very satisfied". Fifty-three percent of respondents indicated that they were "somewhat satisfied". Although only less than 3 percent of all respondents said they were "somewhat dissatisfied", 148 or 31 percent of respondents were "very dissatisfied" with the availability of hay from their suppliers (Table 6). Thus, there appear to be ample

opportunities to improve the level of satisfaction of horse owners by adequately addressing availability issues.

Table 5. Sources of Hay, 2001.

Source	Number	Percent ^a
	---N---	---%---
Feed Store	296	60.2
Hay broker, within 50 miles	146	29.7
Growers, within 50 miles	111	22.6
Hay broker, beyond 50 miles	83	16.9
Growers, beyond 50 miles	53	10.8
Other Sources ^b	27	5.5

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

^b Other sources includes people that grow their own hay, horse shows, etc.

Table 6. Reported Satisfaction with Availability of Hay from 2001 Suppliers. ^a

Satisfaction Rating	Number	Percent
	---N---	---%---
Very Satisfied	63	13.3
Somewhat Satisfied	525	53.1
Somewhat Dissatisfied	12	2.5
Very Dissatisfied	148	31.2

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

Some availability problems could be overcome by forward contracting. About 22 percent of respondents said they contracted ahead of time for some or all of their hay supplies. About three-fourths of respondents did not contract any hay in 2001, but nearly one-fourth of respondents indicated that they would prefer to contract their hay supplies in the future (Table 7).

Almost 40 percent of respondents have all of their hay delivered and stacked, and about 35 percent have some of it delivered and stacked (Table 8). About 60 percent pick up some or all of their hay requirements. The large number of horse owners that have hay delivered and stacked points to their desire for and willingness to pay for this service. Delivery and stacking, particularly for larger customers, might prove to be a profitable value-added service. However, delivery and stacking costs should be analyzed very carefully to make sure that all costs are covered and a reasonable net return realized.

Horse Industry Survey
Table 7. Respondents' Interest in Contracting for Hay Supply in Advance of Actual Delivery. ^a

Contracting	Number	Percent
	---N---	---%---
Contracted in 2001	108	21.9
Did not contract in 2001	362	73.6
Prefer to contract in future	90	24.9
Would not prefer to contract in future	227	62.7

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

Table 8. Number of Respondents That Pick Up Own Hay and/or Have Hay Delivered and Stacked.

Pick Up and/or Delivered and Stacked	Number	Percent ^a
	---N---	---%---
Some or all hay is picked up	292	59.4
All hay is delivered and stacked	187	38.0
Some hay is delivered and stacked	358	72.8

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases. Total does not sum to 100.0 % because of multiple responses.

Sources of Information for Locating Hay Vendors

Most respondents cited multiple sources of information for locating hay suppliers. Nearly 90 percent said they relied on “personal experience”, apparently gained through years of trial and error. Almost two-thirds mentioned their network of friends as an important source of information on where to buy hay, and over 40 percent said that contacts with hay suppliers provided them with information (Table 9). Veterinarians were mentioned as information sources by nearly one in five respondents. Other sources of information on where to buy hay included sales representatives, the Cooperative Extension Service, horse shows, exhibitions, seminars, and horse industry publications. A few respondents mentioned Internet websites and direct mail (Table 9).

Table 9. Sources of Information Used by Hay Buyers in Deciding Where to Buy Hay.

Source	Number of Respondents	Percent of Total ^a
	----N----	----%----
Personal Experience	439	89.2
Friends	313	63.6
Hay Suppliers	209	42.5
Veterinarian	94	19.1
Sales Representatives	30	6.1
Agricultural Extension Service	29	5.9
Shows, Exhibitions or Seminars	26	5.3
Horse Industry Magazines/Publications	17	3.5
Internet Websites	7	1.4
Direct Mail	5	1.0
Other Sources ^b	5	1.0

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

^b Miscellaneous sources include horse industry professionals (i.e. trainers, farriers), flyers, and newspapers.

Sources of Information on What Types of Hay to Buy

Many of the sources of information that help horse owners decide where to buy hay also aid in their decisions as to what types of hay to buy. Again, personal experience was the leading source, mentioned by nearly 92 percent of all respondents (Table 10). Nearly two-thirds cited their veterinarians as sources of information on the types of hay to feed, and half mentioned advice from their friends. Almost a third said they had received information from hay suppliers such as feed stores that influenced their decisions on hay types, and about 30 percent mentioned horse industry magazines and other publications. About one in five said they had received information on hay types from the Cooperative Extension Service, and about 16 percent cited shows, exhibitions and seminars. Sales representatives, Internet websites, and direct mail were also mentioned by smaller numbers of respondents (Table 10).

Horse Industry Survey
Table 10. Sources of Information Used by Hay Buyers in Deciding What Kinds of Hay to Buy.

Source	Number of Respondents ---N---	Percent of Total ^a ----%----
Personal Experience	452	91.9
Veterinarian	317	64.4
Friends	247	50.2
Hay Suppliers	161	32.7
Horse Industry Magazines/Publications	146	29.7
Agricultural Extension Service	86	17.5
Shows, Exhibitions or Seminars	81	16.5
Sales Representatives	32	6.5
Internet Websites	23	4.7
Direct Mail	9	1.8
Other Sources ^b	5	1.0

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

^b Miscellaneous sources include horse industry professionals (i.e. trainers, farriers, spouses).

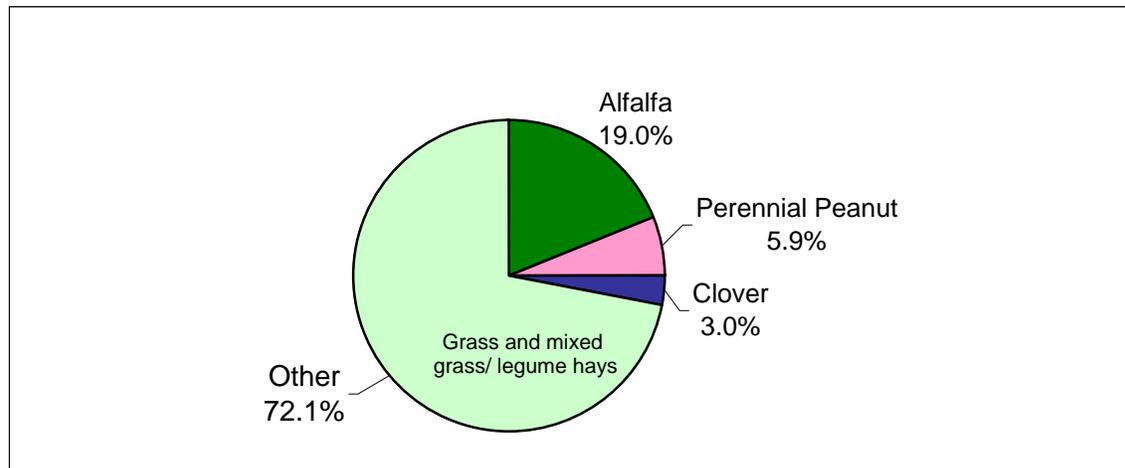
Hay Purchases
Types of hay bought

A wide variety of hay types were purchased by decision-making respondents. In total, these respondents reported purchasing nearly 325,000 bales (55 pound square bale equivalents) in 2001. Over 72 percent (233,980 bales) of reported hay purchases were grass or grass-legume mix types. The remaining 28 percent of hay purchases (90,724) were pure legume types (alfalfa, perennial peanut and clover). Of the legume hays, alfalfa accounted for 61,592 bales (68 percent of legume purchases and 19 percent of total hay purchases), perennial peanut hay accounted for 19,288 bales (21 percent of legume purchases and 5.9 percent of all hay purchases) and clover 9,844 bales (11 percent of legume and 3 percent of all hay purchases). Non-legume or “other” hay purchases were comprised primarily of Coastal Bermuda, Pensacola Bahia, Timothy/alfalfa mixes, etc. (Table 11, Figure 1).

Table 11. Importance of Selected Hay Types as Reported by Survey Respondents, Overall and by Season.

Season	Alfalfa		Perennial Peanut		Clover		Other Hay ^a		All Hay	
	#bales	(%)	#bales	(%)	#bales	(%)	#bales	(%)	#bales	(%)
Winter	17,482	28.4	7,494	38.9	2,632	26.7	60,720	25.9	88,328	27.2
Spring	15,152	24.6	3,825	19.8	2,738	27.8	56,040	23.9	77,755	23.9
Summer	13,740	22.3	3,460	17.9	2,122	21.6	52,762	22.6	72,084	22.2
Fall	15,218	24.7	4,509	23.4	2,352	23.9	64,458	27.6	86,537	26.7
Total Annual	61,592	100.0	19,288	100.0	9,844	100.0	233,980	100.0	324,704	100.0

^a Other hay types include all grass hays and alfalfa/grass hay mixes, i.e. Coastal Bermuda, Pensacola Bahia, Timothy/Alfalfa mix, etc.

Figure 1. Reported 2001 Annual Hay Consumption by Selected Hay Type.


Hay consumption was also analyzed on a per horse basis for each of the types of hay purchased. The 447 respondents who reported purchasing any type of hay in 2001 (324,704 bales) also reported that they owned a total of 4,218 horses (Table 12). Hay consumption per horse by hay-type was calculated by dividing total purchases of each type of hay by the total number of horses owned by purchasers of that hay type. Respondents that reported purchasing a total of 233,980 bales of “other” type hay also reported owning 3,378 horses. This represents just over 69 bales of “other” type hay consumed per horse (Table 12). Respondents who reported purchasing alfalfa hay fed it to 2,219 horses (52.6 percent of the horses owned by these 447 respondents). These horses consumed nearly 28 bales of alfalfa hay each during the year (Table 12). A total of 505 horses (12 percent of the horses owned by these 447 respondents) were fed perennial peanut hay, and they consumed an average of about 38 bales per horse. Only 259 horses (6 percent of the horses owned by the 447 respondents) received clover hay, consuming about 38 pounds each.

Horse Industry Survey
Table 12. Total and Average Annual Hay Purchased in 2001 and Consumed by Horses Owned.

Season	Number of Horses	Percent of All Horses ^a	Total Hay Purchased in 2001	Average Annual Consumption per Horse in 2001
	---N---	---%---	---55 lb. bales---	---55 lb. bales--
Other Hay ^b	3,378	80.1	233,980	69.3
Alfalfa	2,219	52.6	61,592	27.8
Perennial Peanut	505	12.0	19,288	38.2
Clover	259	6.1	9,844	38.0
All Hay	4218	----	324,704	77.0

^a Percentages are based upon 4218 horses owned by 447 respondents that reported actual 2001 hay purchases.

^b Other hay types include all grass hays and alfalfa/grass hay mixes, i.e. Coastal Bermuda, Pensacola Bahia, Timothy/Alfalfa mix, etc.

Projecting the quantities reported by survey respondents to the entire membership of USA Equestrian in Florida results in total hay purchases by this 3,400 member group of about 1.9 million bales. Alfalfa hay purchases amount to about 362,000 bales, perennial peanut hay to 113,336 bales, and clover to just under 59,000 bales. The “other” hay category was estimated at nearly 1.4 million bales (Table 13). The combined quantity of the three legume hays, i.e., alfalfa, perennial peanut and clover, was estimated at 533,000 bales; this gives perennial peanut a legume-hay market share of just over 20 percent. Clearly, there is room in this market to increase sales of perennial peanut hay. An effective education and promotional campaign coupled with a reliable production and distribution program could make significant gains in market share for this hay.

Table 13. Projected Consumption of Selected Hay Types by Florida USA Equestrian Members, Overall and by Season.

Season	Alfalfa	Perennial Peanut	Clover	Other Hay ^a	All Hay
	# bales	# bales	# bales	# bales	# bales
Winter	102,722	44,035	15,466	356,792	519,014
Spring	89,031	22,476	16,089	329,292	456,887
Summer	80,739	20,331	12,469	310,027	423,567
Fall	89,418	26,495	13,820	378,753	508,487
Total Annual	361,910	113,337	57,844	1,374,864	1,907,954

^a Other hay types include all grass hays and alfalfa/grass hay mixes, i.e. Coastal Bermuda, Pensacola Bahia, Timothy/Alfalfa mix, etc.

Seasonality of hay consumption

As expected, the highest hay consumption period was during the winter season, closely followed by the fall months. Summer was the lowest consumption period, with spring the next lowest (Table 11, Figure 2). Alfalfa showed this same general seasonal pattern, but to a noticeably lesser degree. Perennial peanut hay consumption, however, showed a much more pronounced seasonality pattern than any of the other hay types. One explanation is the fact that an overwhelming majority of respondents who purchased perennial peanut hay in 2001 were located in north and north-central Florida. The annual growing season in north Florida is considerably shorter than in the southern half of the state, where many of the alfalfa buyers were located (Figure 3). The shorter growing season of fresh pasture probably necessitates earlier supplemental feeding in the fall and winter months. Detailed seasonal purchases of specific hay types, i.e., alfalfa, perennial peanut, clover, and “other” are found in Appendix Tables B-5 through B-8.

Horse Industry Survey

Figure 2. Importance of Selected Hay Types by Season , Florida Horse Industry Survey Respondents.

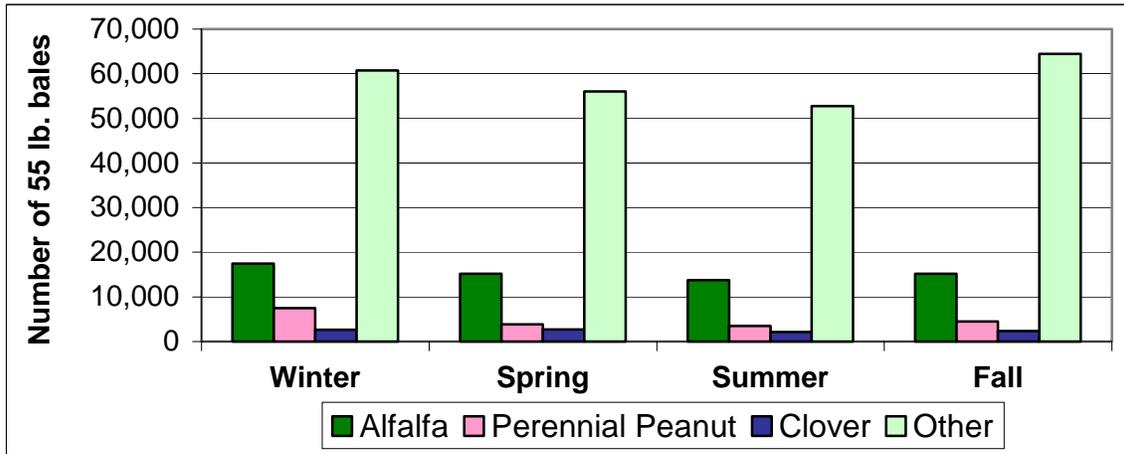
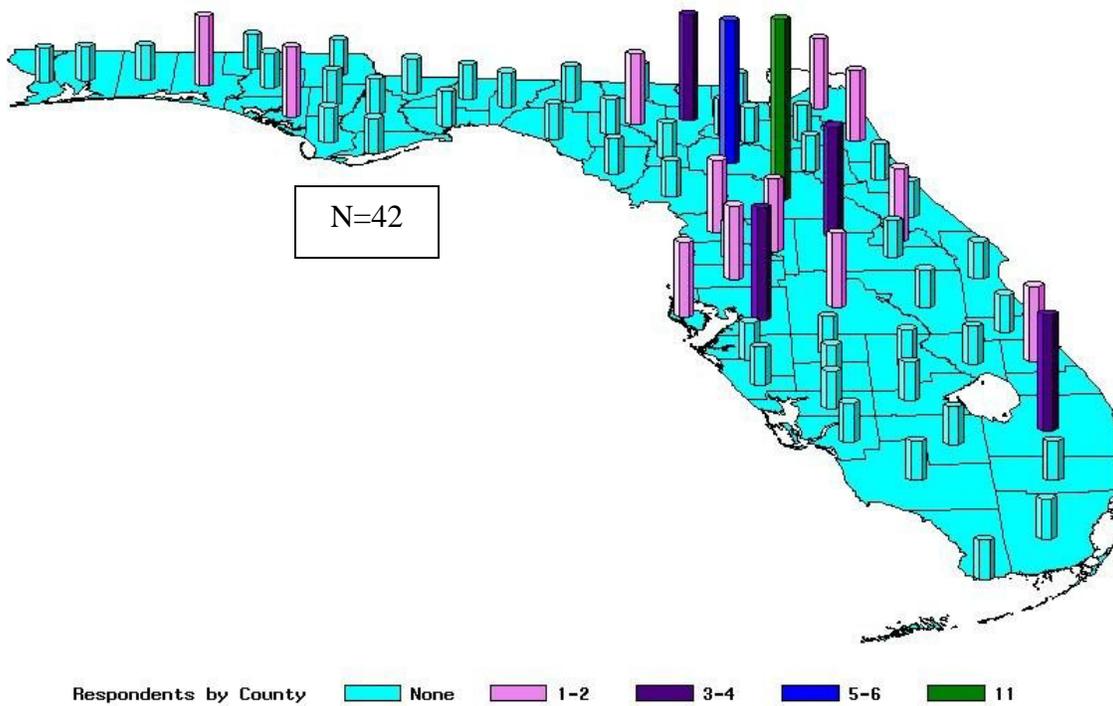


Figure 3. Number of Perennial Peanut Hay Buyers in Respondent Sample, by Florida County, 2001.



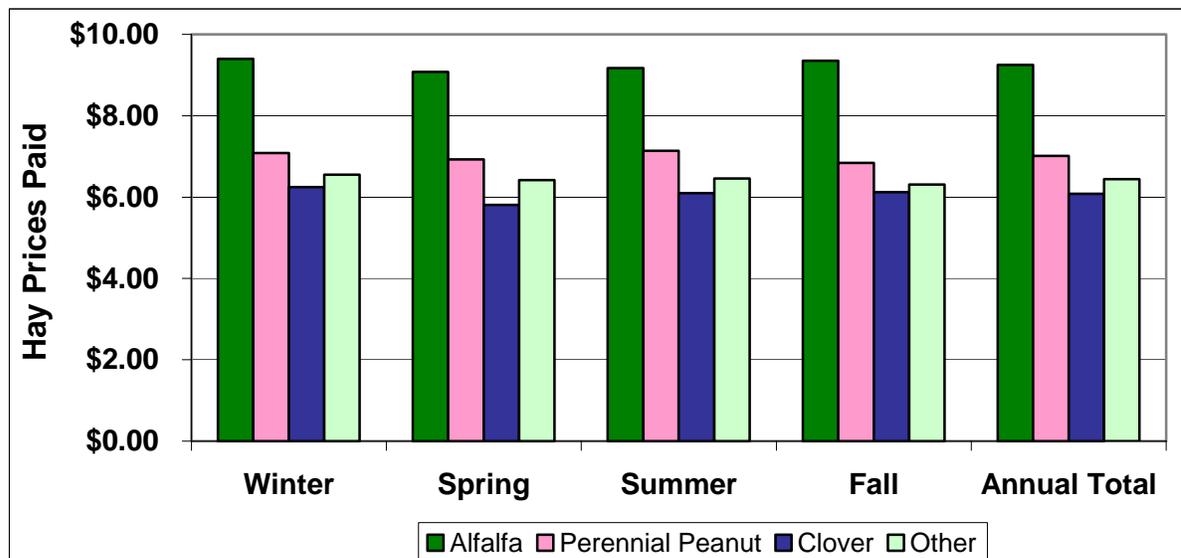
Prices Paid for Selected Hay Types

Prices paid by individual respondents for various types of hay were extremely variable because of a wide range of quality differences, sources (i.e., direct from growers vs. retail feed stores), geographic location in the state, quantities purchased, and services rendered, (i.e., delivered and stacked vs. picked up). For example, the reported prices paid for alfalfa ranged from \$5.00 per bale to \$24.00. The price range for perennial peanut hay was \$4.50 to \$10.00, and for clover \$3.00 to \$15.99. Prices paid for “other” hay ranged from \$1.18 to \$18.00.

Whenever prices paid are weighted by quantities purchased, a much more realistic picture emerges. Weighted average prices for alfalfa ranged from a low of \$9.08 per 55-pound bale in the spring to a high of \$9.40 in the winter. The weighted average price for alfalfa for the year (2001) was \$9.24 (Table 14, Figure 4).

Table 14. Weighted Average Prices Paid for Selected Hay Types, by 2001 Season.

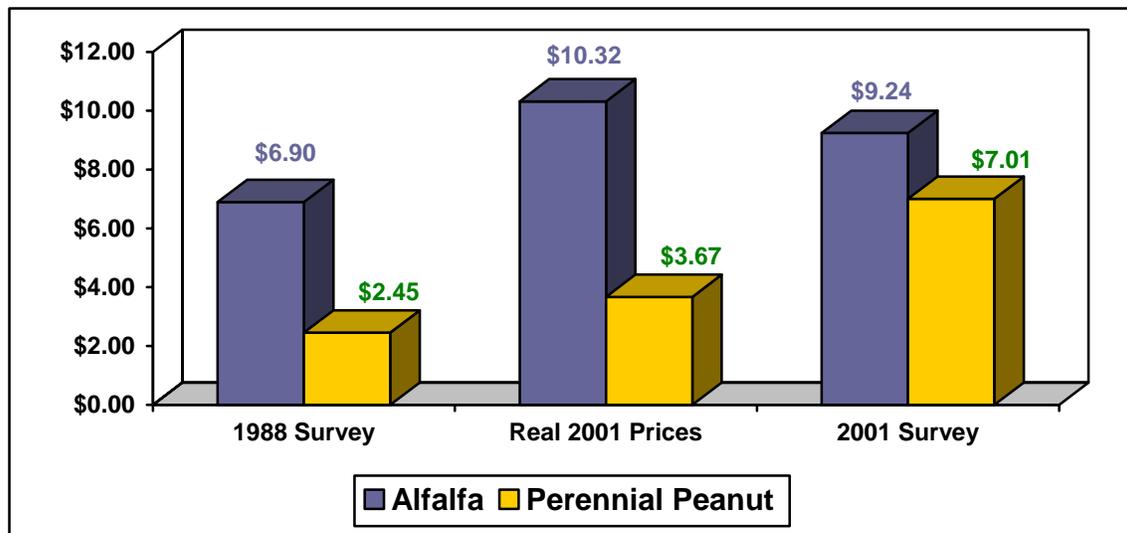
Season	Alfalfa	Perennial Peanut	Clover	Other
-----Dollars (\$) per bale-----				
Winter	\$9.40	\$7.08	\$6.25	\$6.55
Spring	9.08	6.93	5.81	6.42
Summer	9.17	7.14	6.10	6.46
Fall	9.35	6.84	6.12	6.31
Annual Total	9.25	7.01	6.08	6.44

Figure 4. Weighted Average Prices Paid for Selected Hay Types, by 2001 Season.


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Perennial peanut hay prices exhibited slightly different seasonal patterns, with a low weighted average price of \$6.84 reported for the fall, and a high price of \$7.08 in the winter. The annual weighted average price of perennial peanut hay was \$7.01 per bale (Table 14). When prices reported for alfalfa and perennial peanut hay by horse owners in Degner and Locascio’s 1988 study are adjusted for inflation and compared with the prices paid in 2001 for these two types of hay, it appears that real prices for alfalfa have fallen from \$10.32 per bale to \$9.24, a decline of 10.5 percent, while real prices for perennial peanut hay have risen from \$3.67 to \$7.01, an increase of about 91 percent (Figure 5). Even though the 2001 weighted average price for perennial peanut hay was still \$2.23 per bale below that of alfalfa, the changes in the relative prices of these two hay types are a good indication that hay buyers are beginning to acknowledge the value of perennial peanut hay.

Figure 5. Comparison of Reported Prices for Perennial Peanut Hay, 1988 and 2001.



Respondents’ Evaluations of Alfalfa and Perennial Peanut Hay

Respondents that had fed both alfalfa and perennial peanut hay were asked to evaluate the two types of hay with respect to nine important characteristics using a zero to 10 rating scale where zero represented “very dissatisfied” and 10 “very satisfied”. The characteristics evaluated were smell, color, palatability, ease of handling, purity (free of weeds), nutritional value, free of mold or rot, free of insects, and acceptability of price. These product attributes were rated by 90 to 101 respondents who had fed both types of hay. Rating differences were evaluated using paired t-tests to determine if they were statistically significant (Table 15).

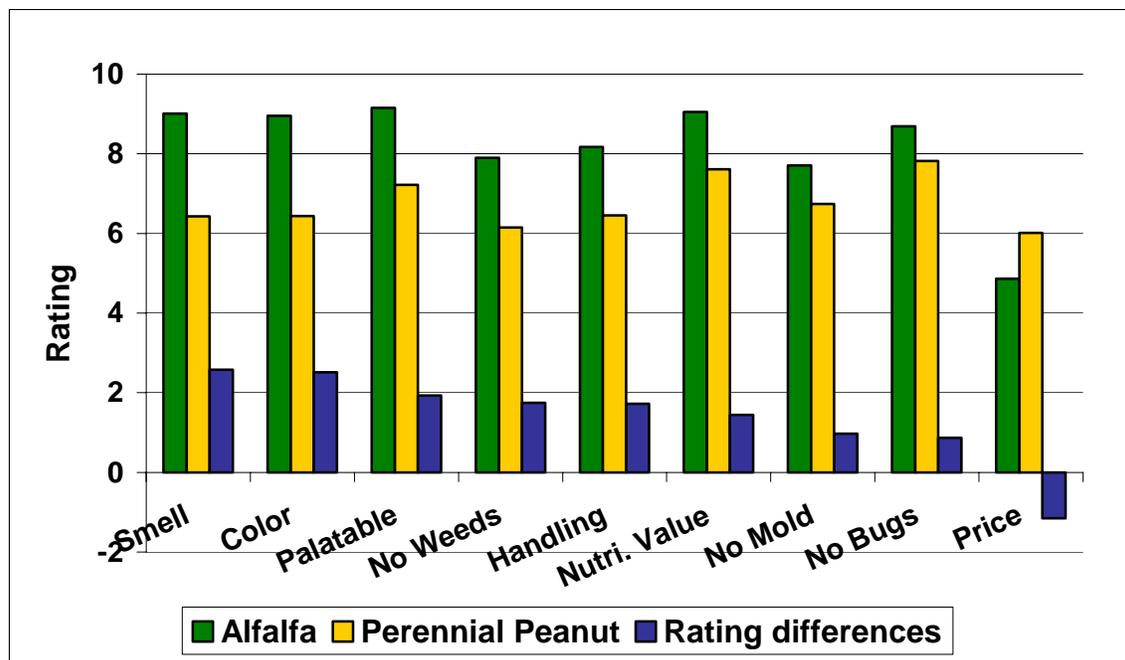
Respondents rated alfalfa hay higher for every attribute examined with the exception of price. All these rating differences were statistically significant at the 0.01 percent probability level. Positive rating differences of alfalfa over perennial peanut hay ranged from 2.58 rating points for smell to 0.87 for freedom from insects. However, respondents rated the acceptability of perennial peanut hay prices 1.15 points higher than

Table 15. Respondents Who Have Fed Both Alfalfa and Perennial Peanut Hay: Perceived Differences in Selected Attributes of Alfalfa and Perennial Peanut Hay.

Attribute	Number of paired respondents	Mean Ratings ^a		
		Alfalfa	Perennial Peanut	Rating differences ^b
	N	(-----0 = very dissatisfied, 10 = very satisfied-----)		
Smell	97	9.0	6.4	2.6
Color	96	9.0	6.4	2.4
Palatability	101	9.2	7.2	2.0
Ease of Handling	98	7.9	6.2	1.7
Free of Weeds	95	8.2	6.5	1.7
Nutritional Value	97	9.1	7.6	1.5
Free of Mold/Rot	96	7.7	6.7	1.0
Free of Insects	90	8.7	7.8	0.9
Price	97	4.9	6.0	-1.1

^a Attributes were rated on a scale where 10 = Very satisfied and 0 = Very dissatisfied.

^b Ratings for perennial peanut hay were subtracted from alfalfa ratings. A paired-t was used to determine if differences in ratings were statistically significant. All ratings differences were statistically significant at the 0.01 probability level.

Figure 6. Respondents Who Have Fed Both Alfalfa and Perennial Peanut Hay: Perceived Differences in Selected Attributes of Alfalfa and Perennial Peanut Hay.


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that for alfalfa. This rating difference was also statistically significant at the 0.01 probability level (Table 15, Figure 6).

From the perspective of perennial peanut hay producers, it is disappointing and difficult to accept the superiority of the alfalfa ratings, especially on several product attributes where there is not only anecdotal evidence but quantitative analyses that show perennial peanut hay to be equivalent or even superior to alfalfa. Specifically, these attributes are palatability and nutritional qualities. One can argue that if definitive studies have shown that horses prefer perennial peanut hay to alfalfa and that the nutritional qualities are equivalent, then humans' evaluations of smell and color are irrelevant. However, hay buyers' perception is reality, and they make the purchase decisions.

Some of the 90 to 101 respondents that rated the nine product attributes may have had bad experiences with perennial peanut hay, or perhaps they fed too little of it to be able to make an objective appraisal. Another possibility is that some respondents may have fed field peanut hay (grown for nuts) and confused this type of peanut hay with perennial peanut hay. In any event, the pervasive perception by relatively large numbers of horse hay buyers that perennial peanut hay is inferior to alfalfa hay poses a significant educational and public relations challenge.

On a positive note, respondents that had fed perennial peanut hay in 2001 (about 40 respondents) were asked to rate their overall satisfaction with it for each of the seasons that they had fed it. They used the same rating scale where 0 represented "very dissatisfied" and 10 represented "very satisfied". These respondents rated perennial peanut hay very high; the average ratings ranged from 9.49 in the winter to 8.42 in the fall. Except for the fall season, these ratings surpassed ratings for alfalfa, clover and "other" hay types fed by respondents in 2001 (Table 16).

Table 16. Weighted Average Satisfaction Ratings for Selected Hay Types, by Season. ^a

Season	Alfalfa	Perennial Peanut	Clover	Other
	(----- 0 = very dissatisfied, 10 = very satisfied -----)			
Winter	8.40	9.49	8.46	7.51
Spring	8.53	8.63	8.30	7.65
Summer	8.58	8.85	7.66	7.80
Fall	8.51	8.42	8.29	7.75

^a Satisfaction rating scale of 0 to 10 was defined as 0 = very dissatisfied, 10 = very satisfied. Individual ratings were weighted by total bales of hay purchased of each hay type.

Future Purchase Plans for Alfalfa

Of the 492 respondents with hay selection or purchasing responsibilities, 417 (nearly 85 percent) indicated that they had bought alfalfa hay in the past. Of those that had bought alfalfa, 246 or 59 percent said they would continue to feed it in the future (Table 17). The major reasons cited were "good nutritional value", "horses like taste" and the fact that it was readily available, mentioned by about 87 percent, 68 percent, and

42 percent, respectively (Table 18, Figure 7). Good appearance was given as a reason for continuing to feed alfalfa by about 30 percent, and good prices were mentioned by 17 percent.

Forty-one percent of the 417 respondents that had fed alfalfa said they would not feed it in the future (Table 19). Over half, nearly 53 percent, said it was too expensive, and almost half said that they no longer feed legume hay to their horses (Table 19, Figure 8). About 12 percent said alfalfa was not readily available in their locales, and just over 10 percent said that the alfalfa available to them did not look very good. A few respondents felt that alfalfa offered poor nutritional value, and one said it was unpalatable to her horses (Table 19).

Only 75 of the 492 respondents (15 percent) had not fed alfalfa in the past (Table 20). Of these 75, only 8 percent indicated that they would definitely feed it in the future, and an additional 16 percent said they might feed it in the future. Over half said they definitely would NOT feed alfalfa in the future (Table 20).

Table 17. Respondents' That Have Fed, and Future Willingness to Continue to Feed, Alfalfa and Perennial Peanut Hay.

Hay	Alfalfa ^b		Perennial Peanut ^b	
	---N---	---%---	---N---	---%---
Will continue to feed	246	59.0	51	20.0
Will NOT continue to feed	171	41.0	204	80.0
Have fed ^a	417	84.8	255	51.8

^a Percentages are based upon 492 respondents.

^b Percentages for alfalfa and perennial peanut are based upon 417 and 255 observations, respectively.

Table 18. Reasons That 246 Alfalfa Purchasers **WILL** Continue to Feed Alfalfa Hay.

Reasons	Number	Percent ^a
	----N----	----%----
Good nutritional value	214	86.9
Horses like taste	168	68.3
Available	103	41.9
Appearance	72	29.3
Need legume hay	60	24.4
Good price	42	17.1

^a Percentages are based upon 246 respondents that indicated they have fed, and will continue to feed, alfalfa hay.

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 Table 19. Reasons That 171 Alfalfa Purchasers **WILL NOT** Continue to Feed Alfalfa Hay.

Reasons	Number		Percent ^a	
	---N---	---	---%---	---
Too expensive	90		52.6	
Do not feed legume hay	84		49.1	
Not available	20		11.7	
Poor appearance	18		10.5	
Poor nutritional value	6		3.5	
Horses dislike taste	1		0.6	

^a Percentages are based upon 171 respondents that indicated they have fed, and will NOT continue to feed, alfalfa hay.

 Table 20. Respondents That Have **NOT** Fed, and Future Willingness to Feed, Selected Hay.

Hay	Alfalfa ^b		Perennial Peanut ^b	
	---N---	---%---	---N---	---%---
Will feed	6	8.0	37	15.6
Will NOT feed	39	52.0	51	21.5
May feed	12	16.0	124	52.3
No response	18	24.0	25	10.6
Have NOT fed ^a	75	15.2	237	48.2

^a Percentages are based upon 492 respondents.

^b Percentages for alfalfa and perennial peanut are based upon 75 and 237 observations, respectively.

Future Purchase Plans for Perennial Peanut Hay

Of the 492 respondents responsible for hay selection and purchases, 255 said they had fed perennial peanut hay. However, only 20 percent said they would continue to feed it in the future (Table 17). Major reasons given for continuing to feed it were: “good nutritional value” (80 percent), “horses like taste” (about 71 percent), readily available (61 percent) and “good prices” (53 percent). About 39 percent said they would continue to feed perennial peanut hay because they needed legume hay, and about 31 percent would continue feeding it because of its appearance (Table 21, Figure 7).

Of the 255 respondents that had fed perennial peanut hay in the past, 204 or 80 percent said they would NOT feed it in the future (Table 17). The major reason given for not continuing to feed perennial peanut hay was lack of availability, mentioned by nearly 53 percent of the 204 respondents (Table 22). Other reasons given were that they no longer feed legume hay (18 percent), poor appearance (13 percent), and too expensive

(10 percent). About 10 percent of these respondents also said that their horses disliked the taste, and about 6 percent felt that perennial peanut hay offered poor nutritional value (Table 22, Figure 8). Fortunately for the perennial peanut hay industry, most of these obstacles can be overcome with a larger production base, assurance of adequate supplies (perhaps through forward contracting), quality control measures, and market development programs which serve to educate hay users on the nutritional and palatability merits of perennial peanut hay.

Of the 492 hay decision-makers, nearly half (48 percent) had never fed perennial peanut hay (Table 20). However, of those that had never tried it, about 16 percent said they would definitely feed it in the future, and 52 percent said there was a possibility they would feed it. Only 21 percent said they definitely would not consider feeding perennial peanut hay (Table 20). Thus, approximately two-thirds of those having no experience with perennial peanut hay expressed a willingness to try it. This is an indication that there is considerable potential for expanding the market for perennial peanut hay in the horse industry.

Table 21. Reasons That 51 Perennial Peanut Purchasers **WILL** Continue to Feed Perennial Peanut.

Reasons	Number	Percent
	---N---	---%---
Good nutritional value	41	80.4
Horses like taste	36	70.6
Available	31	60.8
Good price	27	52.9
Need legume hay	20	39.2
Appearance	16	31.4

Table 22. Reasons That 204 Perennial Peanut Purchasers **WILL NOT** Continue to Feed Perennial Peanut Hay.

Reasons	Number	Percent
	---N---	---%---
Not available	108	52.9
Do not feed legume hay	36	17.7
Poor appearance	26	12.8
Too expensive	21	10.3
Horses dislike taste	20	9.8
Poor nutritional value	13	6.4

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Figure 7. Reasons Why Current Alfalfa and Perennial Peanut Hay Buyers **WILL** Continue to Feed.

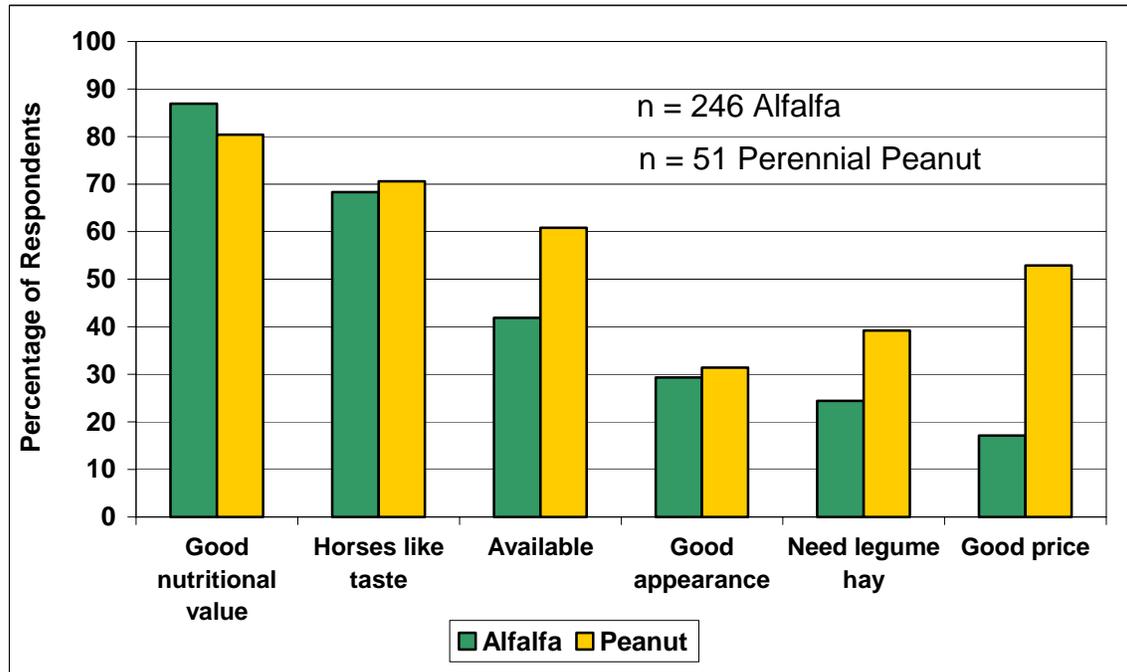
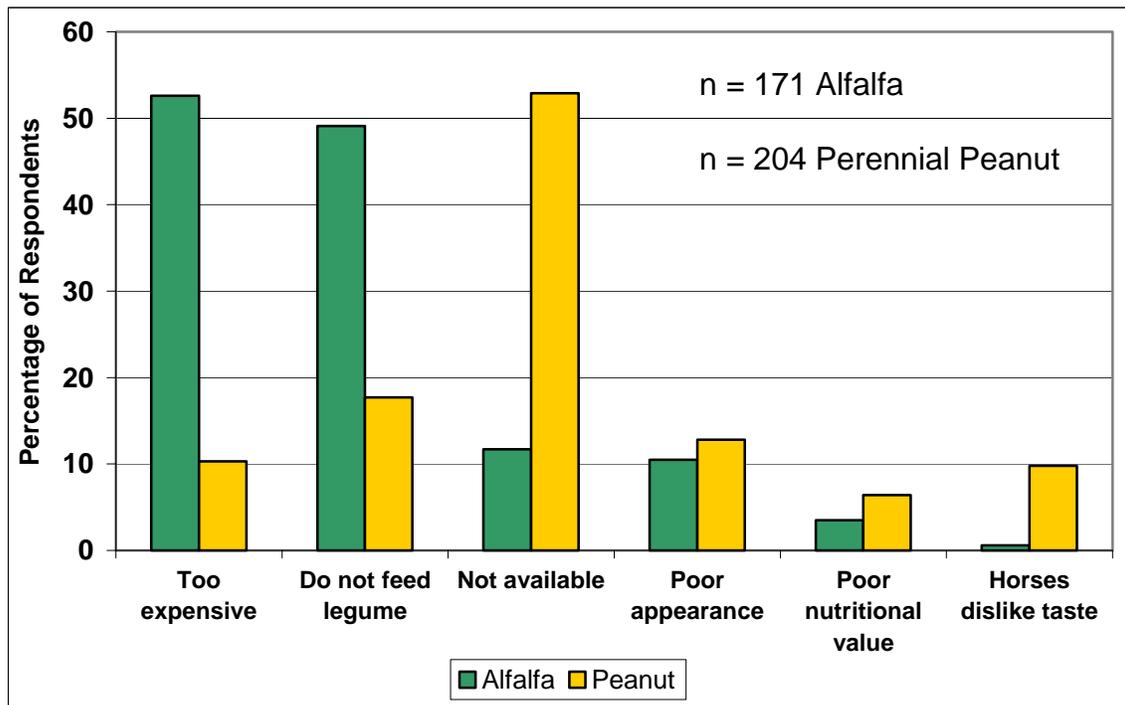


Figure 8. Reasons Why Alfalfa and Perennial Peanut Hay Buyers **WILL NOT** Continue to Feed.



In an effort to pinpoint the effects of geographical location on the prices respondents indicated that they were willing to pay for a square bale of perennial peanut hay, questionnaires were sorted into North, Central and South Florida regions (Figure 9). Respondents that had never fed perennial peanut hay, but said they would or would possibly feed perennial peanut hay in the future were asked how much they would be willing to pay per bale during each of the four seasons. Overall, anywhere from 88 to 92 respondents answered the “willingness to pay” question, depending on the season. Most respondents answered with prices that were reasonably close to prevailing recent market prices. In an effort to pinpoint the effects of geographical location on the prices respondents’ indicated that they were willing to pay for a square bale of perennial peanut hay, prices were sorted into North, Central and South Florida regions (Figure 9). Respondents from the northern region were willing to pay from \$5.35 per bale in the summer to \$5.84 in the winter (Table 23). Those in the central region were willing to pay approximately \$7.00 per bale, regardless of season, and in the south, respondents were willing to pay an average of about \$7.50 per bale (Table 23).

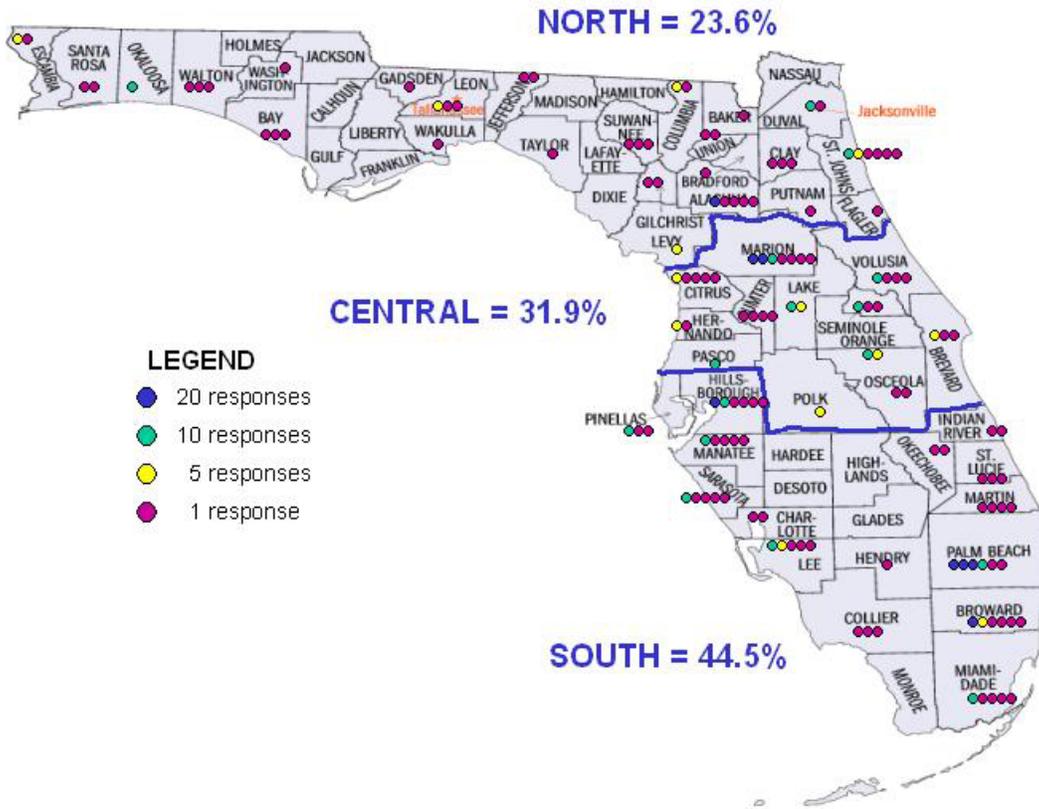
Table 23. Willingness to Pay for Perennial Peanut Hay, by Season and Florida Regions. ^a

Season	Region							
	North		Central		South		All Florida	
	N	\$	N	\$	N	\$	N	\$
Winter	24	\$5.84	26	\$7.00	42	\$7.42	92	\$6.89
Spring	23	5.75	26	7.00	40	7.58	89	6.94
Summer	22	5.35	26	6.96	40	7.58	88	6.84
Fall	24	5.51	26	7.02	40	7.55	90	6.85

^a Respondents are those who have no previous experience with perennial peanut hay, and may be or are willing to add it to their feeding programs.

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Figure 9. Number of Respondents Per County and Region of Florida.



CONCLUSIONS

The overall objective of this study was to determine the awareness and use of perennial peanut hay among horse owners in Florida. The perennial peanut is a warm season legume that makes very high quality hay. An estimated 23,000 acres were under production in Florida during 2001. A questionnaire was mailed to 3,400 Florida members of USA Equestrian, soliciting detailed information on the knowledge and use of hay by horse owners in the State. A total of 549 usable questionnaires were received from respondents whose demographic characteristics were very similar to those of USA Equestrian membership as a whole.

Only 13 percent of survey respondents were “very satisfied” with the availability of any type of hay from their suppliers, and 31 percent were “very dissatisfied”. It appears that there are ample opportunities to improve the level of satisfaction of horse owners by adequately addressing availability issues. One way of addressing availability of hay is through contracting. Nearly 25 percent of respondents expressed a desire to forward contract their hay supplies in the future.

It is estimated that the USA Equestrian membership buys approximately 533,000 square bales of legume hay annually. Currently, perennial peanut hay has about 20 percent share of this market. Weighted average prices reported by respondents for alfalfa hay were nearly \$9.25 per bale in 2001, compared with about \$7.00 per bale for perennial peanut hay. It appears that the price premium enjoyed by alfalfa over perennial peanut hay is declining. Compared to prices reported in a 1988 University of Florida study, real alfalfa hay prices have declined by about 10 percent, while real perennial peanut hay prices have increased by over 90 percent.

Respondents that had fed both alfalfa and perennial peanut hay were asked to evaluate nine critical product attributes for each hay type using a rating scale where zero represented “very dissatisfied” and 10 represented “very satisfied”. Attributes evaluated were smell, color, palatability, ease of handling, free of weeds, nutritional value, free of mold/rot, free of insects, and price. Respondents rated alfalfa hay better with respect to 8 out of 9 different attributes. Perennial peanut hay received a higher rating for price compared to alfalfa. All rating differences were statistically significant at the 0.01 probability level.

There appear to be a minority of respondents that have had extremely negative experiences with perennial peanut hay. They may have purchased poor quality perennial peanut hay or have confused perennial peanut hay with field peanut hay (grown for nuts). In any case, there is a pervasive perception among those currently not feeding perennial peanut hay that it is inferior. This poses a significant educational and public relations challenge. On a positive note, ratings by the 40-plus respondents that had fed perennial peanut during 2001 were superior to all other types of hays over nearly all seasons of the year. An impressive 398, or 79 percent, of all respondents are willing to receive educational email messages specific to perennial peanut hay.

Thus, there is a pressing need for the dissemination of factual information about perennial peanut hay to the horse industry. This study documents widespread misconceptions that can be corrected through a proactive educational and promotional

program aimed directly at horse owners and indirectly at individuals such as veterinarians and Cooperative Extension agents. A significant investment in direct mail, factual brochures, and a first-class Internet website should be considered. Aggressive education and promotional programs, coupled with assurances of adequate supplies, can increase perennial peanut hay's market share.

The Perennial Peanut Producers Association is in a unique position to develop and implement a consumer awareness program, which would enlighten hay buyers about the merits of their product. On the supply side, assurances of product quality can be achieved through the development and adoption of industry grades and standards. Better product availability can be accomplished by encouraging horse owners to forward contract deliveries and by growers cooperatively allocating production and distribution. This combination of directed consumer awareness and industry cooperation represents the biggest challenge and greatest opportunity for developing perennial peanut hay into a premium equine forage and hay for Florida horse owners.

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Appendix A – Equine Owner Questionnaire

Please complete this questionnaire and return it in the enclosed business reply envelope.

Throughout the questionnaire, the term horse(s) refers to all equine-type livestock, including horses, ponies, miniature horses, mules and donkeys.

- Q1. Are you involved in one or more of the following? (*Check all that apply*)
- Diet formulation decisions for horses.
 - Feed purchasing transactions for horses.
 - I am not involved in either diet formulation or feed purchasing transactions for horses.

If you do not purchase and/or feed hay for horses, please proceed to Question 17.

- Q2. How satisfied are you with the availability of hay types from the supplier you use most frequently?
- Very satisfied
 - Somewhat satisfied
 - Somewhat dissatisfied
 - Very dissatisfied

- Q3. Where did you buy hay in 2001? (*Check all that apply*)
- Local feed store
 - Grower, within 50 miles
 - Grower, beyond 50 miles
 - Hay broker, within 50 miles
 - Hay broker, beyond 50 miles
 - Other (specify) _____

- Q4. Did you contract for your hay supply in advance of actual delivery in 2001?
- Yes
 - No → Would you prefer to contract in advance?
 - Yes, I would prefer to contract in advance.
 - No, I would not prefer to contract in advance.

- Q5. What percent of your hay purchases do you:
- | | | |
|----------------------------|-------|-------|
| Pick up yourself | _____ | % |
| Have delivered and stacked | _____ | % |
| TOTAL | _____ | 100 % |

Q6. Approximately *how many square bales* of each of the following hay types did you buy in the winter, spring, summer and fall seasons of 2001 (assume average square bale is between 50 – 60 pounds)?

	WINTER Jan.-March	SPRING April-June	SUMMER July-Sept.	FALL Oct.-Dec.
HAY TYPE	<i>-----Number of square bales purchased-----</i>			
Alfalfa				
Perennial peanut				
Clover/Clover mix				
All other hay types				

Q7. What is the *average price per square bale* for each of the hay types you bought in the winter, spring, summer and fall seasons of 2001 (assume average square bale is between 50 - 60 pounds)?

	WINTER Jan.-March	SPRING April-June	SUMMER July-Sept.	FALL Oct.-Dec.
HAY TYPE	<i>-----Average price per square bale in dollars-----</i>			
Alfalfa				
Perennial peanut				
Clover/Clover mix				
All other hay types				

Q8. Using a rating scale where *10 = very satisfied and 0 = very dissatisfied*, how would you rate your overall satisfaction with the hay types you bought in the winter, spring, summer and fall seasons of 2001? (*You may choose any number from 0 to 10*)

	WINTER Jan.-March	SPRING April-June	SUMMER July-Sept.	FALL Oct.-Dec.
HAY TYPE	<i>-----Rate: 10 = very satisfied, 0 = very dissatisfied-----</i>			
Alfalfa				
Perennial peanut				
Clover/Clover mix				
All other hay types				

Horse Industry Survey

Q9. If you *have fed alfalfa hay*, will you or will you not keep it in your feeding program? (*Check all that apply*)

☞ Yes → Why?

- Available
- Appearance
- Good price
- Feed legume hay
- Good nutritional value
- Horses like taste

☞ No → Why not?

- Not available
- Poor appearance
- Too expensive
- Do not feed legume hay
- Poor nutritional value
- Horses dislike taste

Q10. If you *have fed perennial peanut hay*, will you or will you not keep it in your feeding program? (*Check all that apply*)

☞ Yes → Why?

- Available
- Appearance
- Good price
- Feed legume hay
- Good nutritional value
- Horses like taste

☞ No → Why not?

- Not available
- Poor appearance
- Too expensive
- Do not feed legume hay
- Poor nutritional value
- Horses dislike taste

Q11. If you *have NOT fed alfalfa hay*, would you or would you not add it to your feeding program?

- Yes, I would add alfalfa to my feeding program.
- No, I would not add alfalfa to my feeding program.
- Not Sure

Q12. If you *have NOT fed perennial peanut hay*, would you or would you not add it to your feeding program?

- Yes, I would add perennial peanut to my feeding program.
- No, I would not add perennial peanut to my feeding program.
- Not Sure

Q13. What price per square bale would you be willing to pay for *perennial peanut hay* in each of the following seasons (assume average square bale is between 50 - 60 pounds)?

- Winter (Jan.-March) \$_____per bale
- Spring (April-June) \$_____per bale
- Summer (July-Sept.) \$_____per bale
- Fall (Oct.-Dec.) \$_____per bale

Q14. Based on your *past experiences and beliefs*, please evaluate the following attributes for alfalfa hay and perennial peanut hay. Use a rating scale where **10 = very satisfied** and **0 = very dissatisfied** (You may choose any number from 0 to 10).

	Alfalfa	Perennial Peanut
ATTRIBUTES	<i>10 = very satisfied 0 = very dissatisfied</i>	<i>10 = very satisfied 0 = very dissatisfied</i>
Palatability		
Nutritional value		
Free of insects		
Price		
Smell		
Color		
Free of weeds		
Free of mold/rot		
Ease of handling		

Q15. What sources of information do you use in deciding *what kind* of hay to feed to horses? (*Check all that apply*)

- Personal experience
- Horse industry magazines or publications
- Direct mail
- Internet websites
- From hay suppliers
- From friends or colleagues
- From sales representatives
- From shows, exhibitions or seminars
- Agricultural Extension Service recommendations
- Veterinarian recommendations
- Other (please specify) _____

Q16. What sources of information do you use in deciding *where* to buy hay? (*Check all that apply*)

- Personal experience
- Horse industry magazines or publications
- Direct mail
- Internet websites
- From hay suppliers
- From friends or colleagues
- From sales representatives
- From shows, exhibitions or seminars
- Agricultural Extension Service recommendations
- Veterinarian recommendations
- Other (please specify) _____

Horse Industry Survey

Q17. Which occupation *best* describes your affiliation with the horse industry?

- Owner
- Farm Manager/Operator
- Trainer
- Veterinarian

Q18. Approximately how many years have you been involved with the horse industry?

Number of years _____

Q19. Is your horse-related operation classified, for tax purposes, as a business?

- Yes
- No

Q20. How many acres of land are used in any way for your horses? _____ acres

Q21. In what County are the majority of your horses located? _____

Q22. In what types of activities do you participate with your horses?

(Check all that apply)

- Training
- Rental Riding (by hour or day)
- Competition
- Pleasure
- Other (specify) _____

Q23. Of the horses that you own, manage or train, how many are:

_____ Broodmares
_____ Stud horses

Q24. How many horses do you have in the following age categories?

_____ 0 - 3 years old
_____ 4 - 6 years old
_____ 7 - 10 years old
_____ 11 - 15 years old
_____ Greater than 15 years old

Q25. Are you...?

- Male
- Female

Q26. In what year were you born? 19____

Q27. Do you have access to the Internet at home?

Yes

No

Q28. Do you have access to the Internet at work?

Yes

No

Q29. What is the highest level of education that you have completed?

8th grade or less

Some high school

High school graduate

Technical / Vocational school

Some college

College graduate

Graduate or professional school

Q30. Just for statistical purposes, please indicate your family's total yearly income before taxes.

Under \$20,000

\$20,000 - \$34,999

\$35,000 - \$49,999

\$50,000 - \$69,999

\$70,000 or more

If you would like to receive information on perennial peanut hay, please check the "Yes" box below:.

Yes, I would like to receive educational information about perennial peanut hay. Please enter your email address: _____

No, I would not like to receive educational information about perennial peanut hay.

Thank you for participating in this survey.

Appendix B



Horse Industry Survey

 Appendix Table B-1. Respondents' Education Levels. ^a

Education Levels	Number	Percent
	---N---	---%---
College graduate	179	36.9
Some college	129	26.7
Graduate/Professional school	123	25.4
High school graduate	41	8.5
Technical/Vocational school	9	1.9
Some high school	3	0.6

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

 Appendix Table B-2. Respondents' Annual Income Levels Before Taxes. ^{a, b}

Income Levels	Number	Percent
	---N---	---%---
Under \$20,000	6	1.4
\$20,000 to \$34,999	40	9.0
\$35,000 to \$49,999	48	10.8
\$50,000 to \$69,999	74	16.7
\$70,000 or more	276	62.2

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

^b USA Equestrian reported an average household income of \$134,500 for all of its members.

Appendix Table B-3. Respondents' Internet Access At Home and/or At Work.

Internet Access	Number	Percent ^a
	---N---	---%---
Internet Access at Home	424	86.2
Internet Access at Work	317	64.4
Internet Access at Home and/or Work	447	92.6
No Internet Access	36	7.5

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

Appendix Table B-4. Number of Horses per Farm, by Florida Regions.

Farm Size	Region			
	North	Central	South	All Florida
Number of horses	Number of Farms			
10 or less	92	112	164	368
11 - 20	16	19	285	63
21 - 30	4	13	19	36
31 or more	4	13	8	25

Appendix Table B-5. Seasonal Purchases of Alfalfa Hay, 2001.

Season	Number of Respondents	Percent of all Respondents ^a	Total Alfalfa Hay Purchases	Average Purchases
	----N----	----%----	----55 lb. bales----	----55 lb. bales-
Winter	188	38.2	17,482	92.9
Spring	165	33.5	15,152	91.8
Summer	155	31.5	13,740	88.7
Fall	177	35.9	15,218	85.9
Total Annual	204	41.5	61,592	301.9

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

Appendix Table B-6. Seasonal Purchases of Perennial Peanut Hay, 2001.

Season	Number of Respondents	Percent of all Respondents ^a	Total Perennial Peanut Hay Purchases	Average Purchases
	----N----	----%----	----55 lb. bales----	----55 lb. bales-
Winter	28	5.7	7,494	267.6
Spring	26	5.3	3,825	147.2
Summer	22	4.5	3,460	157.3
Fall	29	5.9	4,509	155.4
Total Annual	42	8.5	19,288	459.2

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

Horse Industry Survey
Appendix Table B-7. Seasonal Purchases of Clover Hay, 2001.

Season	Number of Respondents	Percent of all Respondents ^a	Total Clover Hay Purchases	Average Purchases
	---N---	---%---	---55 lb. bales---	--55 lb. bales--
Winter	16	3.3	2,632	164.5
Spring	18	3.7	2,738	152.1
Summer	15	3.0	2,122	141.5
Fall	17	3.5	2,352	138.4
Total Annual	20	4.1	9,844	492.2

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.

Appendix Table B-8. Seasonal Purchases of Other Hay, 2001.

Season	Number of Respondents	Percent of all Respondents ^a	Total Other Hay Purchases	Average Purchases
	---N---	---%---	---55 lb. bales---	--55 lb. bales--
Winter	356	72.4	60,720	170.6
Spring	348	70.7	56,040	161.0
Summer	336	68.3	52,762	157.0
Fall	366	74.4	64,458	176.1
Total Annual	389	79.1	233,980	601.4

^a Percentages are based upon 492 respondents that indicated responsibility for hay purchases.