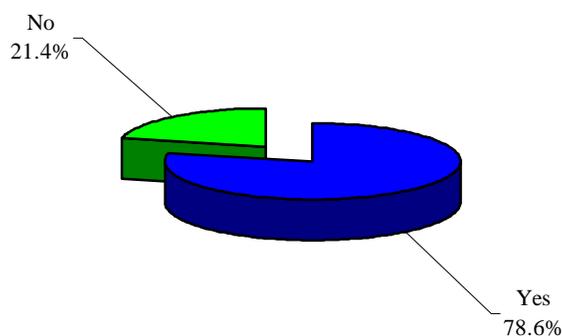


Feed and Pasture Management

Feed and supplements Feed and supplement use is important to the understanding of the care and maintenance of a healthy horse. Owners were asked if they used feed supplements and what they used. The results indicated that 78.6% of horse owners reported adding supplements to their feed. They consistently reported that this was, in large part, due to poor weather conditions, a feed shortage and poor quality in the hay and grain available. In an effort to ensure the good health of their animals, respondents believed in the necessity of adding additional supplements to increase the quality of their feed. Ninety point six percent reported using vitamins, minerals and proteins. Joint care was also an area within which owners felt they needed to take a proactive stance. Performance enhancers were used by 11.2% of owners.

DO YOU USE A SUPPLEMENT IN YOUR FEED?

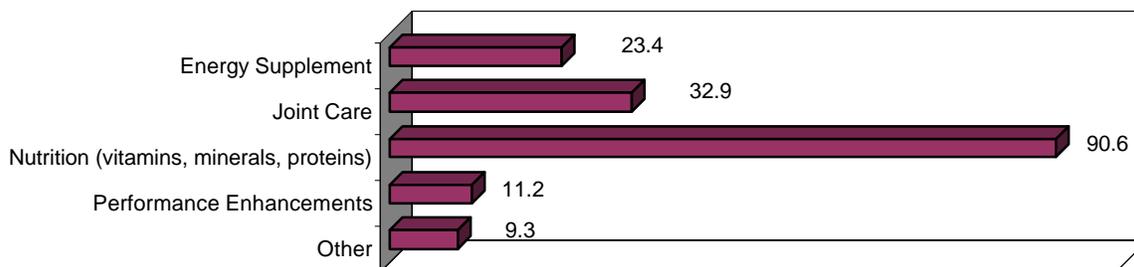
(n=1,596)



Graph 64. Do You Use A Supplement In Your Feed?

SUPPLEMENTS USED:

(n=1,254 - Frequency of Selection)



Graph 65. Supplement Used

Horse owners identified the following feed supplements used during that past year:

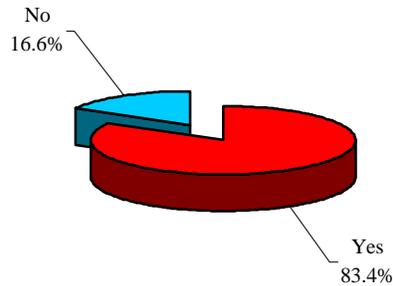
FEED SUPPLEMENTS			
(n=116)			
Supplement	Percentage	Supplement	Percentage
Minerals	10.3	Blacks	1.0
Oil (Corn and Canola)	9.5	Bran	1.0
Herbal Supplements	8.6	Brood Wares	1.0
Flax	7.8	Calf Manna	1.0
Hoof Supplement	7.8	Carrots	1.0
Beet Pulp/Pellets	6.0	Challenger	1.0
Glucosamine	5.2	All Purpose Cubes	1.0
Base feed (oats, alfalfa cubes, grain)	10.4	Digestive Aid	0.9
Salt	4.3	Echinacea for Colds	0.9
Rice Bran	3.4	Equilic	0.9
Vitamins (B1, D, E)	3.4	Euqest 8:8	0.9
Weight Gain	3.4	Fatpak 100	0.9
Dynamite	2.6	Foal and Feed	0.9
Electrolytes	2.6	Garlic	0.9
Feed – Complete	2.6	Gelatin	0.9
Sweet Feed	2.6	Happy Trails	0.9
Frisky Foal	1.7	Hay	0.9
Horse Power	1.7	Probiotics	0.9
Elderly Equine Pellets	1.7	Respiratory	0.9
Treats	1.7	Seagreens	0.9
Winter Feed	1.7	Selenium	0.9
Protein 28%	1.0	Soya Meal Protein	0.9
Masters 20%	1.0		

Table 33. Type of Supplement Used

Eighty-three point four percent of owners reported feeding commercial feed to their horses in addition to range grazing and hay. Again, due to the unique year of poor weather conditions, owners expressed a concern about the quantity and quality of grazing land and hay. This required them to purchase additional feed to ensure the proper maintenance of their animals. Grain, sweet feed, complete pellets/cubes, and forage pellets/cubes were the primary commercial feed purchased. Hay was likely used as a supplement to the total diet because of the drought and pasture shortage.

**DO YOU FEED A COMMERCIAL FEED TO YOUR HORSES
BEYOND RANGE/PASTURE GRAZING OR HAY?**

(n=1,576)

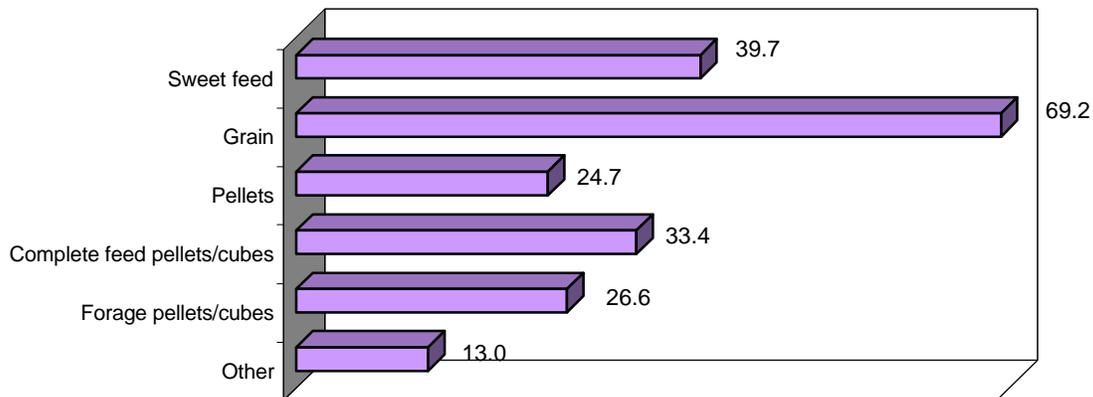


Graph 66. Do You Feed A Commercial Feed to Your Horses Beyond Range/Pasture Grazing or Hay?

In response to the poor weather conditions, specifically the drought, over the past few years, many horse owners have been forced to purchase their feed, primarily grains, commercially as opposed to producing it on their land. The following graph depicts commercial products purchased:

COMMERCIAL FEED PURCHASED

(n=1,349 - Frequency of Selection)



Graph 67. Commercial Feed Purchased

Other commercial feed products respondents identified are in the following table:

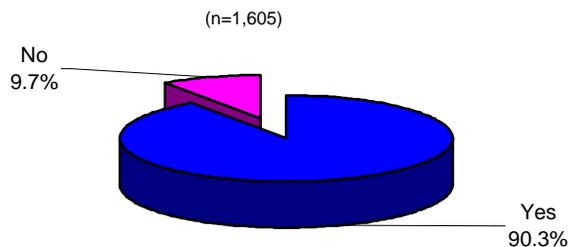
OTHER COMMERCIAL FEED PRODUCTS			
(n=175)			
Product	Percentage	Product	Percentage
Beet Pulp	30.3	Wheat	0.7
Oats	12.0	Nettle	0.7
Hay	10.3	Corn with Promolas	0.7
Alfalfa	9.7	Cider Vinegar	0.7
Flax	6.9	Glucosamine	0.6
Mineral	5.7	Masters 20%	0.6
Crunchies	4.6	Nutrena Life Design	0.6
Bran	4.0	Cubes	0.6
Oil	3.4	Vitamins	0.6
Senior Feed	2.3	Brewers Yeast	0.6
Grain	2.3	Satin Finish	0.6
Extruded Pellets	1.7	Barley	0.6
Treats	1.7	Apples	0.6
Friskey Foal	1.7	Step 4 UFA	0.6
Salt	1.1	Anapro and 32% Supplement	0.6
Soya Meal	1.1	Sho-Glo	0.6
Carrots	1.1	Herbs	0.6
Happy Trails	0.7	Martins	0.6
Molasses	0.7	Wet Brewers Mash	0.6

Table 34. Other Commercial Feed Products

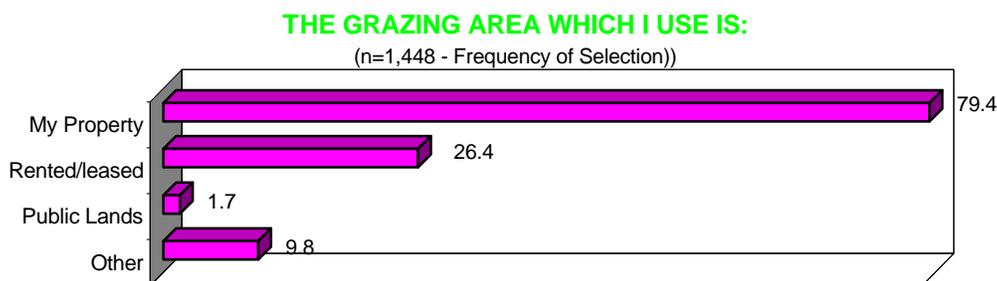
Pasture Management

Due to the drought in certain areas of Alberta, many pastures must be rotated and pasture management programs set in place (see Grazing). The majority of horse owners (90.3%) reported using pasture, range or grazing as a feed source. The primary land used was property they owned or rented/leased land. An extremely small number (1.7%) reported using public lands.

DO YOU PASTURE/RANGE/GRAZE YOUR HORSE(S) AS PART OF YOUR FEED SOURCE?



Graph 68. Do You Pasture/Range Graze Your Horse(s) As Part of Your Feed Source?



Graph 69. The Grazing Area Which I Use Is...

Owners who reported using other arrangements for grazing, primarily boarded their horse(s) at another location as documented in the following table:

OTHER ARRANGEMENTS FOR GRAZING

(n=132)

	%		%
Boarding	60.5	Ditches (on tether)	0.8
Family Property	12.4	Horse Club Property	0.8
Friends Property	10.1	Private Property	0.8
Neighbors Property	7.8	Ranch Property	0.8
Employers Property	3.1	Breeding Farm	0.8
Out of Province	1.6	Grazing Lease	0.8

Table 35. Other Arrangements For Grazing

The average grazing period ranges from a low of 1 week to a high of 52 weeks with an average of 30.7 weeks per year.

Public Land Use and Issues. The use of public land is a very controversial subject with many viewpoints and is an emotional topic. Respondents (29.8%) when asked to comment on the use of public lands frequently identified motorized vehicles (which includes ATVs, quads, bikes and snow mobiles) as the single most detrimental force to the horse industry. All 179 respondents mentioned that horses and motorized vehicles “do not mix”. Most respondents felt that there should be separate trails for each to ensure the safety of horse and rider alike. Several respondents were apprehensive of legislation relating to what is happening in the United States, and believe that Canada usually follows suit by closing trails, as in the U.S. Many respondents observed that the Alberta equine industry is up against very vocal groups, such as off-road and mountain biking. The concern is that the horse industry, because of the fractured infrastructure, will not unite as one unit to voice its concerns. According to some respondents, there appears to be a great need by the Alberta horse industry to become very proactive in its attempts to have more trails opened and not to allow the government to close trails.

The use of public lands, according to 60+ respondents (10.5%) advised that access to public lands is becoming more and more difficult. Stakeholders mentioned that leaseholders believe that the leased land is “exclusively theirs” by putting up padlocks, etc. As one stakeholder wrote, “Government lease lands are unfair (regarding access and use) for taxpayers and benefit only a few. There seems to be a trend towards more restrictions by the leaseholder, i.e., locked gates, barred entrance to some road allowances even where the road allowances aren’t leased”. Leaseholders went further to say that the stakeholders are irresponsible in their use of the property, i.e., leaving gates open and allowing livestock to wander off, littering and polluting the leased land and not asking permission to travel on the leased land. One leaseholder commented, “As a leaseholder, I encourage riders to use our grazing lands. However, we continually have gates left open which complicates the management of our pastures and cow herd”. Another leaseholder reported, “As a leaseholder, my concern is knowing who is on my land and do they pose a problem, i.e., leaving gates open, scaring, running horses, polluting, leaving objects that can injure horses, or people themselves”. Another observed that “some start accidental fires that become uncontrollable”.

The issue of liability falls into the above category of leased lands, as 3.5% of the respondents reported that their liability is becoming a great concern ranging from injury to damage from accidents. To the owners and leaseholders these issues are growing and require attention.

Land Management. Pasture management, from a small acreage to a large-scale operation, takes time, talent and monetary resources, which are not always readily available. The following comments are cited to capture some of the sentiments, opinions and attitudes of the respondents. Some respondents have implemented pasture management programs but advise that due to arid conditions the rotation of pasture lands in adjacent fields is not able to sustain even a small herd for any length of time. One respondent commented, “We have to have a good cover in each field as we need to catch the winter snows, so we never overgraze if we can help it.” Another respondent observed that the total practice of pasture management during the drought is minimized or impractical. While the average individual thinks of drought as only moisture, the following comments typified the frustration experienced with the difficulty of totally dry seasons, “Horses eat what the grasshoppers leave behind” and “...our pastures are overgrazed. . . .”. Pasture land rotation is by far the most chosen of pasture management practices. There is a conscious effort not to overgraze, over harrow, manage the maintenance of manure removal/spreading/raking, fertilizing their pastures and taking active approaches to weed control. The following table depicts responses by the 1,079 stakeholders responding to the question of pasture management, ranging from the most frequent response to the least frequent response.

PASTURE MANAGEMENT

(Frequency of percentage by selection n=1,079)

	# Respondents	% Respondents
Rotation	698	64.7
Harrowing	88	8.2
Manure (pick up piles, raking, break up piles)	47	4.4
Hay or grain (concerns, programs, supplemental feed)	47	4.4
Fertilizing	46	4.3
Don't overgraze horses	34	3.2
Reseeding	29	2.7
Weed control	27	2.5
Pasture winter hay	25	2.3
Limit horses	24	2.2
Aerate	23	2.1
Spread manure	21	1.9
Hourly grazing	20	1.8
Mow grass	19	1.8
Do not pasture horses (boarded or kept penned)	17	1.6
Plow/leveling/drag pastures	16	1.5
Pray for rain	16	1.5
Alternate corrals	15	1.4
Graze horses with cows	11	1.0
Sacrifice area	11	1.0
Cross fence	9	.8
Free range	9	.8
Grass control (maintain 2" to 4")	9	.8
Irrigation	8	.7
Electric fences	7	.6

Table 36. Pasture Management

Other comments where there were five or less responses were as follows:

- Disease control
- Composting
- Mole/gopher trapping/poisoning/control
- Strip grazing
- Do not pasture
- Snow fences

Manure Waste Management. The disposal of horse manure is a question that touches on methods and environmental impacts. Respondents were asked to describe how they dispose of manure. Nearly 70.0% of the respondents offered comments. The methods they identified were as follows:

TYPE OF MANURE MANAGEMENT n= 1240	%
Spreading manure in fields (non designated)	38.1
Spreading manure in pastures	17.0
Composting for later spreading or reuse	16.6
Piling for latter recycling	8.2
Spreading manure in hay fields	6.1
Spreading manure in grain fields	3.8
Manure given away or used for gardens, flowerbeds, or trees	3.7
Shipping out manure	1.9
Manure sold to mushroom growers, greenhouses, nurseries, or as fertilizer	1.9
Manure to help reclaim land	1.1
Manure burnt off and possibly spread later	.9
Other – another person’s responsibility	.7
Total	100.0

Table 37. Type of Manure Management

Spreading manure in the fields Over 460 respondents commented that their practice was to spread their horse manure into their fields. A few owners indicated that they also spread manure onto their local neighbors fields. They further commented that they do harrow or plow under the manure in order to increase soil fertility or soil conditions. In some cases, stock piled manure was also spread in their fields after some period of decomposition.

Spreading manure in grain fields and hay fields A smaller number of respondents (46) reported that they spread manure as a soil fertilizer supplement into their grain fields while 75 respondents indicated that they spread manure in their hay fields. In both cases, they reported that they worked the soil to ensure a blending.

Spreading in pastures Spreading manure in pastures appears to be common practice. Seventeen percent indicated that they spread manure to decompose while about 10% of these people indicated that they worked the manure into the soil or piled it to be spread at a later date. In a few cases they noted that they attempt to do some form of composting prior to spreading. A number of owners indicated that they actively spread their waste manure in pastures on a rotational basis. Also, most harrowed their field to assist in decomposition.

Stock piling for later recycling Stock piling of manure was reported by 8.2% or 100 respondents. They consistently indicated that they are recycling the manure to be spread in their fields in spring or fall. They consistently reported that they were piling manure away from water sources to avoid contamination.

Composting of manure A significant number (16.6%) of horse owners reported actively composting their manure for later use. They reported the process could be as short as six months or as long as five years. A small number indicated that the composted product was to be sold; however, most often the composted waste was spread in their fields.

Manure used for gardens, flower bed and trees Some respondents (45.0%) indicated that they used their manure for fertilizer in their own gardens, flower beds and trees. The data indicated that these owners usually had only one to three horses. There was no indication if they had composted this waste material. A small number reported giving away some manure to other local people for their use.

Manure burnt off A small number (11.0 or 0.9%) indicated that they generally burnt off their manure as a disposal method. It was noted that most of these respondents also indicated owning one to three horses. Some noted that they spread their by-product in the fields or gardens.

Shipping out of waste manure One point nine percent of owners indicated that they contracted waste removal companies to remove their manure on a periodic basis. Some of these people were riding stables, corrals, small farms or acreages.

Manure sold to others One point nine percent of owners indicated that they sold their horse manure to nurseries, tree farms, greenhouses and mushroom growers. While not a wide spread practice, it does offer a disposal method as well as a cost recovery process.

Reclamation A small number of respondents (14.0%) indicated that they disposed of their manure by using it to fill-in low areas or reclaim specific areas of their property. In some cases they indicated that they mix in straw or hay to supplement the manure for added bulk.

Other means of disposal A few respondents indicated a concern about the disposal of the manure but considered it as “some other persons responsibility” as they were boarding their horse on a farm or stable or have agreements to dispose of it in local gravel pits or dumps.

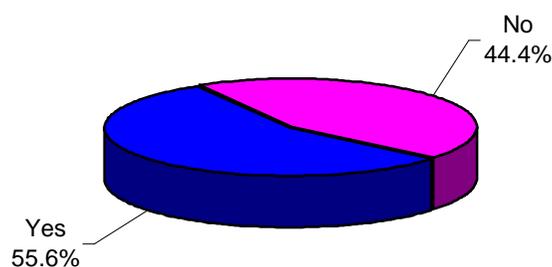
The issue of manure waste management confronts all horse owners. However, the results indicate that a waste management process ranges from spreading raw manure on the fields to composting and resale. Notwithstanding the differences between commercial and non-commercial settings, there are a number of important environmental issues present such a number of respondents reporting that they disposed of waste manure into local pits or dumps, or dumping into land reclamation sites. In some cases, they reported that this was a requirement of the local municipality/county; in other cases, it is an attempt to reclaim/restore land sites. It appears that the waste products disposed of at the latter locations are in a raw state, thus a potential for interaction with other waste products or diseases. Is there a potential and opportunity for the individuals and industry to do a lot better?

Where stock piling of manure waste was cited as a common practice, owners generally indicated that their process was sensitive to water and other environmental issues. Observations and comments suggest that commercial or large ranch/farm operations are likely to be large producers of manure waste and that they need to be vigilant and continue to examine their methods to ensure sound environmental practices are practiced.

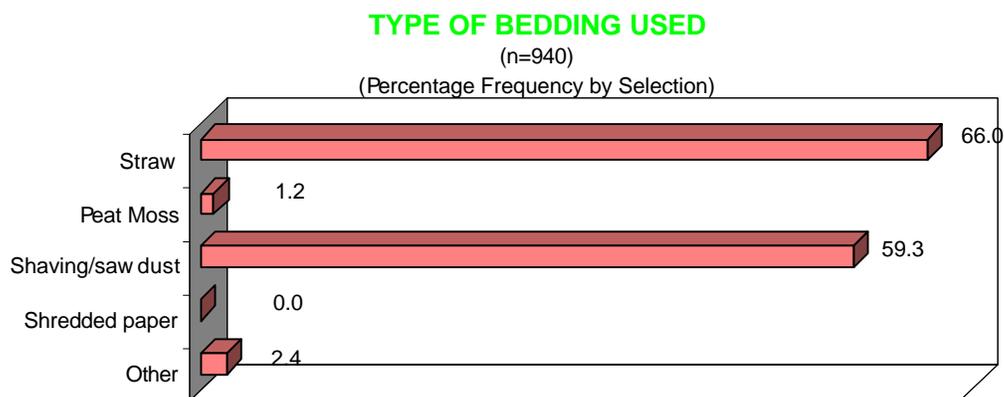
Bedding. Bedding is a key item in the maintenance of equine stock. The survey sought to assess if owners purchased bedding and if so, what type. Over one-half (55.6%) of horse owners reported purchasing one or more types of bedding for their horses. Of those who did respond, 66.0% purchased straw while 59.3% preferred using shavings or sawdust. Respondents who reported “other” bedding identified straw, peat moss, shaving/sawdust, or shredded paper as well as home-grown straw (not purchased), woody peat, wheat straw, wood chips, and sawdust pellets. The statistics are reported in the following two graphs.

DO YOU NORMALLY BUY BEDDING FOR YOUR HORSE(S)?

(n=1,592)



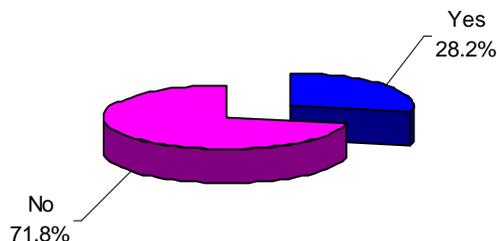
Graph 70. Do You Normally Buy Bedding For Your Horse(s)?



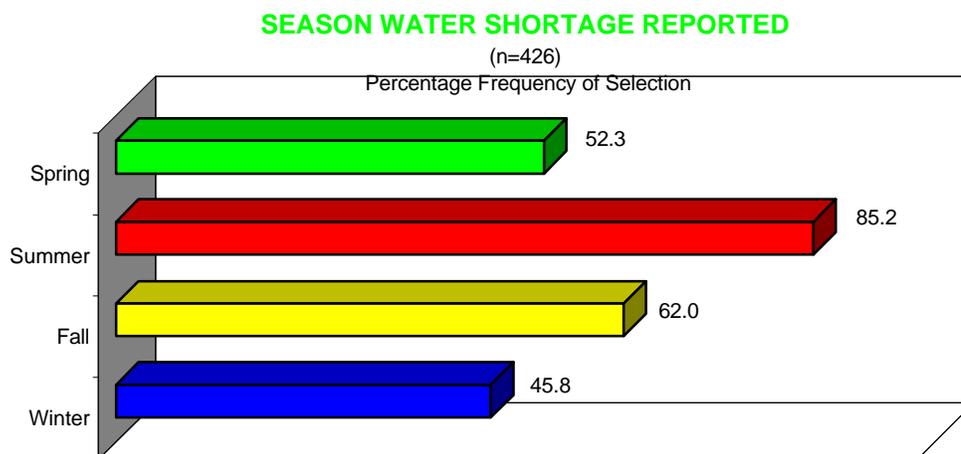
Graph 71. Type of Bedding Used

Water. The issue of water availability is a critical issue within the province. Respondents were asked if they were experiencing a water shortage and if so, when during the course of the year. The majority of respondents reported that they were not experiencing a water shortage, however, when given the opportunity to comment through an open-ended question (see environment issues), respondents did report that water shortage was a problem. It might also be noted that people who have a dedicated pasture and water supply or those who board their horses where water and feed are supplied to them may not perceive that there is a water shortage, thus the large “No” response. The majority of respondents (71.8%) to the direct question of water shortage reported that they were not experiencing a water shortage, while 28.2% were experiencing a water shortage. Summer was the season which most owners had difficulty, with fall being reported as the second highest season of concern as indicated in the following charts (respondents could select more than one season).

ARE YOU EXPERIENCING A WATER SHORTAGE?
 (n=1,583)



Graph 72. Are You Experiencing A Water Shortage?



Graph 73. Season Water Shortage Reported

Conclusions

Pasture management and all that it entails, is an ongoing concern for the majority of respondents. The issues of management includes such areas as feed, pasture usage, public lands, grazing lands, manure waste management, bedding and water.

A large majority of respondents reported using supplemental feeds with the majority of this supplement being nutrition, such as vitamins, minerals and/or proteins. Other supplements utilized are energy supplements, joint care supplements and performance enhancements. Again, the majority of horse owners indicated that they do purchase and feed a commercial feed to their horses. The commercial feed could be: sweet feed, grain, pellets, complete feed pellets/cubes, forage pellets/cubes, with the largest group reporting that they purchase grain for their horses. There were numerous “other” responses where beet pulp was most frequently cited.

Due to changing climate conditions in Alberta over the past two to three years, horse owners concerns over the quality and quantity of feed was very apparent. Throughout this study, horse owners have identified the drought as the cause for exorbitant prices for hay and escalating prices for feed supplements.

Relating to the feed issue, horse owners have indicated that the vast majority of them utilize pastures, ranges or grazing as a feed source. Primarily they used property they owned or rented/leased land. Many indicated that they board their horses and did not have pastures, range land or grazing fields of their own.

The issue of public land use was an issue with the responding horse owners observing ATV's as the specific concern. They indicated that horses and motorized vehicles "do not mix" and that some compromise must be met, i.e., separate trails for each. Many horse owners commented that there is more intervention with the government on behalf of the ATV sector than with the horse industry and that the number of riding trails once assigned to the horse industry is diminishing. Leaseholders were also mentioned as another concern, wherein some horse owners condemned leaseholders for locking them out. Leaseholders on the other hand, described riders as irresponsible individuals who take no responsibility for their actions, such as leaving gates open which make it very hard to manage a herd, whether cattle, horses, sheep, etc. Leaseholders spoke often of the liability they face by allowing riders onto their land. Several respondents, who were also leaseholders, reported that several fires had been caused by riders thus, a serious concern. Various respondents are very concerned about liability issues and potential legal liability action(s) which may arise from accidents, negligence, etc.

Pasture management programs were deemed to be important by those who already have a program in effect as well as those who are aware that such a program needs to be implemented. Again, the arid conditions over the past two to three years has hindered many individuals in implementing and maintaining a pasture management program. Of those who have implemented a pasture management program, rotation seems to be the most popular management technique. Individuals are aware of the importance of a manure management program, the need to not overgraze and the value of taking proactive measures against weeds.

The management of waste manure elicited a great number of responses. Methods used by the majority of respondents included: spreading manure in fields (non designated), spreading manure in grain fields, spreading manure in hay fields, spreading manure in pastures, piling for later recycling, shipping out manure, composting or later spreading or reuse, manure given away for use in flower beds, gardens, manure burnt off, manure sold to mushroom growers, greenhouses, nurseries or as fertilizer or manure to help reclaim land. While manure is dealt with differently by individuals, the majority agreed that the environmental concerns relating to waste manure was a concern, especially with large scale operations, who must continue to be vigilant in their efforts to ensure sound environmental practices. Parts of Alberta have a very high concentration of fecal chloroform in ground water, some of which may be attributed to the livestock industry and related commercial operations. There are a number of pilot projects reported in other sources, dealing with ways and means of handling this problem.

A very slight majority of horse owners purchase bedding for their horses. Of those who purchased bedding, straw appears to be the number one choice, with shavings/sawdust second. Only 1.2% of the respondents indicated using peat moss.

Water, probably the most significant factor in this survey relating to feed, pasture management and health of the horse, has been addressed by many throughout this survey, evidencing that there is a water shortage. However, when asked directly whether or not they thought there was a water shortage, 71.8% reported that they did not think so. This contradiction may be because respondents have enough water to sustain their horses but not enough for effective pastureland maintenance and crop development. The summer months appear to be the heaviest affected months of the year.

Environmental Issues

Environmental issues are becoming more and more the norm for environmental groups and individuals. Many stakeholders have taken it upon themselves to develop and maintain some type of program to protect their horses and the environment. Using an open-ended question, participants were asked to elaborate on what they perceived the environmental issues to be in the horse industry. The following table highlights the themes identified.

ENVIRONMENTAL ISSUES AND CONCERNS

(Frequency of percentage by selection, n=1,009)

	# Respondents	% Respondents
Drought (lack of moisture, land erosion)	279	27.6
Water (quality/quantity of water, contamination)	200	19.8
Feed (availability, quality and growth)	131	12.9
Pasture management	128	12.7
Pollution	108	10.7
Open public land access	33	3.3
ATV, bikers, hikers, quads	32	3.2
Urban users	29	2.9
Health conditions	28	2.8
Oil industry	18	1.8
Access to public facilities/land	11	1.1
Greenhouse effect	6	.6
Breeding	4	.4
Migration of wild fowl	<u>2</u>	<u>.2</u>
	1,009	100.0

Table 38. Environmental Issues and Concerns

The most often remarked-upon issue, as reported previously, was that of water and/or drought [this portion of the question has been broken down into two components as respondents listed drought and water as two different issues, i.e., lack of water vs. water quality]. Respondents reported that arid