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THE CANADIAN ANIMAL HEALTH INDUSTRY

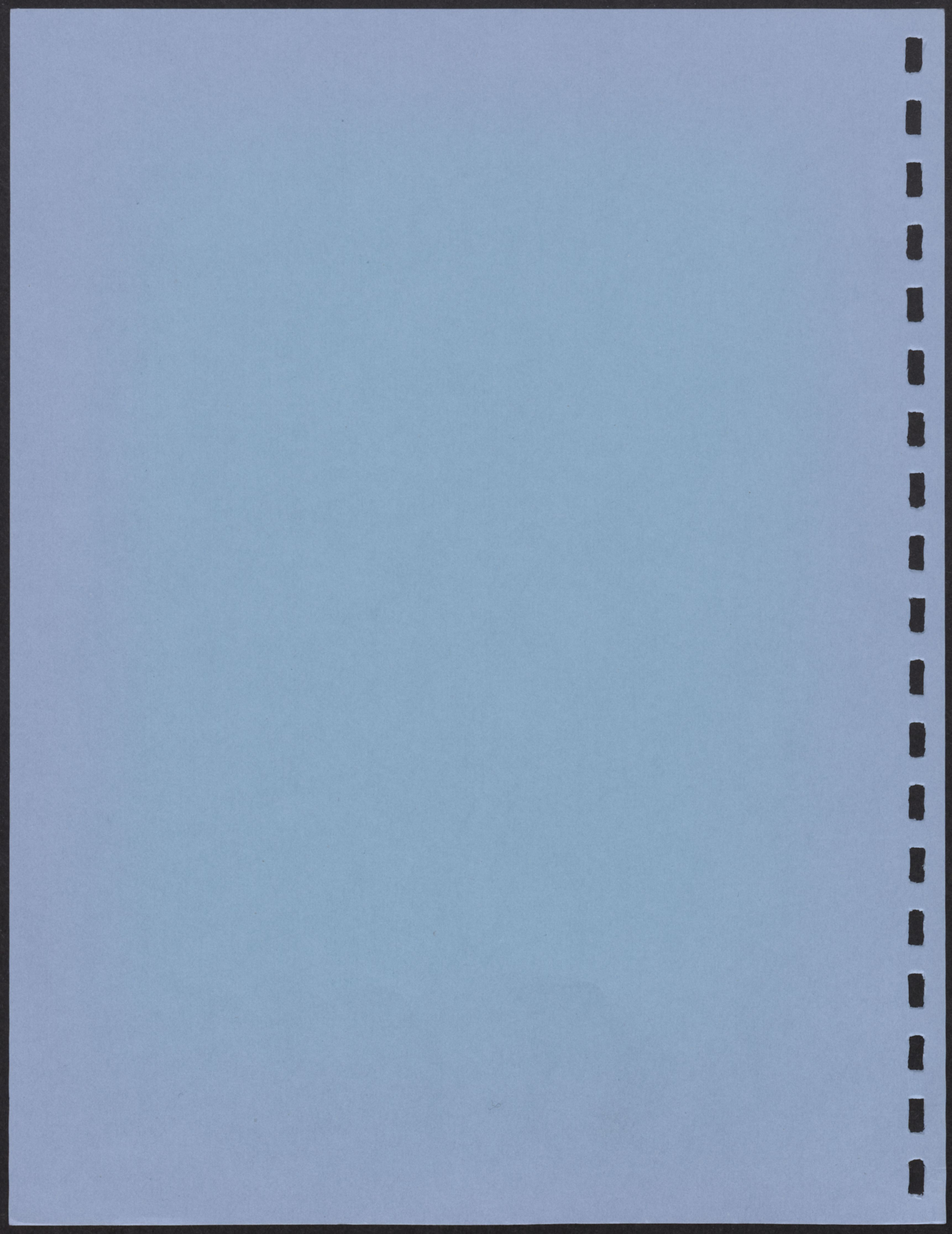
by

David A. Stauffer  
and  
Kenneth F. Harling

UNIVERSITY  
of GUELPH

**Department of Agricultural Economics  
and Business**

University of Guelph  
Guelph, Ontario  
Canada  
N1G 2W1



# The Canadian Animal Health Industry

by

David A. Stauffer  
and  
Kenneth F. Harling

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Department of Agricultural Economics and Business  
University of Guelph  
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## I. INTRODUCTION

### Overview

This study describes the Animal Health industry and how it competes. It takes a broad look at the current industry. As this study takes a snapshot of the industry, the dynamic nature of its markets and its business environment is downplayed. The result is that this study only provides a temporary view--the current state may bear little resemblance with the one of the future.

### Objectives

The overall purpose of the study is to provide an objective description of the current state of the industry in the hope that it will improve the reader's understanding of the industry. Specific objectives are:

1. To describe the industry structure.
2. To determine the industry sales, to identify the major market segments, and to assess their growth potential.
3. To identify the major competitors in the industry and develop a profile of each in terms of its strategy, strengths, and weaknesses.
4. To identify the environmental trends facing the industry and to assess their potential implications.

### Study Approach

The initial idea was to use both published information and field data to a similar extent. Unfortunately, the public statistics and reports about the Canadian Animal Health industry were limited. In addition, some of the sparingly little industry data was not accessible for non-industry members. This meant that much of what is reported in this study is based on personal interviews. The selection of industry representatives to be interviewed was guided by the idea of including as many major players as possible under both tight budget and time constraints. A major consequence is that the report focuses heavily on companies headquartered in Ontario as they were readily accessible.

The industry representatives interviewed are identified in Appendix A. Altogether fourteen individuals were interviewed: ten managers representing the manufacturers, two individuals from the retail level, and one with two members of the central purchasing department of a large feedmill organization. An open-ended questionnaire was used to direct the interviews and this appears in Appendix B.

Analysing an industry requires that many facets be considered. If an attempt is made to analyse the industry in its entirety, the task becomes a formidable one. Given the constraints mentioned above, a decision was made to approach the industry from the manufacturers' perspective.

The quality of the data reported herein is subject to numerous biases. It is affected by the interviewees lack of knowledge about themselves, their competitors, and the environment, and

also by what they were willing to reveal about what they knew. It is also affected by their perception, which may be coloured by emotion, of the actual situation. In an attempt to keep the level of bias low, perceptions such as reported strengths and weaknesses are a blend of several opinions. Bias is also less serious when one views the company data as relative figures for the purpose of comparison rather than absolute figures.



## II. THE ANIMAL HEALTH INDUSTRY IN CANADA

### 1. Definition

The Animal Health industry is defined here as comprising of all organizations involved in manufacturing, wholesaling, retailing, using, and regulating animal health products. Animal Health products prevent or control diseases, maintain or improve the health status of animals or their immediate environment, and are used with the purpose of restoring, maintaining or enhancing a given animal's performance.

### 2. Industry Structure

When looking at the industry structure, we have to include the international trade component in addition to the above mentioned participants. Figure 1 depicts the different classes of industry participants and illustrates the product flow within the industry. The trade component is depicted by the bold arrows entering the framing rectangular which represents Canada. Since the bulk of trade consists of imports, exports are not shown in the Figure. The industry is broken down into five levels which make up the marketing channel (also called distribution channel). The participants at a given level are further broken down into distinct groups. This clearly complicates the graph but, in my view, is crucial to understanding how the industry operates. In fact, the graph reflects only partially the complexity of the industry's structure. The government regulatory agencies, for instance, have been omitted from the figure so as to keep it workable.

The thickness of the arrows from level to level gives a rough indication of the relative importance of the product flows within the industry.

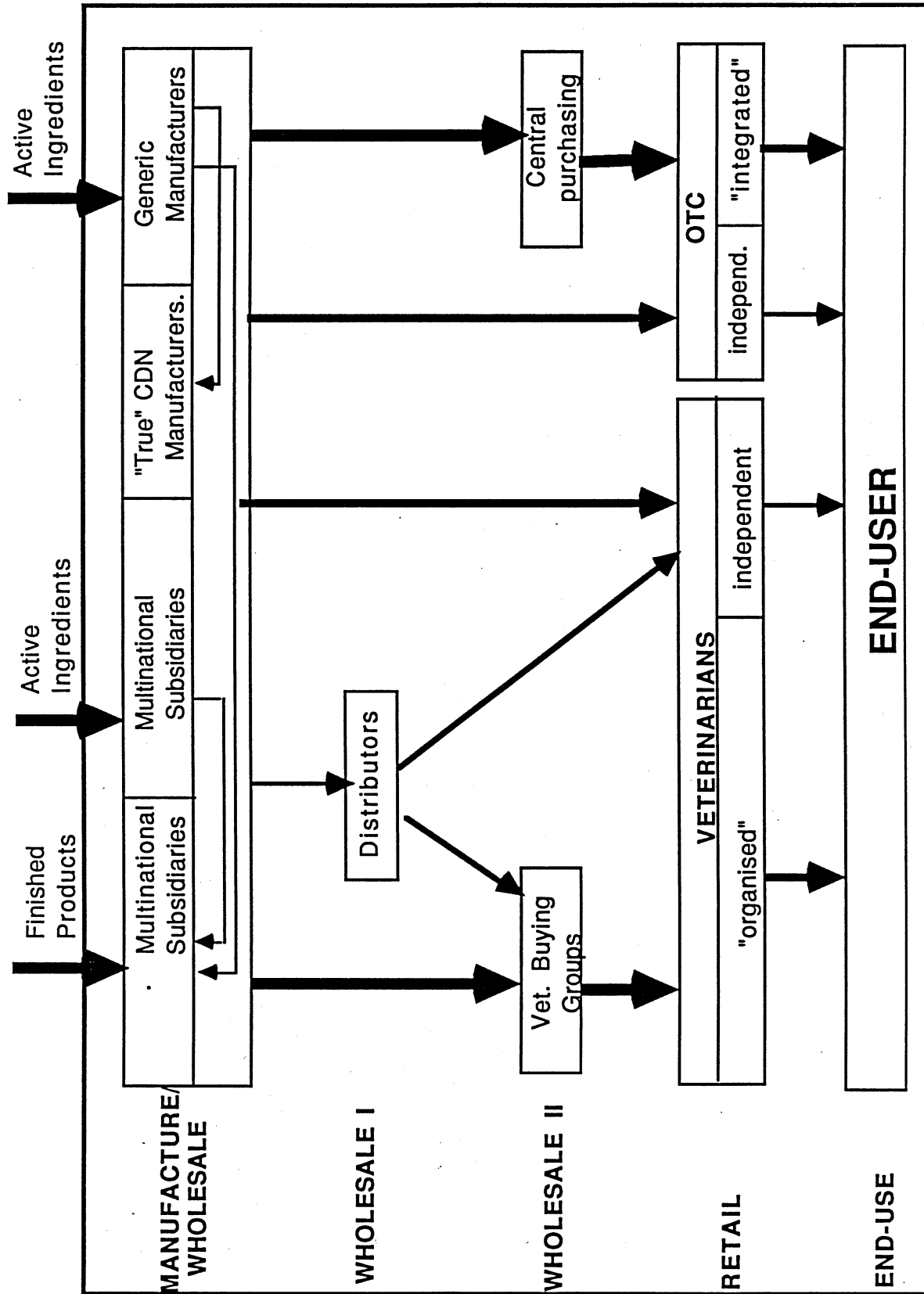
Manufacturers basically have to choose among four alternative ways of bringing their products to the retailers: [1] establish their own sales force [2] use one or several distributors as intermediaries [3] give exclusive distribution rights to a manufacturer which has an established sales force or [4] any combination of the above. As a result, the length of the channel as measured by the number of intermediaries varies between one and three. We will now describe each level.

#### **The Manufacturing Level**

The manufacturing level is divided into four groups according to the location and kind of production (Figure 1). The first and largest group are subsidiaries of multinational companies, which produce the bulk of their sales in production facilities abroad. The Canadian subsidiary therefore, primarily performs the marketing function. Examples include COOPERS AGROPHARM, NORDEN LABORATORIES, and MAY & BAKER.

The second group consists of a few multinational's subsidiaries which actively perform the manufacturing function for most or all of their products in Canada. In contrast to the first group which imports finished products, this group imports solely the active ingredients which are then formulated into finished products at local production facilities. Examples include PFIZER CDN and TUCO.

Figure 1: Animal Health Industry Structure



The third is a small group of independent Canadian companies which do basic research and development in Canada and hence produce active ingredients and formulate them into finished products at local production facilities. Their basic research tends to be highly focused in their field of expertise. LANGFORD INC. is an example of a company that falls into this group.

The fourth group is similar to the second one, in that companies in this group import active ingredients from abroad. The difference is that they are not part of a multinational chemical company that are actively researching and developing chemical compounds. The members of this group are commonly called the generic manufacturers because they formulate products based on active ingredients that were developed by other companies and on which patents have expired. They are able to copy these ingredients because the original manufacturer has to provide the regulatory agency with the complete fabrication secrecy in order to receive a license for the drug. Once the patent runs out, on the basis of the "Freedom of Information Act", the regulatory agency makes the process information available to anybody interested in it. In some rarer cases, these manufacturers have obtained from the original manufacturer the license to produce a particular drug. The animal health business unit of CANADA PACKERS is an example of a company that fits into this group.

The Canadian Animal Health Institute is the trade association of manufacturers of animal health products. It currently has 36 members who produce approximately 80% of all animal health products sold in Canada. The institute views itself as the official, collective voice and also conscience of the Canadian industry. As such, it represents and communicates the collective interests of its members to governmental regulatory agencies, veterinary associations, the livestock industry, and the public at large.

### Wholesale Level

Two levels of wholesale can be seen in Figure 1: The first comprises distributors, the second consists of veterinary buying groups and central purchasing departments of larger feedmills. Looking at the first, fifteen years ago the wholesale level was virtually made up of distributors only. Most of these distributors solely focused on animal health products. They usually carried product lines of several manufacturers in order to have a complete offering and to make full use of their sales force capacity.

The number of those distributors has declined markedly over time and only a small fraction of total industry sales are currently sold through those who remain--(CENTRAL SALES, and ORMOND are two of the survivors in Ontario. This happened because some manufacturers integrated forward by buying up distributors while others established their own sales force. The underlying reason for both actions lies in the paramount importance attributed to personal selling as a promotional tool in this industry. The end result of both approaches was that there was less business available for distributors.

The marked decline in the number of independent distributors over time suggests that the potential benefits to manufacturers of performing the distribution function themselves outweighs the costs of operating and managing their own sales force. In the case of forward integration, the manufacturer obtains the additional benefit of an established distribution network. To increase sales so as to utilize the sales force's full capacity, distribution (preferably exclusive) of complementary product lines for other manufacturer's is commonly done. In fact, most of the companies interviewed acted as exclusive distributor for other manufacturers.

The second layer in the wholesale level comprises of central purchasing departments of large feedmills and veterinary buying groups. The reason for both types are threefold: First and foremost, they increase the bargaining power of the buyer vis-à-vis the supplier, secondly, quantity discounts can be obtained, and thirdly, the amount of paperwork involved can be reduced.

Central purchasing departments have been standard practice for decades. SHURGAIN (CANADA PACKERS) and COOP are two examples of national feedmills with them.

The formation of private veterinary buying groups--either voluntary or through government--is relatively new, but important as industry participants estimate that 70-80% of all drugs sold through veterinarians are currently being purchased by them. Voluntary groups exist in Ontario (Veterinary Purchasing in St. Mary's), British Columbia (AVP in Abbotsford), Alberta (Western Drug Distribution Center), and the Maritimes (except New Brunswick). Membership is voluntary. To become a member, a veterinarian buys a certain amount of shares in the organization. In addition to the benefits described above, these organizations also help members by providing overnight delivery and allowing the purchase of small quantities of a broad range of products. Provincial government groups controlling the distribution of veterinary drugs are found in Quebec, Manitoba and New Brunswick. In Quebec, this government control ties in with a subsidies scheme for veterinary medicine and services directed at live stock producers (the VETICARE-Program). The program means that livestock producers can buy pre-priced medication since the retail markup is set by the provincial government and that part of the cost of veterinary services is being borne by the government.

Some interviewed participants stressed the fact that they detailed most veterinarians regardless of whether they were "organised" or not. In marketing terms, this commitment reflects the importance of the pull strategy as a component of their overall promotional strategy.

### Retail level

The retail market is divided on the basis of the retail channel into two segments, the veterinarian segment (also called professional or ethical segment) which handle about 70% of wholesale sales and the over-the-counter (OTC) segment which handles about 30%. The size of the boxes at the retail level in Figure 1 represents approximately the relative importance of each group in terms of sales volume of pharmaceuticals and biologicals measured in manufacturer's prices.

The distinction between the two segments is that drugs requiring a prescription can only be sold through the veterinarian segment. Each segment further comprises an independent and an organised or integrated group. An "organised" veterinarian is a member of a veterinary buying group. An "integrated" OTC dealer is either an outlet belonging to a larger feedmill or an independent outlet that carries the feedline of a larger feedmill (franchise) and therefore is offered to take advantage of the latter's central purchasing of animal health products.

The total number of veterinary clinics as reported by the Canadian Veterinary Medical Association across Canada is 1803. The provincial breakdown of clinics by region and veterinarians by area of specialization is listed in appendix C.

About 700 OTC retail outlets are licensed to sell animal health products, according to the Ontario Livestock Medicines department at Guelph Agriculture Centre. Licenses are divided into two classes: [1] All animals and [2] Poultry/Fowl). To sell products for any target animal

species, retail outlets must have licenses for both classes. In Ontario, whether and what kind of a license can be obtained is determined by an official of the Livestock Medicines Department who inspects each prospective outlet.

### **Regulatory Agencies**

The most important regulatory agency affecting the Animal Health industry is the Bureau of Veterinary Drugs in Ottawa. This agency is part of the Health Protection Branch which in turn belongs to the Ministry of Health and Welfare Canada. In addition Veterinary biologics are regulated by Agriculture Canada under the Animal Disease and Protection Act and Regulations. All pharmaceuticals marketed in Canada must comply with the requirements of the Canadian Food and Drugs Act and Regulations.

In 1963, the Food and Drugs Act was submitted to a major revision. All drugs that were sold prior to 1963 were accepted as having valid licenses. Drugs developed since then must meet stringent requirements. From the manufacturer's perspective, the status of a proposed drug has important implications for the registration procedure. A proposed drug can fall in either of two categories: [1] "new drugs" or [2] "non new drugs". An exact copy of a drug already marketed in Canada, for instance, is considered a "non new drug" and this reduces the registration procedure to a minimum. A proposed drug falls into the "new drug" category if the drug is, broadly speaking: a.) a new drug entity (contains or consists of a new substance), b.) a new combination ( an ingredient added or taken out), or c.) a new claim ( for another species, route of administration...). For a new drug to be licensed the manufacturer must disclose the manufacturing method, provide satisfactory evidence supporting the drugs' safety and effectiveness, and submit appropriate labelling.

In the following sections, we will take the manufacturer's perspective. First, the business environment will be looked at in terms of the market and its dimensions as well as the competitors and their profile. Then the environmental trends facing the industry will be discussed.

### III. BUSINESS ENVIRONMENT

The business or task environment can be defined as all the factors in a firm's or industry's immediate situation that affect it directly. A business environment analysis thus commonly focuses on the activities and intentions of customers, competitors, factor suppliers, and government agencies. The ultimate objectives of such an analysis are to identify the key success factors, that is, the core capabilities a company must have to perform well, and to estimate the growth and profit potential for a business in this environment.

In this study the business environment discussion is organised into two parts: The first part looks at the market size and its different segments concluding with growth potential estimates, identifies the key success factors and finally discusses the competitive forces. The second part presents the profiles of selected competitors.

In light of the limited availability of both quantitative and qualitative industry data, the analysis largely builds on information collected in interviews.

#### 1. The Canadian Animal Health Market

##### **1.1 Market Size**

The animal health market comprises all veterinary drugs and biological products sold both for therapeutic and preventative purposes. There are no official statistics reporting these figures. Probably the most reliable figure for total sales stems from the annual surveys conducted by an independent market research firm for the Animal Health Institute. In this survey, the Institute's members report their sales for animal health products priced at the manufacturer's level. Since the 36 members reported total sales in 1986 of \$ 170 million, and they are estimated to produce approximately 80% of all animal health products sold in Canada, total sales for the entire industry in 1986 were approximately \$ 213 million.

##### **1.2 Market Segmentation**

The animal health market can be segmented in numerous ways. We will discuss four alternative approaches. Considerable emphasis is placed in discussing these segmentations because they are also used in profiling the scope (product/market coverage) of the different competitors.

##### **By Product Category**

The three broad product categories commonly used to segment the market are: [1] Biologicals, [2] Pharmaceuticals and [3] Feed additives. **Biologicals** include products used to create immunity to disease in animals such as vaccines, bacterins, and antitoxins. They accounted for about 12 percent of total animal health product sales in Canada in 1986. **Pharmaceuticals** include a host of different products for both therapeutic and preventative use. Subcategories are antibiotics (in various dosage forms), antiparasitic drugs, antimastitis preparations, hormones, scour products, antiinflammatory products, vitamins just to name the major ones. They accounted for about 53% of total animal health sales in Canada in 1986. **Feed additives** include products used to control or prevent disease and enhance growth or improve

feed efficiency. Subcategories are antibacterials and nutritional products (vitamins and minerals). They accounted for 35% of total animal health sales in 1986. Total sales by product category as reported by the members of the AHI are shown in Table 1.

### By Geographic Market

Segmentation by geographic market is useful because there are some clear-cut differences among the provinces in the size and relative importance of the various species in the livestock populations, the primary language spoken, and provincial regulations affecting distribution.

Table 1: Sales distribution by geographic region and major product category

Province	Biologicals		Pharmaceuticals		Feed Additives	
	(\$1000)	%	(\$1000)	%	(\$1000)	%
B.C.	1,444	7.0	6,400	7.1	2,450	4.2
Alberta	3,900	18.8	17,330	19.3	7,300	12.4
Saskatchewan	1,025	4.9	3,770	4.2	1,500	2.6
Manitoba	1,650	7.9	6,300	7.0	7,100	12.1
Ontario	7,600	36.6	29,900	33.2	18,600	31.7
Quebec	4,300	20.7	22,600	25.1	19,600	33.4
Maritimes	841	4.1	3,700	4.1	2,150	3.6
<b>TOTAL</b>	20,760	100	90,000	100	58,700	100

Source: Independent consultant to the industry

Sales distribution by geographic region and major product category are presented in Table 1. More than 75% of total sales across all three categories are sold in Ontario, Quebec, and Alberta. This reflects the importance of livestock production in these provinces. Ontario and Quebec together account for about 61% and 72% of Canada's swine and dairy cow populations, respectively, whereas 40% of Canada's beef cow and heifer population stands in Alberta (Livestock report, Statistics Canada, September 1987).

As can be seen, Ontario is the major market for both biologicals and pharmaceuticals. With regard to feed additives, Quebec is the largest market. The reason being that Quebec has the country's largest swine and second largest poultry/fowl population which are the major target animal species for feed additives.

## By Retail Distribution Channel

The breakdown of the market by retail distribution channel has already been mentioned when we discussed the industry structure. The animal health market is virtually split into two distinct segments: The over-the-counter (OTC) market and the veterinarian market. The Bureau of Veterinary Drugs determines which retail distribution channel a given product may be sold through. The crucial distinction is that drugs requiring a prescription must only be sold through veterinarians. These products generally require a veterinarian's special training in animal disease diagnosis and treatment to assure their proper use. Products that are approved for OTC sale, on the other hand, are generally those that a layperson can use by paying strict attention to the label directions and whose administration does not require special training. A product approved for OTC sale, of course, may be sold through veterinarians too. As a result veterinarians compete directly with OTC in selling certain products to the end-user.

The segmentation of the market by retail distribution channel is a common practice among manufacturers. The importance that is being attributed to this segmentation can best be illustrated by the many manufacturers who have different brand names for the two retail channels. Table 2 lists a few examples. In some cases the two segments are even served through distinct marketing and sales groups.

Table 2: Examples of companies serving the two retail channels under different names

Company	Veterinary group	OTC group
PFIZER	ROGAR/STB	PFIZER
SANOFI	PVU	APA
TUCO	UPJOHN	TUCO
BAYVET	HAYER	CUTTER
CANADA PACKERS	MTC	DNL
DISPAR	AUSTIN	DISPAR
PIONEER	DIAMOND Scientific	PIONEER

Manufacturers pursuing such a marketing strategy tend to market the OTC products under their original company name. The products sold to veterinarians on the other hand are usually marketed under the name of a Canadian manufacturer or distributor which they have taken over. This strategy clearly involves a trade-off. The potential benefits from brand recognition of the original manufacturer are foregone in order to avoid the potential negative impact resulting from sale of the same product under the same name through both channels.



The principal reason for following this strategy, according to industry participants, is to please the veterinarians. Having two separate brands means that when they are sold to the end user, different prices can be charged for each brand even though the product is the same. Thus veterinarians can mark up the drug by 40-60%, while the OTC side "lives" on a 10-20% markup. Industry personnel point out that veterinarians are justified in charging higher prices because they are selling their knowledge and professional advice as well as the product.

Table 3 shows the total animal health sales by major product category and distribution channel for 1985 and 1986.

Table 3: Total animal health sales by product category and distribution channel (in \$ 1000)

Distribution Channel	1985				1986			
	Biol.	Pharm.	FA	Total	Biol.	Pharm.	FA	Total
Veterinarian %	14,600 80	51,000 65	-- --	65,600 43	17,000 82	60,000 66	-- --	77,000 45
OTC %	3,600 20	28,000 35	56,000 100	87,600 57	3,800 18	30,900 34	58,700 100	93,400 55

Source: Independent consultant to the industry

The distribution of feed additives needs some explanation. As can be seen from the table, all sales of feed additives are stated as going through the OTC channel. This is done because feed additives are incorporated into the feed which is sold through the feed mills and their outlets. From a regulatory standpoint, some additives have to be prescribed by a veterinarian--feed additives used for therapeutic purposes, for instance. If the farmer goes to a veterinarian for his problem, the veterinarian will not provide the product but rather provide a prescription for the farmer to his feedmill: It appears that a few veterinarians have specialised in that particular activity in each province. This prescription is good for a certain time period (in Quebec it is good for one year). Larger feed mills tend to have a veterinarian on staff who can provide this prescription. The result is that veterinarians do not compete with OTC for sales of feed additives as is the case for pharmaceuticals and biologicals. Therefore, marketing of feed additives can be looked at as involving only the OTC channel.

In 1986, 55% of the total industry sales were distributed OTC; down by 2 % from 1985. If we exclude the feed additives from the calculation for the above outlined reason, about 31% were sold OTC, down by 2%. This is the proportion that was used to reflect the relative importance of the retail channels in Figure 1.

## By Target Animal Species

Segmentation by target animal species is sensible for several reasons. If a manufacturer wants to extend the claim of an existing product to include another animal species, the drug is considered a new drug by the regulatory authorities, that is, the manufacturer will have to provide sufficient proof that it is effective and safe when used in a different animal species. Moreover, veterinary clinics are commonly broken down into small and large animal clinics. Finally, a poultry producer differs in many characteristics from a beef producer which would appear to warrant targeting each with a distinct marketing mix.

Actually segmenting the markets is not always easy. In the antibiotics category some universal drugs such as Penicillin or Tetracycline make accurate measurement of drugs used by specific animal species difficult. To further illustrate this point consider Antimastitis preparations. While they are primarily used in dairy cows, the same products may also be used to treat or prevent mastitis in small ruminants (goats or sheep) if approved for these species. This means that segmentation by target animal species is more feasible and useful for some drugs than for others.

The biologicals, in particular, lend themselves well for a breakdown by species. The highly specific nature of biologicals make for an accurate measurement of the target animal segments. Thus, biologicals are commonly segmented into avian, bovine, porcine, ovine, caprine, feline and canine biologicals.

A suitable segmentation of feed additives by species would encompass poultry, swine and possibly cattle, the reason being that the intensive and highly automated livestock production of poultry and swine account for the bulk of feed additives used.

Segmentation of pharmaceuticals by species provides mixed results as these consist of a range of different products, some of which are highly specific for instance injectable iron for piglets, others of which are used across all animal species, with only the dosage differing because of the differences in liveweight (e.g. Penicillin). This suggests that the feasibility and usefulness of a segmentation by animal species here should be considered on a product by product basis.

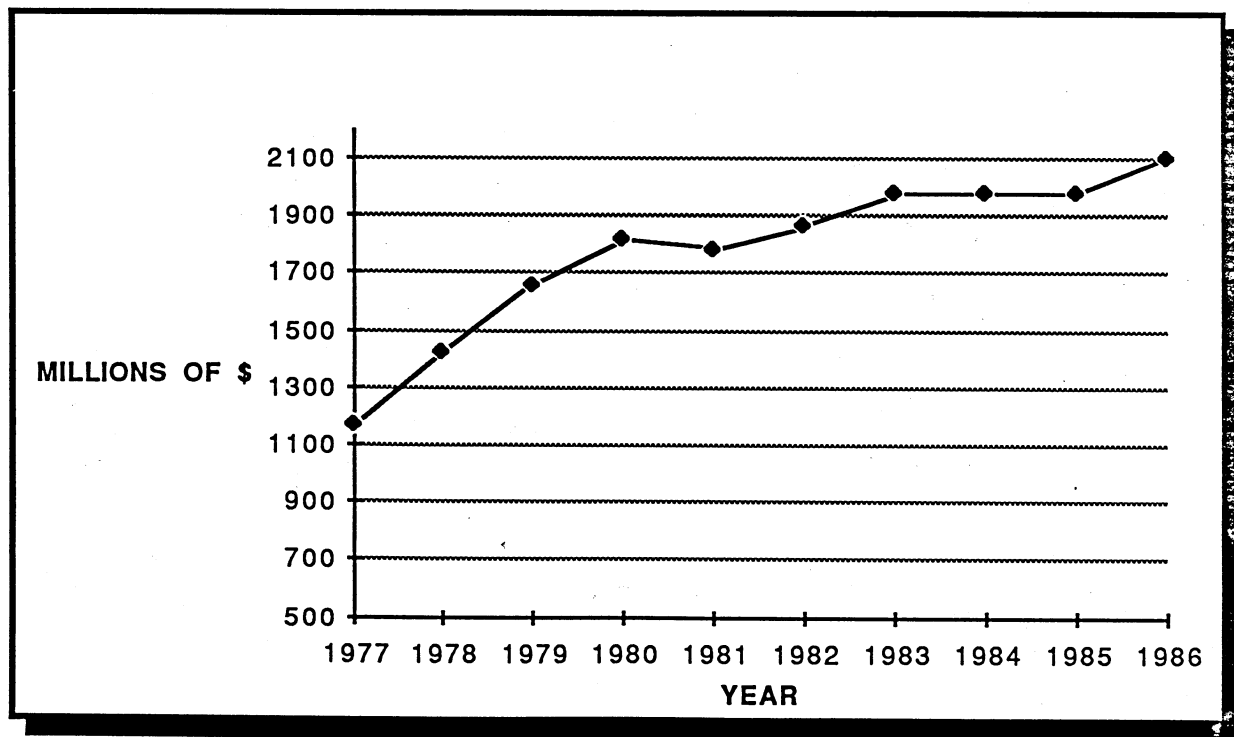
In many cases a "middle ground" position of dividing the market into companion animals (cats, dogs, horses) and food producing animals appears to be both the most feasible and most meaningful approach to segmenting the market by types of animals. The underlying reasons are twofold: First, many veterinary practitioners specialise in either one or the other. Secondly, the owners of companion animals differ from those of food producing animals. The most relevant difference from a manufacturer's viewpoint is that owners of companion animals are less price sensitive.

### 1.3 Market Growth

Total animal health sales as reported by the CAHI members rose by 8,5% from 1985 to 1986. Growth by major product category was most pronounced in biologicals (14%), followed by pharmaceuticals (13%). Sales of feed additives grew by 3,5% only. In comparison, the total animal health sales as reported by the US Animal Health Institute showed an increase of about 6% over the same time period. Broken down by major product category the respective growth rates by products were pharmaceuticals and feed additives up by 7%, and biologicals up by less than 1%.

Unfortunately, industry sales figures prior to 1985 could not be obtained for Canada. Since the US AHI releases these figures to the public, we will use the US figures to illustrate the market growth over time. We recognise the limitations of this approach but feel that the pattern identified in the US figures will roughly hold true for Canada in light of the many similarities in the livestock production in the two countries. Figure 2 traces the US animal health sales as reported by the AHI members in the annual domestic net sales survey over the last decade. As can be seen, there has been rapid and steady growth up to 1980. Since 1980 growth has slowed down and has even been slightly negative in 1981 and 1985.

FIGURE 2: US ANIMAL HEALTH SALES (1977-1986)



Source: US ANIMAL HEALTH INSTITUTE (Figures based on member survey results)

Several conclusions can be drawn from Figure 2. Since 1980, total industry sales have fluctuated but have been roughly level in real terms. This observation is consistent with the comments made by the majority of those interviewed. They stated that the nominal growth rate was in line with the inflation rate or slightly higher. It was pointed out, however, that deviations from a stable growth rate could result from launching of a new superdrug(s).

According to industry participants, the sizeable fluctuations in sales from year to year can best be explained by breaking the market into companion animal and food producing animal market segments. While sales to the companion animal market segment appear to have shown steady growth, sales to the food producing animal segment are subject to major fluctuations and can cause drastic changes in total sales. The root behind these shifts are changes in the political,

economic, climatic variables that affect the profitability of livestock and poultry production, and thus bring about increased or decreased animal health populations.

Data on the world animal health and nutrition market interestingly matches the trends depicted above. According to a report published by Animal Pharm, the world animal health and nutrition products market rose by 14.5% from US \$ 7.975 billion in 1985 to US \$ 9.135 billion in 1986 as measured in prices to the end-user. This corresponds to a real growth of only 0.9% with the depreciation of the US dollar taken into account. The breakdown by target animal species is reported to be: cattle (32%), poultry (24%), swine (21%), sheep (10%), horses (4%) and other species (9%).

Growth in the next two years is expected to be modest and by 1991 the distribution of total end-user value sales by product category is projected to be the following:

Feed additives	: 42.3% down by 1.6%
Pharmaceuticals	: 45.4% up by 1.3%
Biologicals	: 12.3% up by 0.3%

Summarizing, we can conclude that sales of animal health products are likely to remain fairly stable over the next few years, particularly in developed countries. Growth, if any, will be due to novel new products.

#### 1.4. Key Success Factors

Key success factors are defined as the factors that are key to success in a given business environment. It is important to note that these key factors apply to all firms operating in a given industry at a given level. Concepts like critical success factors or core capabilities essentially revolve around the same question: What capabilities make a company perform well in the given business?

The ten industry participants were asked what they viewed as key to success in their business. Most respondents mentioned two or three factors while seven factors were mentioned in total. The most frequently mentioned factors were in order of importance:

1. Personal selling
2. Research and development
3. Differentiated marketing

Personal selling means establishing a good rapport with one's customers, especially veterinarians. This is done by providing them with professional and knowledgeable support, and seeking to serve customer's needs. The fact that personal selling is viewed as the primary key success factor reflects the pivotal role that manufacturers attribute to veterinarians and sales staff at OTC outlets in helping sell product. Since most Canadian "manufacturers" are primarily marketers of animal health products, the paramount importance of personal selling is not surprising.

Research and development are important since products are subject to their own life-cycles and are only patent protected for ten years. Therefore, research and development is needed to produce novel or modified (improved) products. Recent history of the industry provides numerous examples where competitors were not able to survive largely because research and development failed to produce successful new products.

Differentiated marketing encompasses the idea of identifying one's customers' needs and tailor the marketing strategy to meet those needs. Comments were often made about the importance

of differentiating between the OTC and veterinary side of the market in order to better meet customer needs.

Other factors mentioned in interviews seemed to reflect a perceived competitive edge of a company due to its particular position in the industry, such as having own manufacturing in Canada or being flexible implying quick decision making (independent company). Since a competitive edge could probably not be sustained if say the majority of manufacturers set up their production facilities in Canada, such factors cannot be regarded as key according to our definition.

### 1.5. Competitive Forces

The term "competition" is widely used and, since it is a broad concept, it often means different things to different people. Here, we will discuss competition using Porter's model of competitive forces. This model suggests that the state of competition in an industry depends on five basic competitive forces: (1) entry/exit barriers (2) power of suppliers (3) power of buyers (4) pressure from substitute products and (5) rivalry among competitors (here manufacturers/wholesalers of animal health products). The collective strength of these forces, which is shown in Figure 3, determines the ultimate profit potential in the industry as measured in terms of long run return on invested capital.

Subsequently, the five forces as they apply in the animal health industry are discussed. The single strongest force identified is the rivalry among competitors. Major underlying reasons are the number of competitors, the little growth in the industry, and the threat of acquisitions. On the other hand, the force is tempered principally by the degree of differentiation in this industry.

The barriers to entry are high because of the strict government regulations and high capital requirements for research and development. Costs of production are a factor for generic manufacturers while capital requirements are of lesser importance in this case. Entry would appear to be most feasible through acquisition.

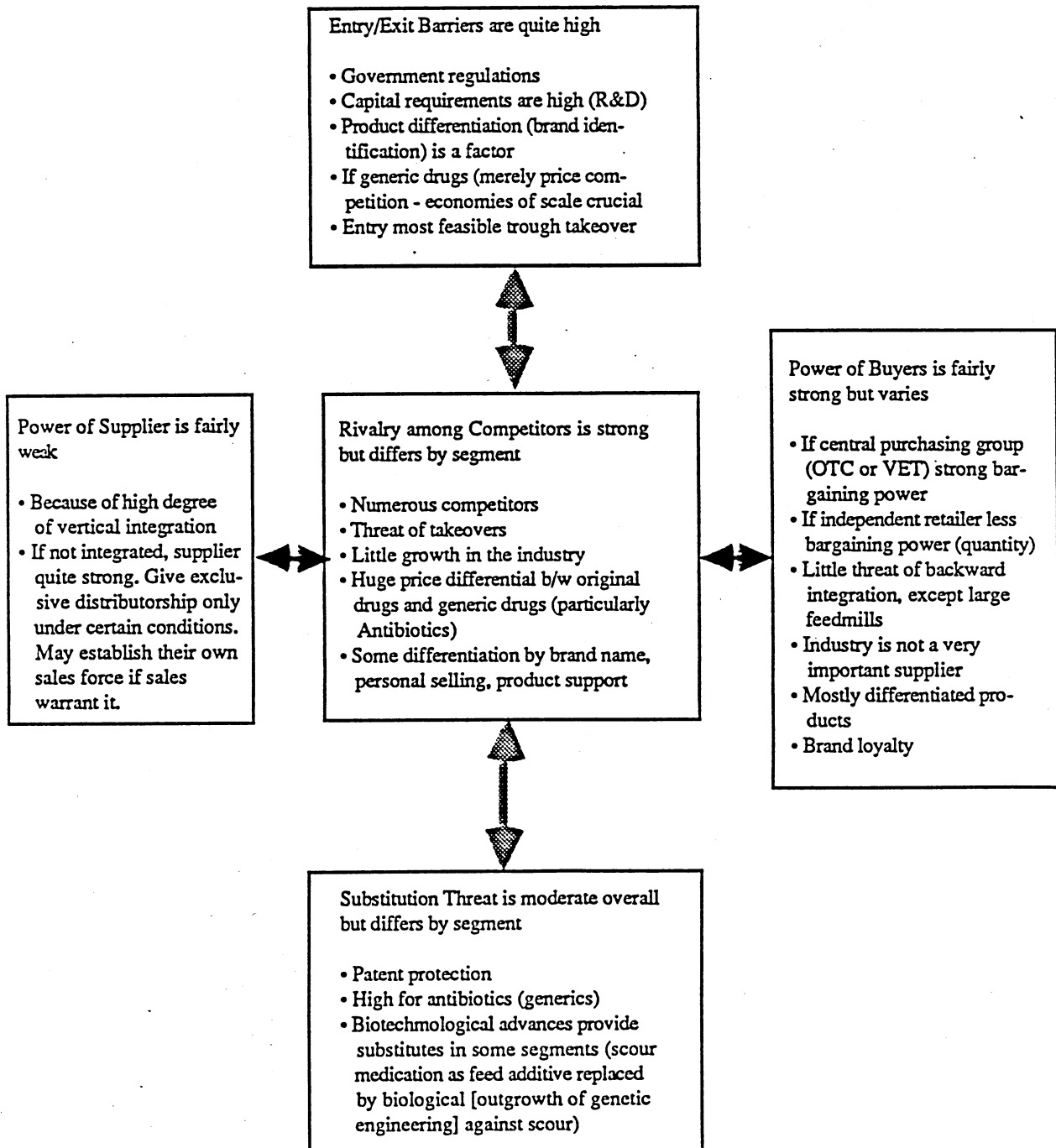
The bargaining power of buyers is assessed as fairly strong overall. Central purchasing makes for a strong bargaining power which is tempered, however, by the fact that animal health products are mostly differentiated and brand loyalty is quite high.

The bargaining power of suppliers is fairly weak overall. This is because of the high degree of vertical integration in the industry. Yet, if the company is not vertically integrated the power of suppliers of finished goods (for distribution) or active ingredients (for formulation) is quite high.

The threat of substitute products is moderate overall but differs by product category. It appears to be particularly high for antibiotics because of pressure from cheap generics. Biotechnology advances are also likely to provide substitutes in the near future.

In summary, the collective impact of the forces driving industry competition is quite high, the single most important force being rivalry among competitors. Thus, competition is quite intense which would appear to hold for the future too.

Figure 3: Competitive forces in the animal health industry



## 2. COMPETITOR ANALYSIS

In this section ten animal health product manufacturers are described in alphabetical order. Each company profile is organised into four parts: background, scope (Product/Market strategy), capabilities and future goals. Parts 1,2, and 4 largely draw on the data gathered in the course of the personal interview conducted with management in the respective firms. In addition, information from published company data such as promotional material and annual reports has been used. Part 3 draws on both the "self-analysis" of management of the company in question and the perceptions of other industry participants.

Before the companies are profiled, research and development need to be defined. Research and development encompasses four broad steps of activities. [1] Discovering a new product (compound) [2] Developing a useful product [3] Clearing the drug for the market and [4] Securing government approval. In this study, the first two steps are called basic research and development.

Only one of the ten companies described in this study was active in basic research and development in Canada. Basic research and development for the multinational agricultural companies appeared to be centralized at their US or European head offices. The bulk of basic research is done by large multinational corporations because of the enormous capital requirements for these activities. Figures reported by US Animal Health Institute member firms illustrate this point. The average investment required to research and develop a growth promoter for use in beef cattle was reported to be \$18 million over a time period of ten years. The development of a new product for controlling worms in cattle requires, on average, more than \$16 million and eight years. Thus, most research and development conducted in Canada entails steps three and four.

In Appendix D, the organization charts of each company are shown so as to help the reader visualizing the differing organizational structures used by the selected companies. Appendix E and F compile some of the pertinent data of the profiled companies in a summarizing format.

### AYERST LABORATORIES

#### **Background**

AYERST LABORATORIES, headquartered in Montreal, is a subsidiary of American Home Products (AHP), a US multinational which is primarily active in the human pharmaceuticals business. Products are marketed through three different marketing groups: WHITEHALL LABORATORIES (OTC), AYERST and WYETH.

The relative importance of the animal health business to AHP's overall sales is worldwide very minimal. Canada represents one of its major markets for animal health products. Only in Canada the animal health products are marketed under AYERST name, in all other countries they are sold under the FORT DODGE label. Part of the reason for using the AYERST name in Canada is that AYERST originally was a Canadian company with a well recognised animal health business and hence the name enjoys high brand recognition.

The AYERST Products Division in Canada is headed by a President, who has two Vice-presidents and two directors reporting to him. The Vice-president of marketing and sales has three directors reporting to him, one of which is in charge of the animal health products. The

director of the animal health division in turn has a marketing manager (veterinary pharmaceuticals), a product manager (biologicals) and a national sales manager reporting to him. The sales force comprises eleven sales representatives. Research and development is done in the US (at Fort Dodge). While pharmaceuticals are manufactured in Canada, all other products are imported as finished goods.

### Scope

AYERST's product range includes pharmaceuticals and biologicals. In the pharmaceuticals category, the company's major segments are antimastitis preparations, antibiotics and hormones. In the biologicals category it offers products for cattle, horses and pets. Over 80% of the total animal health sales are in the food producing animal segment. Geographically Ontario (31%) is the major market followed by the Western Provinces (28%) and Quebec (27%). AYERST products are almost exclusively sold to veterinarians (90%) and biologicals make up about 42% of total sales. Within the last three years, seven products were launched on the Canadian market. AYERST LABORATORIES is the exclusive distributor for BEECHAM pharmaceuticals (antibiotics and antimastitis preparations) in Canada.

### Strengths and Weaknesses

AYERST has an outstanding sales force both in terms of its reputation and loyalty. Nine out of eleven sales representatives have been with the company for over 17 years. As a result the sales force is known to have established excellent rapport with veterinarians which, when combined with their good training, make for its reputation.

A major weakness is that many of the salesmen are near retirement age soon. Research and development was seen as relatively weak too.

### Future Goals

A major effort will be made to carefully plan and implement the recruiting and training of sales force replacements so as to smooth out the transition. The company currently closely observes the progression of the diagnostics segment and might consider entering it by means of acquisition.

The recent acquisition of BRISTOL-MYERS has provided the company with a sizeable range of mostly complementary products. In view of the fact that a few BRISTOL-MYERS products compete to some degree with AYERST's existing BEECHAM product line, the company is carefully evaluating the positioning of these products when making them available to the practitioner.



## BAYVET

### **Background**

BAYVET is the name of the animal health business of the German multinational BAYER, the world's third largest chemical company. The animal health business unit together with the crop protection unit forms the agro-division (CHEMAGRO).

In 1974 BAYVET took over the US company CUTTER LABORATORIES which consisted of two marketing groups: HAVER which served the veterinarian segment and CUTTER for the OTC segment. Since then BAYVET has marketed its products under these two established brand names.

BAYVET CDN has about 20 employees and is headed by a General Manager. The areas reporting to him are: Marketing, sales, and technical services. Sales are divided into East (Ontario eastward) and West (Manitoba westward). Each regional sales manager has four sales representatives reporting to him. Research is almost exclusively done in Germany. The three major products are manufactured at the CHEMAGRO production facilities in Canada. Several products are being custom manufactured by CANADA PACKERS and CONTINENTAL CDN.

### **Scope**

BAYVET is actively involved in the biologicals and the pharmaceuticals segment. In pharmaceuticals, its offerings consist primarily of antiparasitic drugs, a product area in which it is a leading company. BAYVET's biologicals line is broad and comprises products for all food producing animal species plus a major line for horses.

HAVER, the products marketed through the veterinarians, account for about 65% of total sales. Biologicals make up 30% of sales and approximately 60% of total sales are made in the West. In the past 3 years only one new product has been launched.

### **Strengths and Weaknesses**

The large financial resources available to the company were seen as a primary strength. Also, the company is backed up by strong research, particularly in the area of antiparasitic drugs.

Statements regarding the quality of the sales force varied.

On the negative side, the mature relatively narrow product range which is heavily weighted toward antiparasitic drugs stands out. The company also has an identity problem because the brand name BAYER must not be used in Northamerica for any product sold by BAYER. This is the result of a concession made after World War II between Germany and the US, which gave the right to use this brand name ,BAYER, to STERLING DRUGS for use in selling Aspirin. Therefore, BAYER markets its human pharmaceuticals under MILES laboratories in Canada.

BAYVET is perceived as conducting aggressive marketing in terms of pricing and promotional activities.

## **Future Goals**

BAYVET will be expanding its current product line by entering the antibiotics segment. Products already exist but they need to be cleared for the Canadian market. In addition, new applications for existing products are being sought. Completely new products will be introduced to the market shortly.

## **CANADA PACKERS INC.**

### **Background**

Canada Packers expanded its animal health business about a year ago when it acquired K-VET, a generic manufacturer located in Cambridge. Until then, Canada Packers' production facilities for animal health products had been limited. The acquisition of K-VET provided it with sterile manufacturing facilities. Referring to Figure 1, Canada Packers is a generic manufacturer. The company markets products to veterinarians under the M.T.C. pharmaceuticals label while the OTC side is served through the DAVIS & LAWRENCE group. In addition, Canada Packers' SHURGAIN feed division represents one of the major players in the OTC retail level through its integrated retail outlets.

The General Manager of the animal health group has the plant manager, the product manager for DAVIS & LAWRENCE, and the sales and marketing manager for the M.T.C. products directly reporting to him. The M.T.C. side comprises of a sales force of 10 people across Canada, whereas the OTC side currently has only one sales representative (Ontario). Therefore, distributors are being used for the OTC side.

### **Scope**

The company markets a broad range of products covering all three major product categories. Major areas of manufacturing are antibiotics and nutritional products. Custom manufacturing is done for both OTC and veterinary products (some products for BAYVET, COOP).

CANADA PACKER'S animal health division has the exclusive distribution rights for RHONE - POULENC's rabies vaccines, PITMAN-MOORE (Biologicals and pharmaceuticals), and CONNAUGHT (equine biologicals) to name the most important ones.

### **Strengths and Weaknesses**

The company has a full line of animal health products. Its strength primarily pertains to the products it exclusively distributes such as the rabies vaccines of RHONE - POULENC's. The company views itself as the top generic manufacturer in the industry.

Its sales force for the veterinary side is one of the largest ones. The quality of the sales force, however, was generally assessed as mediocre. The dependency on exclusively distributed products can be viewed as a weakness. PITMAN-MOORE recently changed ownership which may result in CANADA PACKERS losing the exclusive distribution right for their products (such distribution contracts typically have an escape clause that comes into effect with a change in ownership).

## Future Goals

The firm will continue to look for opportunities for the manufacture of generic drugs. In addition, it will consider taking on exclusive distributorship of nearly any product provided it does not conflict with existing products or agreements.

## COOPERS AGROPHARM INC.

### Background

COOPERS was formed in 1984 from the interests of BURROUGHS-WELLCOME and IMPERIAL CHEMICAL INDUSTRIES (ICI) in animal health worldwide. The merger resulted in the world's fifth largest animal health company. In most of the currently 57 subsidiaries ICI holds 51% of the shares. COOPERS was set up as a new entity and is dedicated solely to animal health and productivity throughout the world.

COOPERS AGROPHARM, the Canadian subsidiary employs about 40 people. It is merely a marketing organization and performs no manufacturing. Some of their products are custom manufactured in Canada but the bulk is being imported as finished products (COOPERS has production facilities in 32 countries). There are two branches, one in Calgary and one Ajax, near Toronto, where the main office is located.

The company is headed by the president who has two group product managers (PM) and two district sales managers reporting to him. The group PM I is primarily in charge of the ICI product lines and the PM II of those of WELLCOME. The sales districts are divided into East (Ontario eastward) and West (Manitoba westward). Each sales manager directs six sales representatives. The support staff consist of technical services, warehousing, and office staff. Basic research is conducted in the United Kingdom and the USA (Kansas City).

### Scope

COOPERS Agropharm sells products of the biologicals and the pharmaceuticals category. Their product range within the pharmaceuticals category encompasses a fairly wide spectrum, the two most important subcategories being antibiotics (sulfadruugs) and hormones. The company has launched five new products over the past three years and two new ones are waiting for governmental approval.

About 70% of sales are marketed through the veterinarians. The food producing animal segment accounts for about 85% of sales. About 50% of total sales are made in the West.

### Strengths and Weaknesses

Two outstanding products, a sulfadruug and a reproductive hormone, are best sellers in their respective categories and are the cornerstones of the company. The sales force is viewed overall as good.

The fact that COOPERS serves both retail channels with the same sales force may be seen as a drawback.

## **Future Goals**

COOPERS will strive to maintain its leadership role in the reproductive hormones product market. Moreover a new, improved version of their existing sulfadrug will be launched shortly. To broaden its product range, COOPERS plans to enter the feed additive segment.

## **LANGFORD INC.**

### **Background**

LANGFORD LABORATORIES was founded in 1975 by Dr. Charles Povey and Dr. Michael Wilson, both of whom were veterinarians and university professors, as a developer and manufacturer of veterinary biologicals. The company is the only true Canadian manufacturer of animal health products as defined in Figure 1.

Since its inception in 1975 the company has grown substantially and through the acquisition of their former distributor ARMITAGE CARROLL of London, Ontario in 1985 virtually became overnight a supplier of pharmaceuticals too.

LANGFORD INC. is a privately held company owned by Dr. Povey (50.1%) and CYANAMID Canada Inc. (49.9%) which bought Wilson's shares in 1985. CYANAMID is a major player in the feed additive segment and among the four companies which are at the forefront of developing the Recombinant Bovine Somatotropin. The CYANAMID connection provides LANGFORD with management and financial back-up.

The firm currently employs about 55 people and is headed by Dr. Povey, the president and C.E.O.. Reporting to him are the directors of production, marketing and sales, research and regulatory affairs, the controller and the operations manager. The director of marketing and sales has reporting to him a sales and marketing manager the administration manager, and two market development specialists for large and small animals respectively. The marketing and sales manager in turn has two regional sales managers reporting to him who are in charge of six (Ontario and West) and four (Quebec and East) sales representatives respectively.

Research and development is done in the following way: LANGFORD identifies potential projects and then contacts the Canadian veterinary colleges. The projects will then be conducted at the college(s) on a contract basis whereby LANGFORD usually retains marketing and manufacturing rights.

### **Scope**

LANGFORD focuses on veterinarians as their only customers. It currently markets a wide range of pharmaceuticals including antibiotics and sulfonamides, anti-inflammatory agents, scour medication, nutritional products. The pharmaceuticals category accounts for about 45% of total sales. The company's biologicals offering comprises products for large animals and pet animals, and make up about 45% of total sales.

The company is the exclusive distributor of CYANAMID products to the veterinary profession and exclusively represents the veterinary market interests of DAVIS & GECK (Sutures) and LEDERLE Pharmaceuticals (specialty products). Approximately 75% of total sales are

products for food producing animals, and geographically about 30% of sales are made in Ontario, Québec, and the remainder of Canada respectively. Over the last three years the company has launched about 9 biologicals and 6 pharmaceutical products.

### **Strengths and Weaknesses**

Quick decision making and the image of being wholly Canadian were two of the most salient strengths.

The company was viewed as having a good range of products and close ties with the Ontario Veterinary College. Comments were made that LANGFORD's reputation heavily draws on the one of Dr. Povey's which can be seen as both a strength and a weakness.

### **Future Goals**

Veterinarians will continue to be the company's primary customers. Geographically, the company plans to enter the US market with the first of a series of new cattle vaccines in 1988. The company plans on establishing a market development specialist for swine and poultry too.

In 1991, CYANAMID has the option of buying the majority interests in LANGFORD INC., which by then hopes to be the strongest animal health firm in Canada.

## **MAY & BAKER CDN INC.**

### **Background**

MAY & BAKER is a wholly owned subsidiary of the French multinational chemical company RHONE-POULENC. The name MAY & BAKER has been used in the Commonwealth countries. RHONE-POULENC's animal health business is comprised in the sector called "Santé", which contributed about 21% to consolidated sales in 1986. Seventy five percent of the "Santé" sales were, however, realized with human health products.

MAY & BAKER CDN is divided into two divisions: [1] Chemicals and [2] Agrochemicals. The former is further organised into four business units one of which is animal health. The animal health business unit director has a product manager for animal health products, a product manager for nutritional products, and three sales representatives reporting to him. The support staff is comprised of a market analyst, a marketing assistant and a secretary.

No manufacturing is done in Canada and research and development is almost exclusively done in France.

### **Scope**

The company's current product range is relatively narrow. Its principal product category is feed additives (70% of sales), where it has a complete line of vitamins, is number one in methionine (an essential amino acid) sales, and offers some antibacterials. Its biologicals

account for about 25% of company sales and essentially comprise rabies vaccines for five species.

Products used in food producing animals make up about 90% of sales. Geographically about 30% of sales are made in Quebec, 40% in Ontario/Maritimes, and the remainder in the West. The OTC channel accounts for about 80% of sales. One national distributor is used on the veterinarian side (MTC pharmaceuticals). In the course of the last three years one feed additive has been launched.

### **Strengths and Weaknesses**

The company is among the leaders in the vitamin and amino acid product area. Its position in the biologicals segment will likely strengthen through the recent take over of VIROGENETICS INC.(US), a company specialised in the development of vaccines through genetic engineering, by its parent company.

A major weakness is the small sales force. In addition, the currently very narrow product line of veterinary pharmaceuticals does not warrant establishing a separate sales force to serve the veterinarians directly.

### **Future Goals**

MAY & BAKER has kept a low profile thus far. It appears that efforts will be made to change this. In conjunction with this, the company plans to take on its parent company's name in the near future. The company also plans to expand its range of products both through internal development and taking on exclusive distribution rights of complementary products from other manufacturers.

## **NORDEN LABORATORIES**

### **Background**

NORDEN LABORATORIES, originally founded by a practising veterinarian in the US in 1919, was acquired by the US chemical multinational SMITH KLINE in 1960. The name NORDEN has been retained for animal health products marketed to veterinarians in Northamerica, while in the rest of the world the parent company's name is used for all animal health products. Until recently, the Canadian animal health market was served through NORDEN US. NORDEN Canada was formed only in 1984.

The Canadian subsidiary is headed by a general manager who has the finance and marketing managers reporting to him. The marketing manager in turn has the sales and distribution manager under him. NORDEN Canada currently employs 22 people, of which 11 sales representatives. Manufacturing and basic research and development are exclusively done in the US.

In 1981, SMITH KLINE diversified by taking over BECKMAN, an instrument and diagnosis company. In October 1986, NORDEN acquired ADAMS VETERINARY RESEARCH LABORATORIES INC. of Miami, Florida, one of the country's leading developers and

manufacturers of ectoparasiticides and dermatological products for use in companion animal medicine. The complete ADAMS product line will be marketed exclusively through NORDEN.

### Scope

NORDEN only sells to veterinarians. Its product mix consists primarily of biologicals (currently 61 products accounting for about 70% of sales), some antibiotics and antiparasitic drugs. In biologicals NORDEN (SMITH KLINE) is worldwide number one. In addition the company offers diagnostics. In this product area, NORDEN is the exclusive distributor for SYNBIOTICS CORP. of San Diego, CA, (monoclonal antibodies and immunodiagnostics), CAMBRIDGE BIOSCIENCE CORP., of Hopkinton, MA (testkit for Feline Leukemia), and MOLECULAR GENETICS INC., of Minnetonka, MN (all animal health products).

In the course of the last three years 23 products (15 biologicals) have been launched in the Canadian market.

### Strength and Weaknesses

One of the company's most apparent strengths is its full line of biologicals supported by strong product promotion. It also seems to be one of the few animal health companies in Canada that has shown substantial growth over the last few years. The recent acquisition of ADAMS LAB. has significantly broadened NORDEN's product range. Moreover, SMITH KLINE is at the forefront in the development of porcine somatotropin.

On the negative side, the company was viewed as overly aggressive. Over the last three years, NORDEN has launched 23 new products and thus clearly is among the most innovative animal health marketers in this regard. Some industry participants, however, say that NORDEN seems to invent diseases and above all has in some cases failed to thoroughly test products before launching them, which has reportedly led to some accidents. Currently, manufacturing capacity, located in Nebraska, seems to be a bottleneck.

### Future Goals

NORDEN LABORATORIES has grown substantially over the last few years and will try to maintain growth. In order to become less vulnerable, further efforts will be made to become a major player in the antibiotics and antiparasitic drugs segments through both internal development and acquisition. In addition, the company will seek out opportunities to be the exclusive distributor of complementary products. By 1991, the company plans to have 15 sales representatives.

Diagnostics are believed to be the growth area in the future. NORDEN views itself as a pioneer in this field and plans to emphasize this area in the future.

## PFIZER

### **Background**

PFIZER Canada is a subsidiary of the US multinational of the same name. The company is actively involved in various businesses, the major one being human pharmaceuticals. Sales of animal health products account worldwide for about 10% of PFIZER's corporate sales. The animal health division of PFIZER Canada is the second largest worldwide. It is organized into two distinct marketing and sales groups, two manufacturing plants, and the research and technical services group, all of which report to the general manager.

The OTC sales and marketing group (PFIZER) is headed by a director and is comprised of a national sales manager, two product managers, three regional sales managers, and eleven sales representatives. The veterinary pharmaceutical product group (rogar/STB) is headed by a director and comprises two product managers, three regional sales managers, and ten sales representatives. Basic research and development is done in the US. Manufacturing, however is done in Canada. The two manufacturing plants are located in Cornwall and London, respectively. In Cornwall feed additives are produced whereas the London plant produces veterinary pharmaceuticals. The latter also produces products for PFIZER in other countries, as well as custom manufacturing. Altogether, PFIZER's Animal Health division employs about 120 people in Canada.

### **Scope**

PFIZER has a broad range of products covering pharmaceuticals and feed additives but no biologicals. In the pharmaceuticals category, its offering is comprised of antibiotics, antiparasitic drugs, antimastitis preparations, and scour products to name the major lines. PFIZER is the market leader in antibiotics. In the feed additives category, the company is one of the five major suppliers of antibacterials approved as growth promotants.

Sixty percent of company sales are marketed OTC, about 65% of which are feed additives. Products for food producing animals account for approximately 80%. Geographically, about 35% of sales are made in Ontario and Western Canada, respectively. Over the last three years PFIZER has launched one major product.

### **Strengths and Weaknesses**

The outstanding strength of PFIZER's is buyer recognition, particularly in the field of antibiotics where it was the original manufacturer. Moreover, it has a strong, well trained sales force. PFIZER is the industry leader in Canada with recognized expertise in the antibiotics product area. Having its own production facilities in Canada can be viewed as a strength because it provides more flexibility.

Having such a broad range of mature products is perceived to be a major weakness. Some competitors feel that the company lacks focus as a result of the large number of products carried.



## **FUTURE GOALS**

Although market segments such as biologicals and diagnostics are closely monitored PFIZER is likely to stay in its fields of expertise where it will try to maintain its leadership position (antibiotics) or increase its market share (other pharmaceuticals, feed additives). If the company decided to enter a new product segment, however, this would be accomplished through acquisition. PFIZER is likely to get involved in biotechnology through joint ventures shortly.

## **SALSBURY LABORATORIES LTD.**

### **Background**

SALSBURY laboratories, originally founded by a practising veterinarian in Iowa in the early 1920's, became a wholly owned subsidiary of the Belgian multinational SOLVAY & CIE in 1979. The name SALSBURY was retained for SOLVAY's animal health products marketed in Northamerica while in Europe these products are marketed under the label DUPHAR. FROMM laboratories, a company specialised in biologicals is a subsidiary of SALSBURY laboratories. In Canada, products for veterinarians are marketed under the FROMM label and those for OTC under the SALSBURY label.

The Canadian subsidiary of SALSBURY is located in Kitchener Ontario and was formed in 1962. It is headed by a general manager, who has a production manager, marketing and sales manager OTC products, and the support functions finance, technical services, and quality control reporting to him. The 1.5 sales representatives serving the veterinarians report directly to the general manager as well. The marketing and sales manager OTC is in charge of eight sales representatives. The company employs 24 people altogether.

Products for veterinarians are primarily marketed through provincial distributors such as ORMOND in Ontario. SALSBURY has manufacturing facilities enabling it to produce feed additives. Basic research and development is done in the United States however.

### **Scope**

Until a few years ago, SALSBURY's focus was mainly biologicals. Today the company's product range includes pharmaceuticals and feed additives as well. Yet, SALSBURY is still primarily known as a poultry, and to a lesser extent swine, biologicals supplier. The company's leadership position in this segment (60% market share) has recently been challenged by INTERVET, a Dutch entrant specialising in this market.

Pharmaceuticals account for about 30% of company sales and are comprised of sanitation products, vitamins and electrolytes antibiotics, and antiparasitic drugs. Feed additives currently account for about 30% and biologicals for 40% of sales. In the course of the past two years 11 new biologicals (five for poultry and six for swine) have been launched. Products for food producing animals account for roughly 95% and about 90% of total sales go through the OTC channel.

SALSBURY LABORATORIES has exclusive distribution rights for feed additives produced by UNISCOPE Colorado and was, until recently, the exclusive distributor for SMITH KLINE's growth promotant (Virginiamycine).

### **Strength and Weaknesses**

SALSBURY is the market leader in avian and porcine biologicals' sales OTC. This is where the company's major expertise lies.

Its sales force, though knowledgeable in technical aspects, is seen as mediocre. The company is recognized as a "poultry" company, which can be considered both a strength and a weakness: A strength because this particular expertise image gives the firm a base upon which to build and implies buyer recognition., and a weakness because it tends to hamper the company's efforts of becoming known as a full line supplier.

Probably the most salient weakness is SALSBURY's slow movement toward the veterinarian market. Furthermore, the company has recently lost its exclusive distributorship for the SMITH & KLINE feed additive.

### **Future Goals**

More emphasis will be placed on serving the veterinarians. Poultry will remain a major area of expertise while efforts will be made to become a major player in the large animal biologicals segment, particularly in porcine biologicals. Finally, sales force and support staff will strive for higher degrees of technical expertise, which is believed to be key in the long run.

## **TUCO**

### **Background**

TUCO is UPJOHN's animal health division in Canada. UPJOHN is a world wide operating US company with primary activities in the field of human pharmaceuticals. The animal health business is UPJOHN's second most important contributor to corporate sales.

TUCO is headquartered in Orangeville, Ontario and employs about 70 people. The company is headed by a general manager who has sales, marketing, finance, operations, quality control and technical services reporting to him. The production facilities are primarily used for formulating the company's own active ingredients into finished products. Some custom manufacturing is done (e.g.: for COOPERS and COOP). Basic research and development is primarily done in the United States.

The market planning manager has two product managers reporting to him. The sales manager is in charge of a sales force of 20 people. The sales force consists of three types of sales representatives: Veterinarian specialists (4), OTC specialists (3), and those calling on both market segments (13).

TUCO has a single marketing and sales group but markets the products OTC under the TUCO and the veterinarian products under the UPJOHN names, respectively.

## **Scope**

TUCO sells pharmaceuticals (58% of sales) and feed additives(42%). Their major product lines falling into the pharmaceuticals category are antimastitis preparations, antibiotics, hormones, antiinflammatory agents and nutritional products. In the antimastitis subcategory TUCO is industry leader, having about 50% market share.

Products for food producing animals make up roughly 80% of sales. About 65% of total sales go through the OTC market, two thirds of which are feed additives. Geographically, Quebec and the Maritimes account for 40%, Ontario 30% and Western Canada for the remainder of total sales.

Over the past three years TUCO has launched one feed additive and two antimastitis preparations in Canada.

## **Strengths and Weaknesses**

UPJOHN is at the forefront in research and development of the recombinant bovine somatotropin, the bovine growth hormone. The company has a reputation as the mastitis experts. Its sales force is one of the largest ones in the country and was viewed as well trained. Having its own production facilities in Canada can be viewed as a strength because it potentially provides more flexibility.

A weakness can be seen in the fact that TUCO largely serves both veterinarians and OTC through the same sales force. This bears the potential of putting off some customers.

## **Future Goals**

Research and development at the corporate parent focuses primarily on products which will make food production more efficient, such as the above mentioned bovine growth hormone. The UPJOHN parent company recently completed construction of a \$7 million Food Animal Intensive Research Facility on their agricultural research farm in Michigan, underlining its commitment to research. Moreover, the company plans on entering the biologicals segment through internal development.

#### IV. ENVIRONMENTAL TRENDS

The major issues facing the industry will now be examined. Each issue will be characterised, then the likely implications for the industry will be discussed. The issues were identified either in the interviews with industry participants or in the public and business press. The seven issues so identified were:

1. New products through advances in biotechnology
2. Shift from therapy to prevention
3. Further consolidation in the industry
4. Increasing pressure from animal welfare organizations
5. Increasing activity of consumerists
6. Increasing involvement of government regulatory agencies
7. Free trade agreement between US and Canada

##### **1. New Products Through Advances In Biotechnology**

Advances in genetic engineering have been very promising in recent years. The field of application that comes to mind most frequently is the development of Recombinant Somatotropine (growth hormones) for cattle and swine. Another area where genetic engineering has a great impact in veterinary medicine is the preparation of completely safe (viral) vaccines.

The first significant genetic engineering product to come to the market will be the bovine somatotropin (BST). The four companies involved in developing BST are ELI LILLY, MONSANTO, AMERICAN CYANAMID, and UPJOHN. Studies suggest that BST will enhance the performance of dairy cows substantially by raising milk yield by 10-40% (Bauman, 1984). As a result, fewer dairy cows will be needed to produce the amount of milk demanded, which in turn means that there will be fewer dairy cows requiring other animal health products, especially pharmaceuticals. This explains why companies not in a position to market BST view the drug as a threat. Yet even firms producing BST express some concerns, such as the fear that the market potential may be grossly overestimated and that the drug may soon become a low profit product due to the fact that four companies will start selling it once it is approved.

Two important issues need to be resolved with respect to BST's marketability: First, a delivery system needs to be developed that will provide a sustained release of BST. Second, public concerns need to be addressed, such as the question of residues. Since BST is a naturally occurring protein in cattle, the debate will focus on the level of occurrence rather than its existence.

According to IMC which is involved in the development of porcine somatotropin, the sales potential for the initial porcine products will exceed \$ 1.2 billion worldwide (Animal Health & Nutrition, February 1987).

Summarizing we conclude that products developed through genetic engineering will provide the industry, in all likelihood, with the greatest opportunity for growth potential in the near future.

## 2. Shift From Therapy To Prevention

The industry is shifting from drug therapy to preventive medication, because end-users seem to perceive the benefits to outweigh the costs of preventive treatment. This trend means considerable growth potential for products in the biologicals category and in subcategories of pharmaceuticals such as parasiticides and to a lesser extent antimastitis preparations (dry cow treatment products).

The last novel animal drug to make a splash in the market was Ivermectin, an antiparasitic drug efficacious against internal and external parasites. It was launched by MERCK (MSD Agvet) in 1981 and has reached annual sales of \$ 220 (THE ECONOMIST Sept. 5,1987).

Summarizing, we can conclude that this trend, in combination with the progress in genetic engineering, will provide the industry with substantial growth opportunities, particularly in biologicals.

## 3. Further Consolidation In The Industry

Sales of animal health and nutritional products appear to have reached a plateau over the last few years in most developed countries. Not only has demand for these products shown little growth or stagnation, but the patents on older drugs have run out, so that they can now be produced and sold cheaply as generics. Few novel drugs with great sales potential have been developed in recent year. In addition, the licensing procedures imposed by the regulatory agencies have become more stringent. This increases development costs.

The combined impact of all these factors has threatened the viability of many industry participants and has led to a number of horizontal and vertical integrations. In general horizontal integration will provide a given company with complementary product lines which means less vulnerability. Vertical integration in this industry means forward integration, that is, taking over a distributor which may broaden the company's product range and above all provide it with an established sales force.

Some recent examples of integration illustrate this trend:

### Mergers

- In 1984 ICI and WELLCOME have merged their animal health interests into a new joint-venture COOPERS ANIMAL HEALTH.

### Horizontal Integration

- Earlier this year, International Minerals and Chemical Company (IMC) has acquired PITMAN- MOORE from JOHNSON & JOHNSON.
- BRISTOL-MYERS was taken over by American Home Products (FORT DODGE) earlier this year.
- NORDEN acquired ADAMS VETERINARY RESEARCH SCIENTIFIC.
- SANOFI a French multinational has taken over PVU/APA a couple of months ago.
- Moreover, CYANAMID has the option to purchase LANGFORD INC. in 1991, and ELANCO (ELI LILLY) is said to have been trying to acquire VETREPHARM, one of the few independent Canadian manufacturer/wholesaler left in the industry. Others in this category are DISPAR & WINTHROP AH products.

### Vertical Integration

- LANGFORD INC. took over its former distributor ARMITAGE CARROLL

Some industry participants feel that the days of independent distributors are numbered. The ongoing consolidation tends to support this conclusion because the broader the product range the suppliers get as a result of mergers, the more the operation of a company own sales force is warranted. This means that fewer distributors will be needed. To the extent that price is important, however, distributors with a nationwide sales force may be able to survive since they only require a 10-20% margin whereas a multinational's subsidiary seem to require a 30% margin to perform the same function.

Summarizing we can conclude that consolidation in the industry, on the national and international stage, will likely continue. One could even argue that, in light of the current low value of both the US and the Canadian dollar, a direct investment in North America will be particularly attractive for European multinationals.

#### **4. Increasing Pressure From Animal Welfare Organizations**

Pressure from animal welfarists has grown in many developed countries over the last few years. Their efforts are mostly directed at either of two issues.: the methods used to test drugs in animal experiments, and the production practices used in livestock and poultry farming.

Inability to use animals in the development of new drugs (human and animal) would hinder research seriously. Since research is so vital to this industry, ways have to be found to address this issue. The logical way to deal with the animal activist's pressure is to take it seriously and to countervail its oftentimes extreme and emotionally coloured viewpoints. This could be done by an open information policy geared towards the public at large. In addition, concerted efforts should be made in research and development to substitute alternative methods for animal experiments wherever possible. More emphasis into developing alternative testing methods would in itself convey believability in and accountability of the industry .

In the case of production practices, the impact of moves to satisfy animal welfarists will have mixed implications for animal health products. For example, elimination of battery cages for poultry production will raise the costs of production which may decrease demand for poultry products, and in turn decrease the number of birds needing drugs. Yet, open ranging of layers will mean that more of some drugs, particularly coccidiostats, will be needed per bird.

It can be concluded that the animal health industry will have to pay close attention to pressure from animal activists. It is suggested that through open and credible information policy the industry could be able to prevent major negative impacts resulting from efforts of animal activists from taking place.

#### **5. Increasing Activity Of Consumerists**

Consumerist groups appear to have gained in prominence over the past few years and their concerns are being shared by a growing number of people. Their primary concerns refer to residues in animal derived products and the resultant potential environmental impact.

Major implications for the animal health industry stemming from consumerists' efforts are threats of ever more stringent regulations regarding testing procedures and use of animal drugs. The European Economic Community, for instance, has banned the use of growth hormones in livestock. The ban was passed in December 1985 and will be effective January 1988. Consumerist concerns appeared to play a major role in its coming about.

Issues raised by consumerist groups will continue to take many forms and will probably pose threats to the animal health industry. The CAHI, as the collective voice of manufacturers in the industry, faces formidable challenges in dealing with these issues.

## **6. Increasing Involvement Of Government Regulatory Agencies**

The growing involvement of government agencies in regulating the industry can largely be viewed as a result of growing pressure from both animal welfare groups and consumerists. Other factors are also important, however, in explaining this trend.

Personnel changes at the regulatory bodies may have considerable implications on what has to be done to meet government regulations. For instance, new government personnel in charge of biologicals approval required more data and ask unpleasant questions in the course of the registration procedure. Consequently the product approval process tends to get lengthier and more costly. Another case is the legislation in Quebec passed in 1986 which required all animal drugs be placed on a veterinary prescription-only basis. This legislation was implemented in conjunction with a subsidy scheme directed at livestock producers, yet the ultimate implication is that the provincial government has substantially increased its control over animal health product marketings.

When industry participants were asked how they assessed the likelihood of a regulation similar to the one in Quebec for Ontario, responses differed. Some felt it was merely a matter of time before this would become reality whilst others pointed out that the groups lobbying against such a regulation are too strong. It should be noted that the extent to which individual companies would be affected by prescription-only legislation varies considerably.

## **7. Free Trade Agreement Between US And Canada**

Most participants felt it was too early to assess the potential implications of free trade on the animal health industry in Canada. Those who commented predicted both positive and negative impacts. Sales of products for use in poultry would go down because of the anticipated negative effect of free trade on poultry production whereas sales of products used in swine production would likely increase as a result of free trade.

At this stage, it appears to be difficult to make meaningful estimates of the effect free trade will have on the animal health industry in Canada.

## V. SUMMARY

The purpose of this study was to provide as thorough a description of the industry as was possible within the given constraint of time. In view of the limited publicly available information on the industry the report principally draws upon information gathered in personal interviews conducted with industry participants.

The first part of the report provides a description of the industry structure. The various groups of industry participants presented include manufacturers/wholesalers, wholesalers, retailers, and regulatory agencies.

In the remainder of the study, the manufacturers perspective is taken. First, the market is characterised. Considerable emphasis is placed on discussing four meaningful market segmentations; because these are used to identify the scope of the profiled competitors. The Canadian animal health market represents about \$200 million as measured in manufacturers' prices. The three broad product categories are pharmaceuticals, biologicals, and feed additives accounting for 53%, 12%, and 35% of the market respectively. The market has shown little real growth over the past few years, which in combination with other factors makes for quite an intense competition in the industry. The single strongest competitive force identified is rivalry among competitors. The factors key to success in this industry are personal selling, research and development, and differentiated marketing.

Then a profile of ten major competitors is given. The profiles will be particularly useful to those unfamiliar with the industry as they characterise each competitor in terms of some background information about the company under consideration, its scope, strengths and weaknesses, and future goals.

Finally, seven major issues from the industry's environment are presented and their potential implications on the industry discussed. This section should also lead the reader to appreciate the complexity of and interrelationships between the animal health industry and its environment.



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IN PRACTICE, various issues

## GLOSSARY

- Additives:** Substances added to a compound or a protein concentrate in the course of manufacture for some specific purpose other than as direct source of nutrient. Feed antibiotics, obtainable without prescription for adding to animal feeds as growth promotants include: Flavomycin, Virginiamycin, Avoparcin, Zinc-bacitracin, Olaquinox and Tylosin.
- Antibiotics:** Antibacterial drugs obtained from living organisms such as moulds, bacteria or other microorganisms, which act by inhibiting the growth and multiplication of germs and other bacteria in the body. Examples are penicillin and tetracyclines. Antibiotics have no effect on illnesses caused by viruses.
- Antiserum:** A serum that contains antibody or antibodies; it may be obtained from an animal that has been immunized either by injection of antigen into the body or by infection with microorganisms containing the antigen.
- Antitoxin:** Antibody to the toxin of a microorganism (usually the bacterial exotoxins), to a zootoxin (e.g. spider) or to a phytotoxin, which combines specifically with the toxin in vivo and in vitro, with neutralization of toxicity.
- Bacterins:** A bacterial vaccine; a suspension of bacteria for stimulating the production of antibodies in humans and animals for prophylactic or therapeutic purposes or for the production of antisera.
- Biologicals:** Medicinal preparations made from living organisms and their products including vaccines, sera, antigens, antitoxins.
- Biotechnology:** The industrial application of biological knowledge, as in brewing and cheese making and, recently, the manipulation of genes.
- Hormones:** Organic substances produced by plants and animals in minute quantities. Animal hormones (e.g. Adrenalin, Progesterone) are usually secreted by various endocrine glands into the blood stream and affect behaviour and a variety of body functions.
- Parasite:** An organism which lives in or on another (the host) from which it derives food for all or part of its life. Often, though not always harmful to the host. Animal parasites include internal worms (e.g. Roundworms, Tapeworms) and external flies, lice, ticks.

Sources: BLACK'S Veterinary Dictionary, Second Edition, 1985  
DORLAND'S Illustrated Medical Dictionary, 26th edition, 1985

## APPENDIX A: INTERVIEWED INDUSTRY PARTICIPANTS

<u>COMPANY</u>	<u>PERSON</u>	<u>TITLE</u>
<b>Personal Interviews:</b>		
<u>Manufacturers</u>		
AYERST LAB.	F. Tarte	Director AH Business Unit
BAYVET	G. McIlwraith	Marketing Manager
CANADA PACKERS INC.	S. Crnkovic	Product Manager
COOPERS AGROPHARM	M. Warmelink	Director of Marketing
LANGFORD INC.	R. Grant	Group Prod. Manager
MAY & BAKER	J. White	Director AH Business Unit
NORDEN LAB.	B. Piper	Marketing Manager
SALSURY LAB.	D. Anderson	Marketing Manager
TUCO	P. van Vloten/D. Cowl	Product Managers
<u>Wholesalers</u>		
UNITED COOPERATIVES OF ONTARIO (UCO)	J.A. Wadleigh Liz S. Lambeau	Marketing Manager Marketing Assistant
<u>Retailers</u>		
Veterinary Clinic Hw. #24 OVC Pharmacy	Dr. P. Jolly D. Weiss	Veterinarian Pharmacist
<b>Phone-Interviews:</b>		
PFIZER CDN INC. Bureau of Veterinary Drugs	Dr. B. Grove Dr. C.D. Pavilanis	General Manager AH

## APPENDIX B: AH-QUESTIONNAIRE

To start with, I would briefly like to introduce myself again. My name is David Stauffer and I am Swiss. I am working toward my Masters of Agriculture at the University of Guelph. At present I am in my fourth and last semester in the Agribusiness Management Program. At this time I have to perform a management training project --an integral part of the last semester.

For my project, I am analysing the Animal Health industry participants in Ontario. Doing such analysis is relatively new to me. I would like to ask you some questions about the industry. Some of them may be digging too deeply and, as a result, put you off. If they do, please let me know. The quality of my project largely depends on the amount of information I can gather in these interviews, so I would much appreciate your sharing with me as much information as you feel is possible.

1. Now that I have told you about my background, would you mind describing your organization to me? (Organizational structure; Corporate parent; Relative importance of the Animal Health Business Unit and the functional areas within it; Degree of integration; R&D)

- a.) Being part of such a sizeable corporation presumably brings some competitive advantages in such areas as operations or R&D.
- b.) What would you say are the major effects of being vertically integrated to such a degree?

2. Let's now turn to the industry you operate in. How big do you estimate the overall AH products market in Ontario in dollar terms? (Retail or wholesale volume?) If wholesale, what's the average markup? Is the overall market growing, stagnant or declining?

- a.) What geographic markets do you cover in CDN? What's their relative importance in % of company sales?
- b.) In my analysis I would like to focus on the following 5 product categories: Antimastitis Prep. Antibiotics, Antiparasitic drugs, Biologics, Hormones, and Feed Additives. Could you tell me: (1) In which of these categories are you actively involved? (2) How much does each product category approximately contribute to the total industry sales? (3) What is your market share by product category? (4) What are your growth projections regarding each product category? (5) The number of products per product category? (6) Which are your major products per category? (7) Product age distribution?

3. I understand that the market could be further segmented by broad target animal into two distinct segments: (I) Companion animals and (II) Food producing animals. Would you consider such a breakdown useful? If used in company: (1) How much does each submarket approximately contribute to the total industry sales? (2) What is the distribution of your company's sales by submarket? (3) What are your growth projections regarding each submarket?

4. Referring to distribution channels for a moment, what proportion of the total industry sales goes the veterinarians and over the counter respectively? Does this split about match the one of your company? Sales force vs. Distributor. How is your sales force organized?

5. Is there a mission statement for the AH business unit? Could you briefly outline its major points? Could you comment about future goals of your company?

## Macroenvironment

6. Do you see some current or future macroenvironmental trends as issues?

-For instance, it has been said that pressure from animal welfare people will increase and will result in ever more stringent regulations regarding testing procedures and use of animal health products.

-Or genetic engineering will help discover novel products and generally present opportunities to the industry (e.g. Bovine Somatotrophin).

- a.) How is your organization trying to exploit these opportunities and respond to these threats?
- b.) What will be their combined impact on the overall industry sales? (by product category)

## Competitors (S&W)

7. Finally, I'd like to talk for a moment about competition. Could you name your major competitors (by product category)? What do you view as their strengths and weaknesses respectively? How would you describe their competitive strategy?

## Own Co.'s position (S&W)

8. Referring to your company, how would you describe its relative position in the industry applying the same dimensions used to describe your major competitors?

9. Last but not least, what factors would you say are key to success in the Animal Health industry? Or put differently, what core capabilities make a company perform well in this industry?

**APPENDIX C: Number of Veterinarians and Clinics by Province and Field of Practice**

Province	Number of Veterinarians	Small animal	Large animal	Mixed practice
British Columbia	509	159	37	135
Saskatchewan	314	26	14	89
Alberta	594	8	5	5
Manitoba	254	53	74	37
Ontario	2180	583	326	167
Quebec	1398	285	67	316
Nova Scotia	130	34	6	66
New Brunswick	95	40	15	19
Prince Edward Island	52	6	5	18
Newfoundland	32	11	4	3

Province	Number of Clinics	Small animal	Large animal	Mixed practice
British Columbia	288	158	16	94
Saskatchewan	105	22	15	67
Alberta	338	88	1	230
Manitoba	68	20	0	45
Ontario	616	394	80	102
Quebec	273	125	22	117
Nova Scotia	33	20	3	10
New Brunswick	60	22	0	37
Prince Edward Island	9	3	0	5
Newfoundland	13	7	6	0

Source: Canadian Veterinary Medical Association

EXHIBIT 1: AYERST laboratories Organization Chart

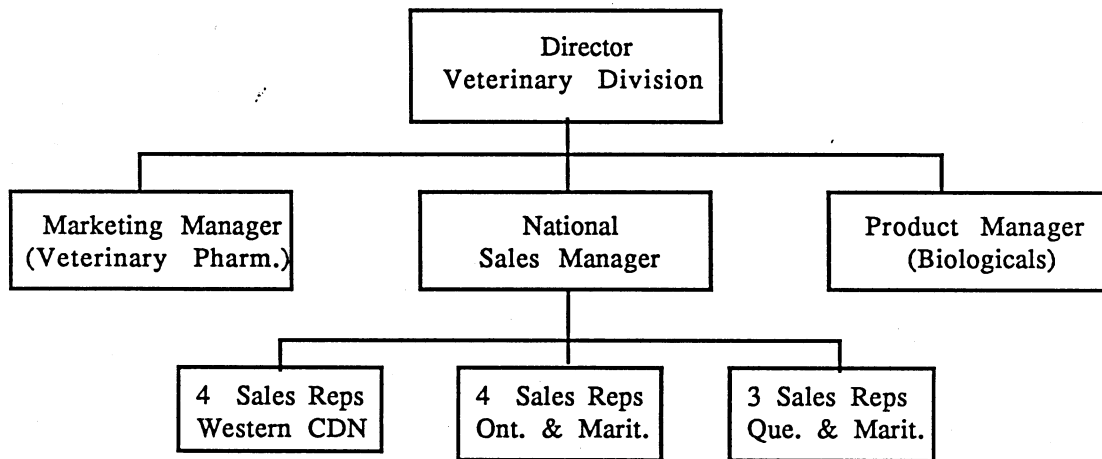


EXHIBIT 2: BAYVET Organization Chart

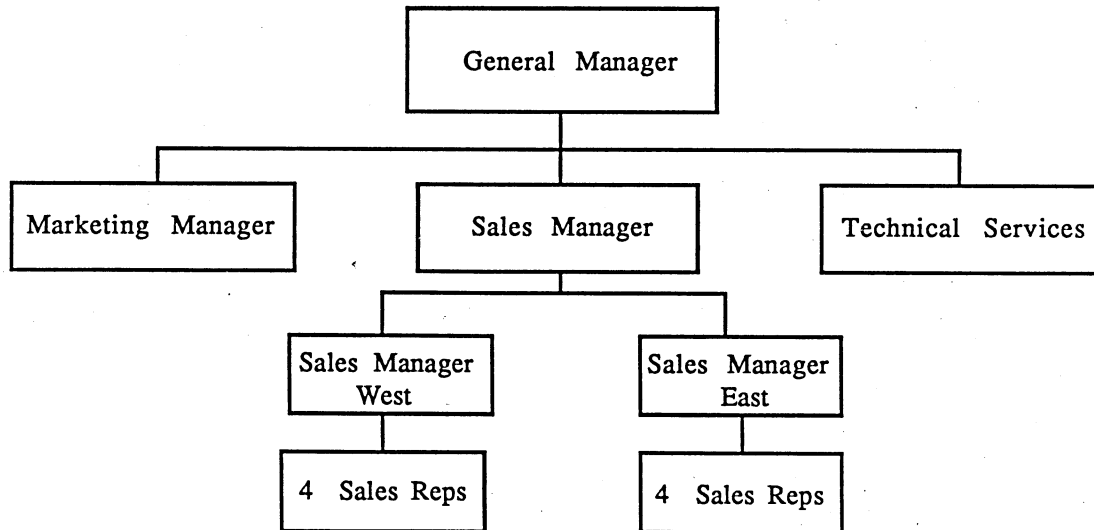
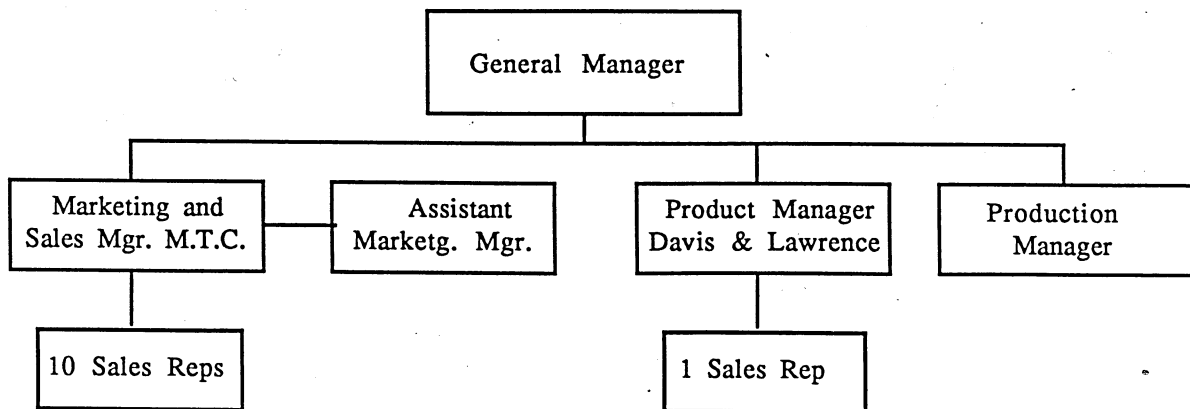
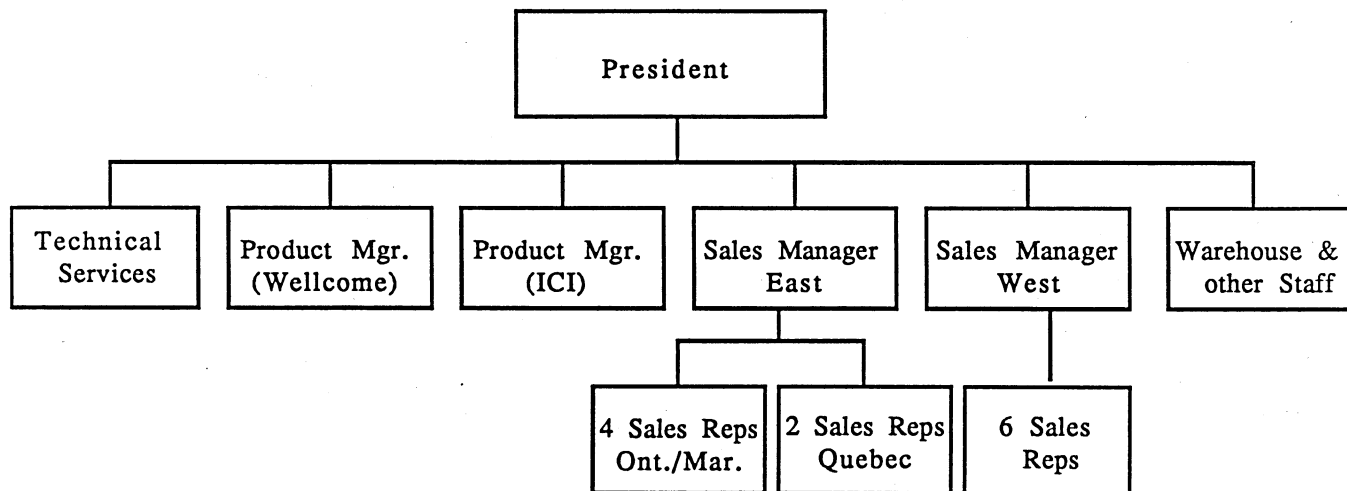


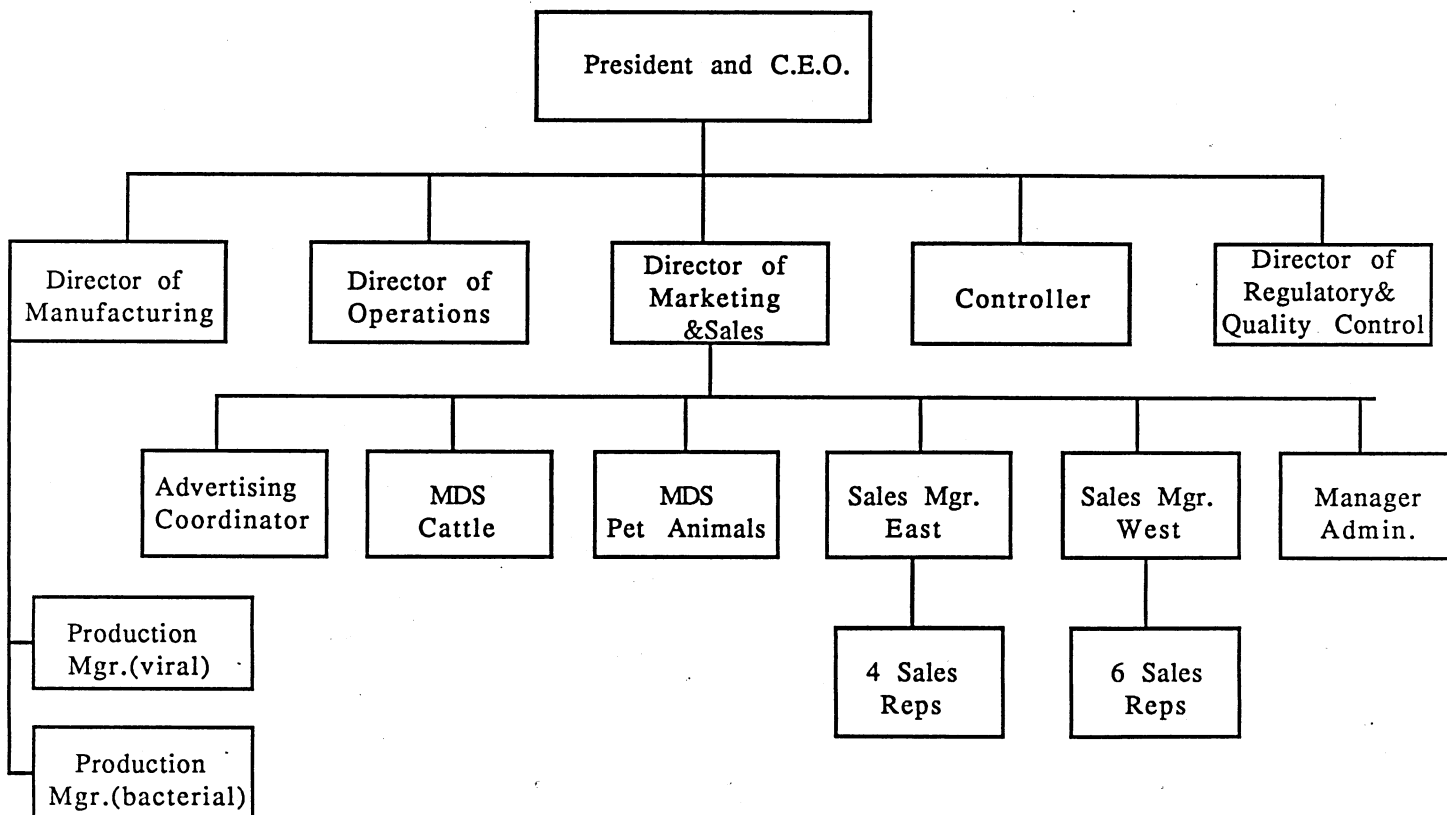
EXHIBIT 3: CANADA PACKERS Organization Chart



**EXHIBIT 4: COOPERS Agropharm Organization Chart**



**EXHIBIT 5: LANGFORD INC. Organization Chart**



MSD = Market Development Specialist



EXHIBIT 6: MAY & BAKER Organization Chart

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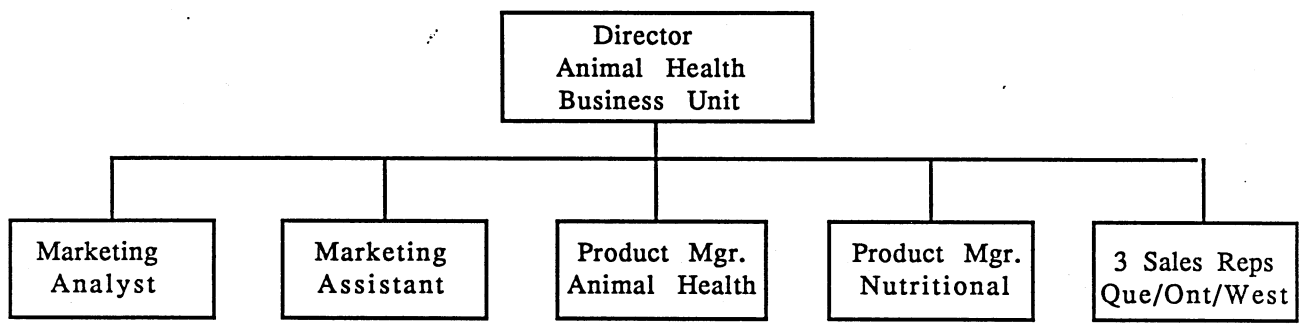
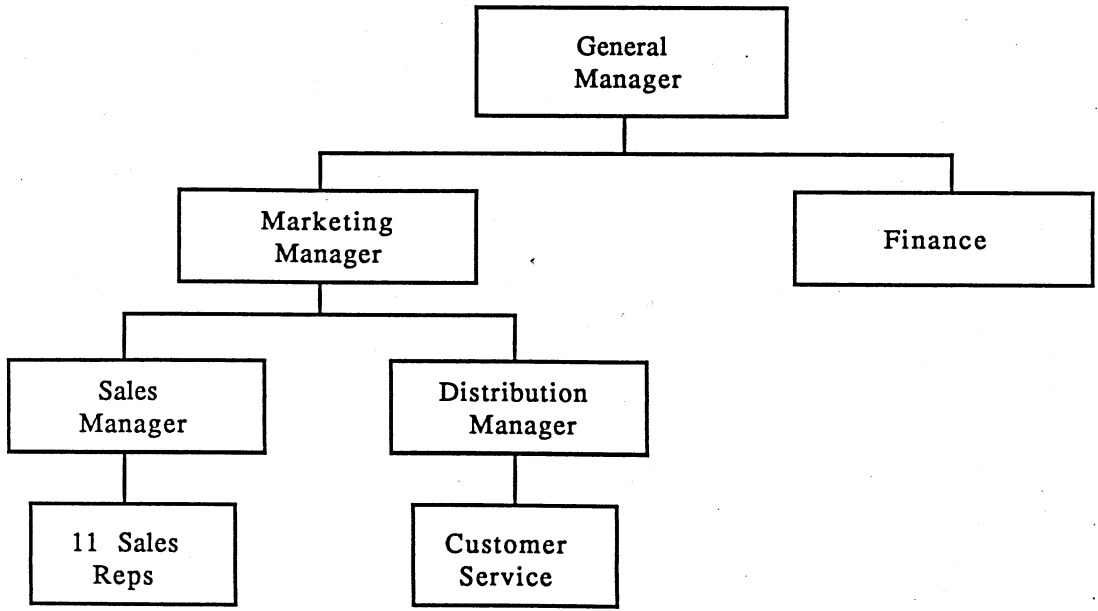
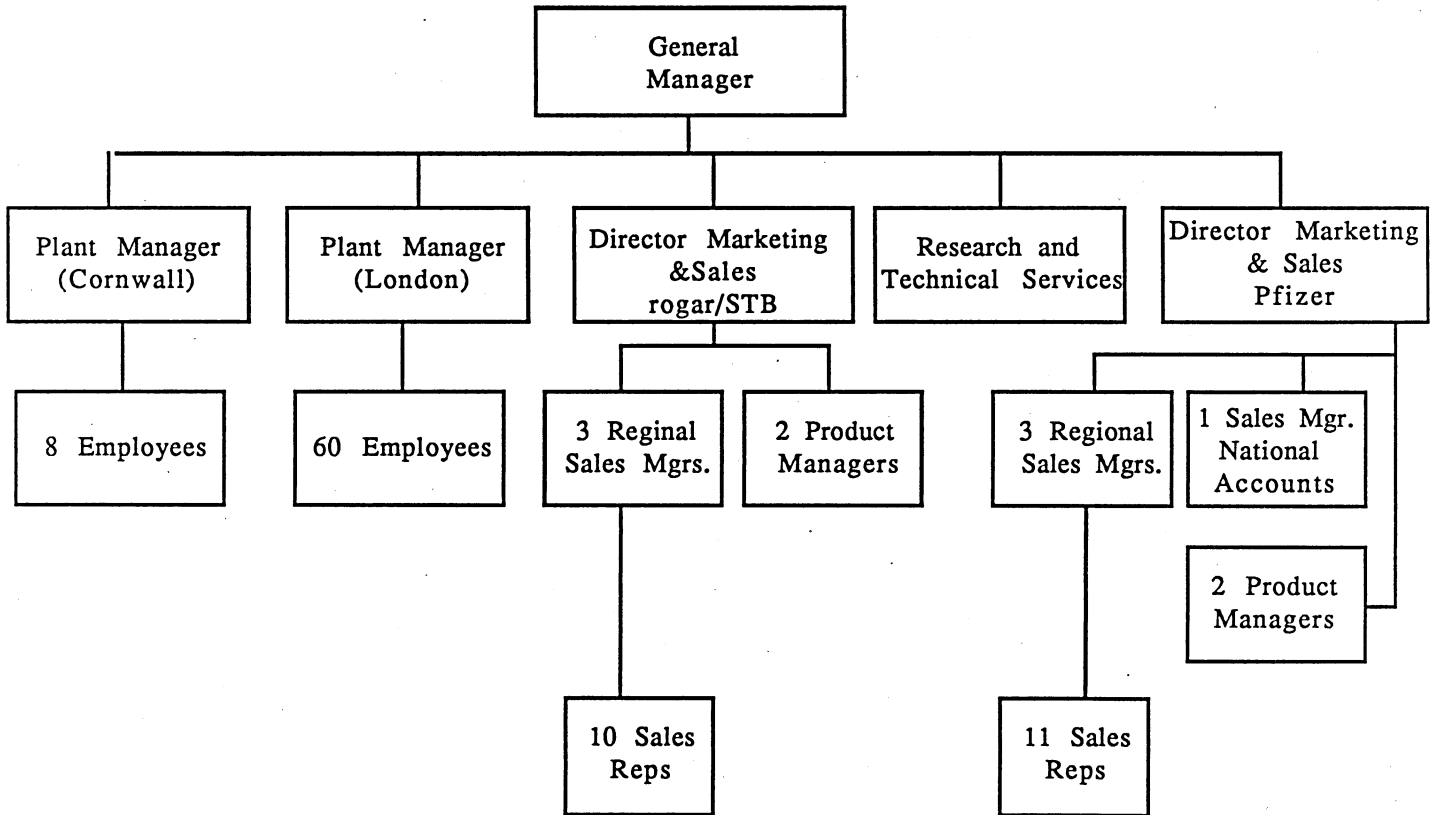


EXHIBIT 7: NORDEN Laboratories Organization Chart

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**EXHIBIT 8: PFIZER Organization Chart**



**EXHIBIT 9: SALSBURY Laboratories Organization Chart**

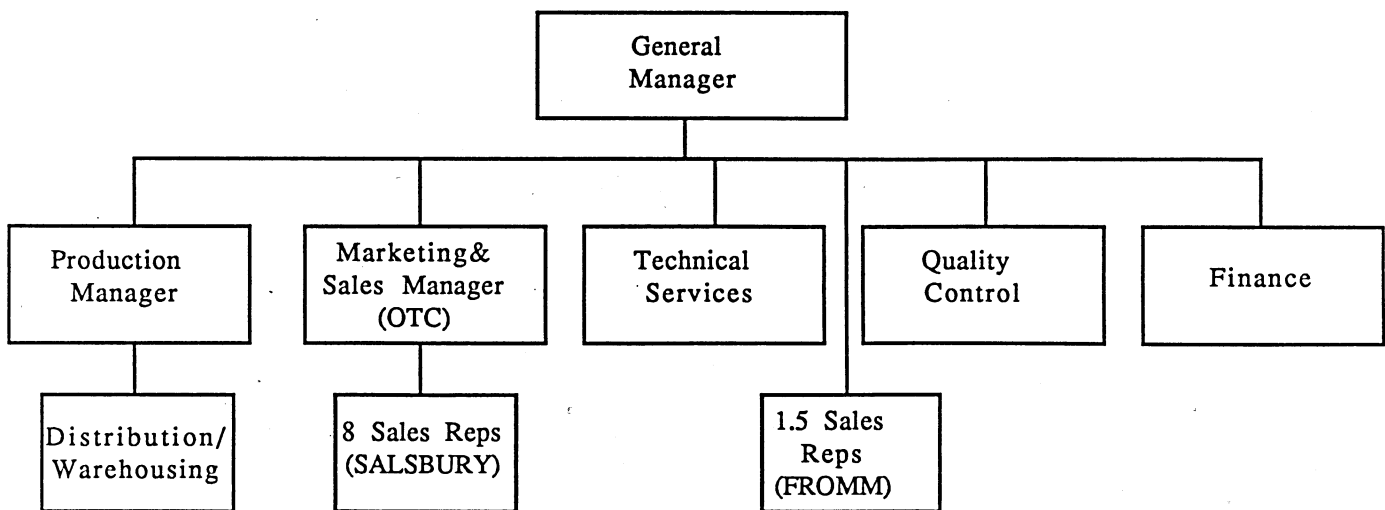
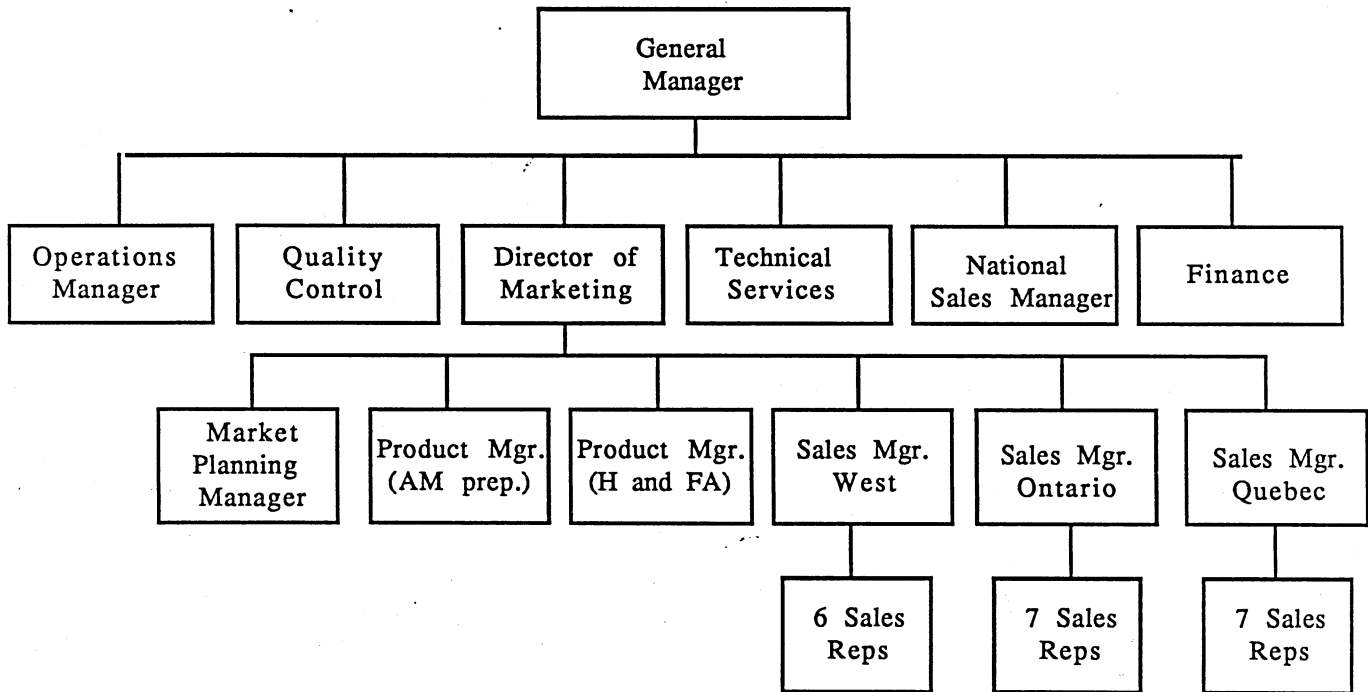


EXHIBIT 10: TUCO Organization Chart



H= Hormones; AM = Antimastitis Preparations; FA= Feed Additives

APPENDIX E: SUMMARY PERTAINING TO THE SCOPE OF THE PROFILED COMPANIES

COMPANY	DISTRIBUTION OF SALES BY													
	Geographic Region						Target Animal Compan. Food pro	Distr. OTC	Channel VET	Broad Product Category				
	Mar	Que	Ont	Man	Sas	Alb				B.C.	Biologics	Pharma	Feed add.	
AYERST LABORATORIES	4	27	31	28	10	10	28	82	10	90	42	58	0	
BAYVET	16	24	60				50	50	35	65	30	70	0	
CANADA PACKERS	x	x	x	x	x	x	x	x	x	x	x	x	0	
COOPERSAGROPHARM	5	20	25	10	10	20	10	85	30	70	12	88	0	
LANGFORD INC.	30	30	30				25	75	0	100	50	50	0	
MAY & BAKER	30	40*	30				10	90	80	20	25	5	70	
NORDEN LABORATORIES	9	20	33	10	20	8	60	40	0	100	70	30	0	
PFIZER CDN	30	35	35				20	80	60	40	0	60	40	
SALSBUURY LABORAT.	5	28	30	7	10	12	5	95	90	10	40	30	30	
TUCCO	40	35	25				20	80	65	35	0	58	42	

\* Accounts for Ontario and the Maritimes  
 x No information could be obtained

APPENDIX F: SUMMARY OF PERTINENT DATA OF THE PROFILED COMPANIES

COMPANY	SALES FORCE OTC VET TOT	#of employees in AH business	new products launched within last three years	Particulars about market position
AYERST LABORATORIES	11 11	15	4 Biologicals 2 Antimastitis preparations 1 Antibiotic	Full line of biologicals, about 40% of equine biologicals market; market leader dry cow mastitis preparations
BAYVET	8	20	1 Parasiticide	Market leader equine biologicals; strong position in antiparasitic drugs;
CANADA PACKERS	1 10 11			Broad line of pharmaceuticals; exclusive distributor for RHONE-POULENC, PITMAN-MOORE, and CONNAUGHT
COOPERS AGROPHARM	14	40	2 Antimastitis preparations 1 Parasiticide 2 Biologicals	Together with HOECHST market leader in Sulfa-drugs; market leader in reproductive hormones
LANGFORD INC.	13 13	55	9 Biologicals 6 Pharmaceuticals	Leading company in porcine biologicals; Full line of biologicals; Has R & D in Canada Exclusive distributor for CYANAMID pharm.
MAY & BAKER	3	9	1 Feed additive	One of the leading suppliers of nutritional products; market leader for Methionine
NORDEN LABORATORIES	11 11	22	15 Biologicals 8 Pharmaceuticals	Market leader in biologicals; Development of Porcine Growth Hormone
PFIZER CDN	12 13 25	120	1 Feed additive (Coccidiostat)	One of the leading companies in Feed additives; market leader in antibiotics; manufacturing in Canada
SALSBURY LABORAT.	8 1.5 9.5	24	11 Biologicals (5 avian, 6 porcine)	Market leader in poultry biologicals; some manufacturing in Canada
TUOO	3 4 20	70	2 Antimastitis preparations 1 Feed additive	Market leader in lactating mastitis preparations; one of the leaders in feed additives; BST development; some mfg. in CDN

If total number of sales representatives is given only, the sales force serves both retail segments

