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## The Prospect of Success of a Farming Operation in the Negative Operating Environment of 1985: A Case Study

David A. Smith  
*Fontbonne College*

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THE PROSPECT OF SUCCESS OF A FARMING  
OPERATION IN THE NEGATIVE OPERATING  
ENVIRONMENT OF 1985: A CASE STUDY

BY

DAVID A. SMITH, B.S.

A DIGEST PRESENTED TO THE DEPARTMENT OF BUSINESS &  
ADMINISTRATION OF FONTBONNE COLLEGE IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF MASTER OF BUSINESS  
ADMINISTRATION

There has been a time, in the not too distant past, when farmers were looked upon as the backbone of American pride and culture. This attitude toward farmers has changed as financial problems plague an industry which was once considered one of the most successful American industries. The factors which caused this downturn can be divided into areas for purposes of analysis. These areas are government policies, economic factors, banking policies and farm management errors. All of these areas combined have meant difficult operating conditions for farmers. Some farms have gone bankrupt as a result. At the very least, the equity positions of profitable operations have been negatively affected with a decline in net worth.

The current operating environment does look bleak for anyone entering farming in the 1970's. The case study in the thesis analyzes the current conditions and relates how these conditions would affect an individual who wanted to enter the farming industry today.

A marketing approach is used to determine the market to enter, the product to produce, and what method is best to sell the product. The operation established in the case section is a hay farm which is designed to provide feed to thoroughbred horses in North Central Kentucky. This type of operation was selected using some criteria which any operation should consider when entering the farming industry. The first criteria is that the market

should be such that some degree of market security exists for the product. The second criteria is that the operation be geographically located to serve its market. The final criteria used states that the product must meet the needs of its market.

The author believes that any operation which follows these criteria has a good chance of success. This potential is shown in the final chapter of the text.

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## PREFACE

The study contained in this paper was undertaken to show that the farming industry is a viable avenue to direct the entrepreneurial spirit.

At this period in time it would seem that farming is a bleak industry to attempt entering. It is felt that with enough creativity and drive, there still exists prospects for profits and prosperity.

Along the road to completion of this paper, I have been aided by many individuals and institutions of which I will name only a few. The spirit which drove me to select this topic and possible future occupation was instilled in me by Roman Sitzman, a successful lifetime farmer.

Though lacking a high degree of formal education, his knowledge of the farming industry and his love of the land were critical factors in the selection of this topic. I also wish to thank Sheryl Smith, my wife, without whose patience and encouragement I could have never completed such a task.

Of the institutions used for research, I wish to thank the Fontbonne College Library, and the Washington University Library which provided much of the background material for this report. In the areas of technical data, I wish to thank the Kentucky Horse Park and Roman Sitzman for data which could have not been easily found elsewhere.

## INTRODUCTION

There was a time in the not too distant past where the farming industry was looked upon as the backbone of American pride and culture. The U.S. was founded with a strong agricultural heritage which dates back hundreds of years. The importance of farming as an occupation began to decline with the coming of the industrial revolution, as many people left the farm for the cities.

Those people who remained in farming prospered through the 1960's and early 70's. Times seemed good and prospects bright. Who would have guessed that by the mid-1980's many farmers would be in serious financial trouble? It seems a very worthwhile task to first investigate what happened to the industry and then narrow our scope down to a case study to try to answer some questions as to whether an individual could hope to make a living and more in an industry which seems to be floundering.

There are a number of factors which have contributed to the problems farmers are now experiencing. These factors can be categorized in the areas of government programs, economic influences, banking policies, and farm management. All of these areas combined are creating a poor economic climate for farmers. Let's analyze them one at a time for clarity's sake, but keep in mind that they all interact with each other and cannot truly be separated.

## PART I

### THE FARMING ENVIRONMENT

#### CHAPTER 1

##### INFLUENCE OF GOVERNMENT PROGRAMS

###### Supports or Subsidies

The first area to be investigated as to its effect on farming as an occupation is that of government programs and their effects. Government programs date back to the depression era of the 1930's when supports were first instituted. The intent of supports at this time in history, when wheat went for as little as 10 cents a bushel, was to protect U.S. farmers from sharp turns in the market. This price, as established, is the effective price the government pays the farmer for his crop. It also acts as a market floor for exports.

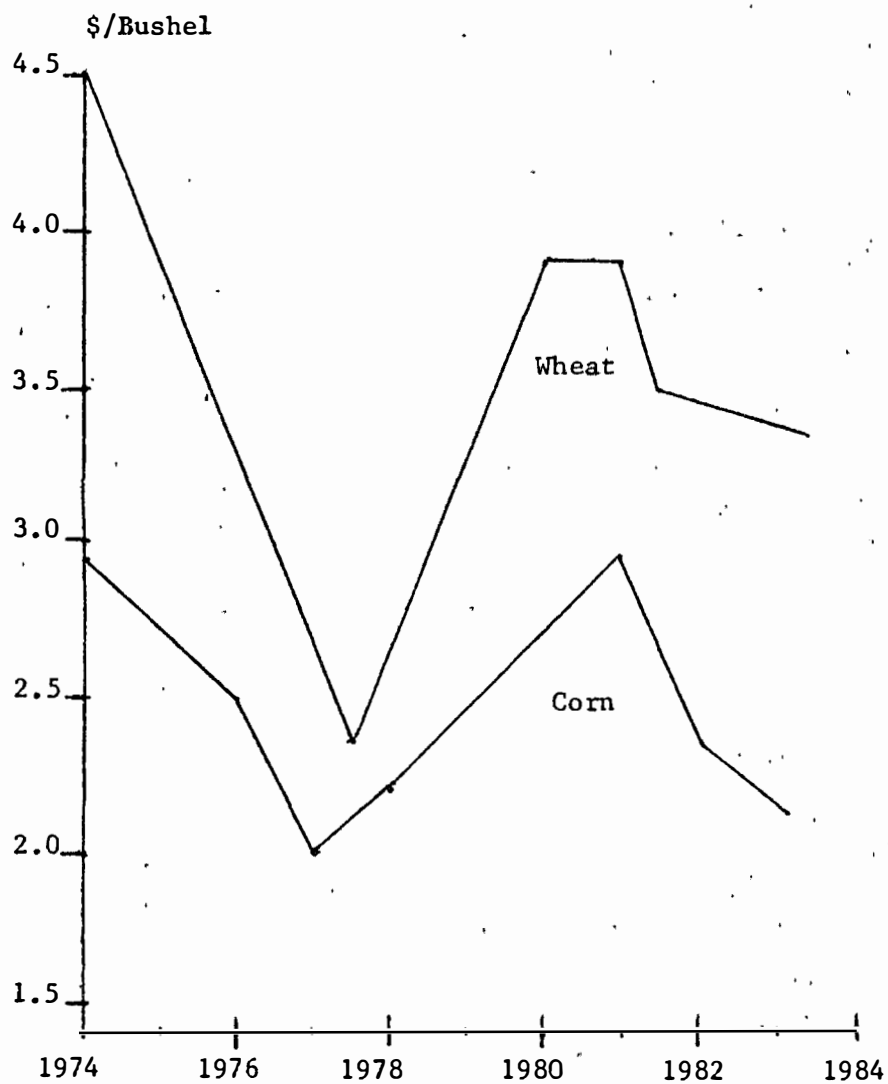
Other countries, competing for export business with the U.S., set prices under the support levels and sell all of the grain they can supply. This takes a portion of the U.S. farmers market share and increases surpluses in the U.S.<sup>1</sup> An example of how this program increases surpluses can be seen by considering the current level of corn prices. The current support level for corn is \$3.03 per bushel. The average market price for corn in 1984 was about

\$2.75 per bushel. This means that farmers could make an extra 28 cents for every bushel covered by this program. This "incentive" has resulted in more marginal land being planted each year since the mid-1970's. This pricing system has cost Uncle Sam \$2.7 billion in fiscal 1983 and is projected to cost as much as \$4 billion in fiscal 1987.<sup>2</sup> This program may seem to help farmers, however, the real effect has been disastrous for both the farmer and the government's budget. By encouraging an increase in production where surpluses already exist, the result is to cause market pricing to drop further than current levels. (See Graph A) This drop in market price severely hurts farmers not participating in a subsidy program while at the same time increases government expenditures.

#### Government Loans

Another government program which tends to increase production is the loan program currently in place. Under this program a farmer, who agrees to certain requirements, is entitled to borrow against each bushel of grain or pound of cotton he harvests. In 1984, for example, a corn farmer could obtain a loan of \$2.55 per bushel. If market prices rise during the 9 month term of the loan, he can sell the grain pledged as collateral and repay the loan. If prices fall below \$2.55 a bushel, the farmer can keep the loan and forfeit the grain. In effect the farmer sells grain to the government at above-market prices. Loan levels for the past few years have been set too high by Congress. This results in an incentive

GRAPH A



Marketing Years, Beginning July 1

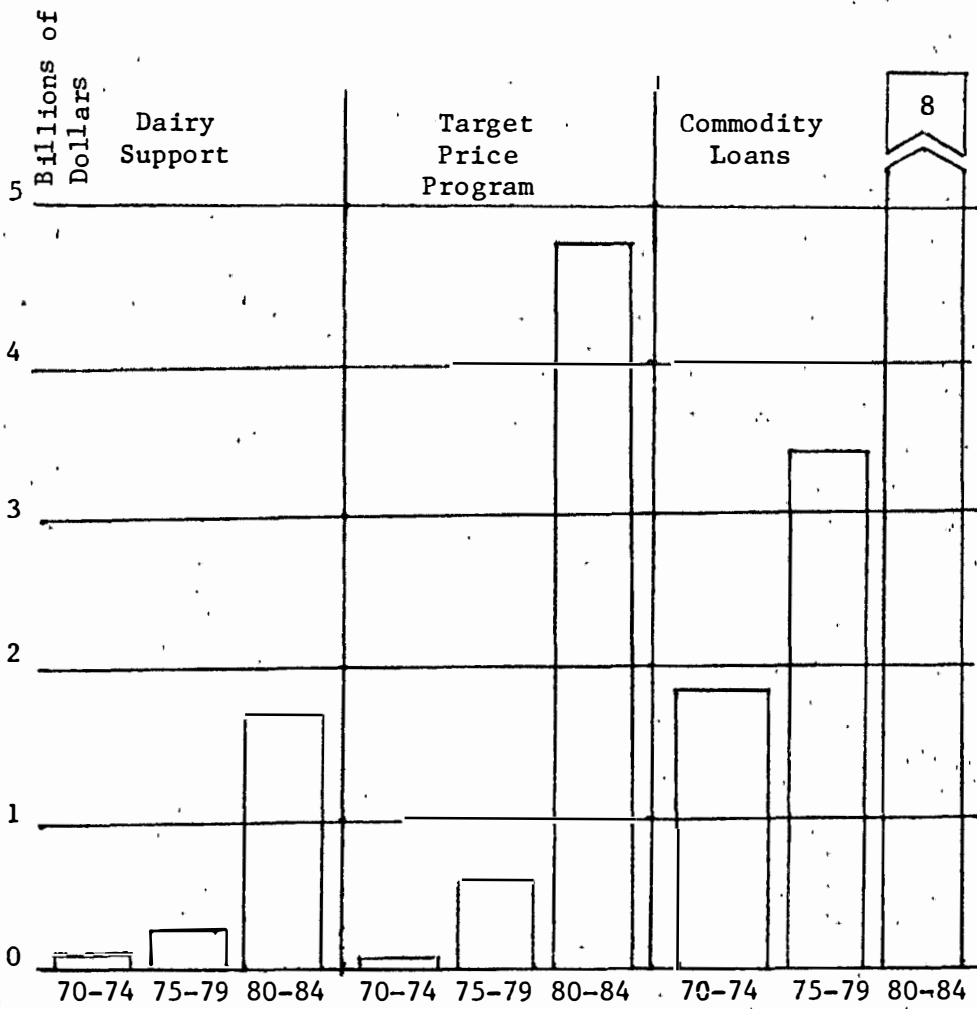
Grain prices have been unsteady  
over the past 10 years.

for farmers to over-produce even when demand is weak. When large harvests reduce prices, the government is stuck holding a huge reserve of forfeited grain. In fiscal 1983, for example, after bumper harvests in the two preceding years, loan volume surged to a record \$13.6 billion and the net costs of this program hit \$8.4 billion. This was an increase of 20% over 1982 figures.<sup>3</sup>

It should be apparent that the government is creating artificial demand for farm commodities which results in an increase in production. It may appear that most farmers would benefit from such programs, however the opposite is actually the case. Since one-third of the 2.4 million U.S. farms account for 90% of production, government programs are aimed at larger farms which produce most of the crops. The other two-thirds of farms produce only 10% of the total crop output, so they are left with depressed prices due to over-production incentives given to larger farming operations.<sup>4</sup> These depressed prices put the squeeze on smaller farms cutting down cash flows and reducing incomes to a point where expenses cannot be covered by the market prices currently in effect. (See Graphs B and C)

The government is then faced with the problem of having to store excess amounts of grains and other farm products. The cost of storing the surplus production of grain is one of the major factors which led to the development of the PIK (Payment In Kind) Program which we will consider next.

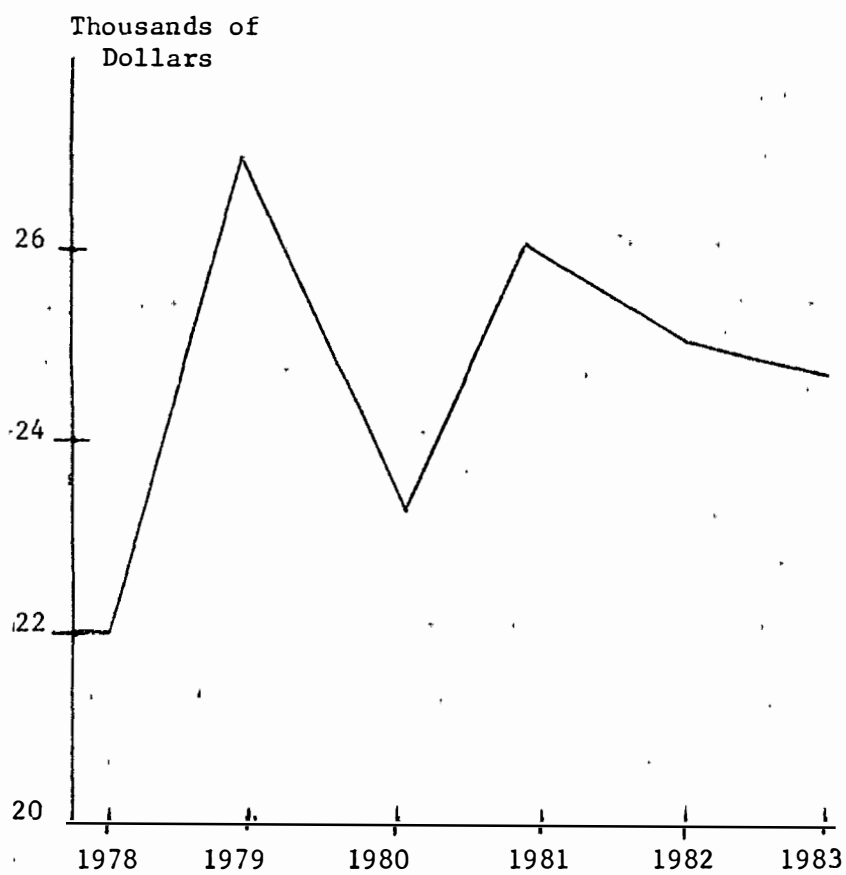
GRAPH B



Government support programs have increased drastically over the past 15 years.

GRAPH C

Pretax Average  
Farm Family Income



Farm incomes are on the decline.



Payment-In-Kind

The two federal programs that we have considered so far have the effect of creating an artificial market, which results in encouraging farmers to plant and produce more. The PIK Program is designed to cut down on plantings and reduce total production. Introduced on January 11, 1983 as the largest land retirement program in a decade, the plan offers farmers grain out of government-controlled inventories in return for an agreement by the farmers to plant less. The farmer cannot sell the grain until the end of the harvest season. The main idea behind PIK is that the reduced plantings will about offset the increase in grain coming on the market while keeping prices about the same. The end result would be to reduce government inventories and decrease storage costs.

The PIK plan was tacked onto a series of existing programs designed to reduce plantings and channel money to farmers. For example, corn farmers who agree to idle 20% of their land are eligible to receive \$1.50 in cash per acre on one-half of the idle acreage. Under PIK, if they idle an additional 30%, they receive corn equal to 80% of their past production. Another hoped-for effect of this program has been to raise grain and cotton prices above the level where the government would be obligated to buy even more crops.<sup>5</sup> This program has been in effect for two years, however the results so far have not been encouraging.

There are several reasons why PIK has not been totally successful. As with past set-aside programs, farmers are simply

taking their worst acreage out of production, while applying more fertilizer and pesticides to the remaining land. This is resulting in higher production levels per acre in production. An example of this is seen in the record wheat yields of 40.7 bushels an acre during 1983. This occurred even though total acreage was decreased by 18% over 1982 figures. Another problem with PIK is that the government does not have enough stock of certain commodities, included in the program, to meet its obligations. This has been the case with both cotton and wheat. Surplus stocks existed in these crops, however, the government was not holding the surplus, farmers were. The solution was to foreclose on farmer-held surpluses. This was attempted with cotton farmers since subsidy prices were below market prices. With the government price at 55 cents a pound and a market price of 70 cents, the government attempted to force farmers to sell at 55 cents. This was done so there would be enough cotton in government storehouses for the PIK plan. Farmers went to Congress for help and were bailed out as they were paid 77 cents a pound. The end result was that the government lost 7 cents a pound on the cotton it bought to meet its PIK obligations, since its market value was only 70 cents a pound.<sup>6</sup> The PIK plan, like subsidy programs in grain, have benefitted mostly larger operations. The Agricultural Department defends payments to large farms by showing that any effort to reduce crop surpluses must include big operators. They claim this situation is justified since nearly 4% of the nation's farmers account for nearly 50% of total cash receipts.<sup>7</sup> On the pos-

itive side, the program has cut reserves that the government was holding, however, any program of this type is limited to the amount of reserves stored. It does not seem that any real benefits were realized by the majority of small farmers from this program.

It should be clear that the government is walking a narrow path by both trying to encourage production with subsidies and at the same time cut production with a land set-aside program. This policy seems incoherent and I am sure that many farmers do not understand these conflicting government policies.

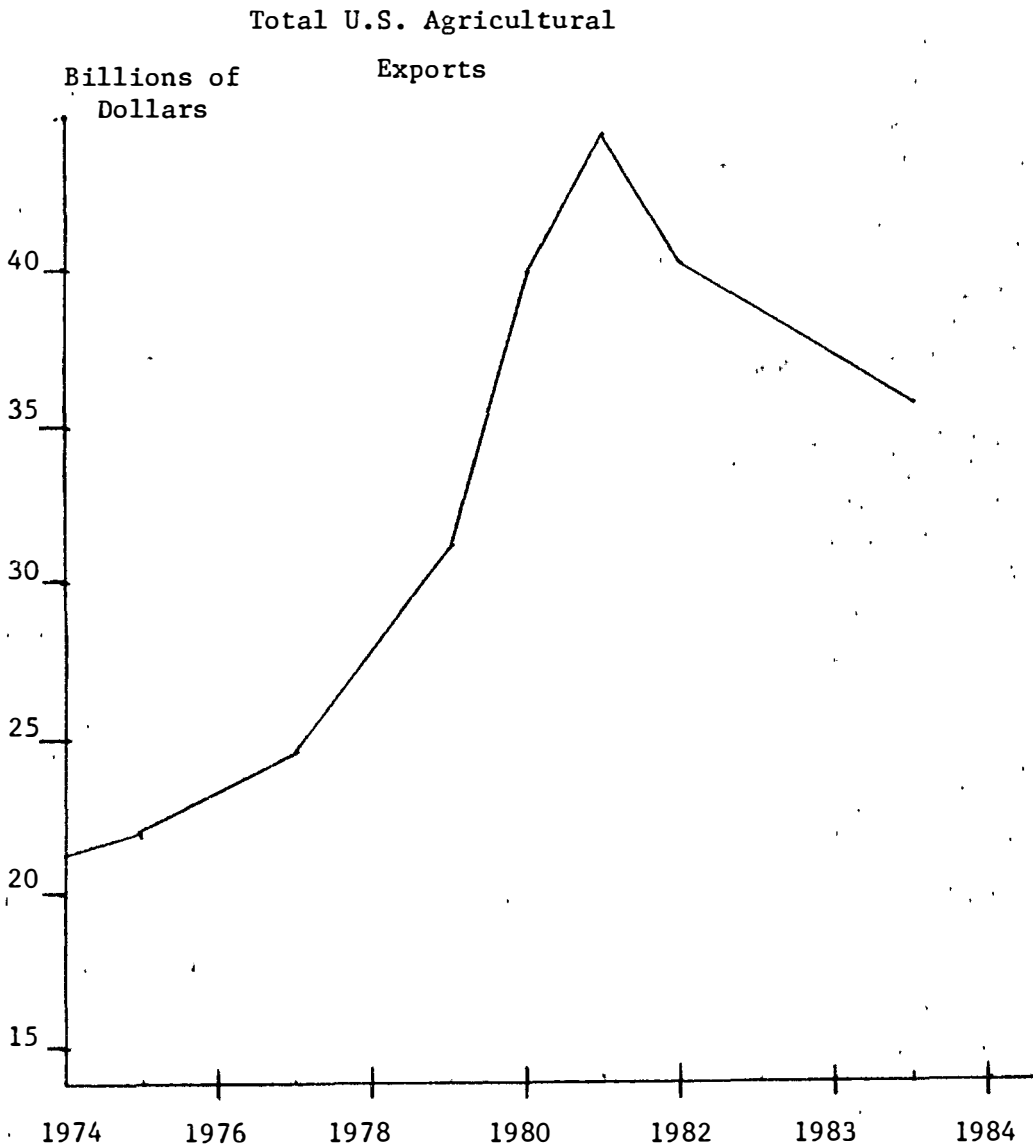
#### Grain Embargo

Another government action which must be discussed when considering the farm economy, is the Russian grain embargo of 1980. This act of punishment for the Soviet invasion of Afghanistan couldn't have come at a worse time for farmers. During this period farmers were encouraged to plant fence row to fence row with programs previously discussed. Prior to the embargo the U.S. had a 70% share of the Soviet agricultural market. This plummeted to 13% overnight. The result was a flood of grain on U.S. markets driving prices well below pre-embargo days. Currently the U.S. share of the Soviet market is about 35%. Other grain-exporting countries have stepped in to make up the difference.<sup>8</sup> (See Graph D)

#### Lack of Subsidized Exports

Another government policy which affects farmers is the fact that the U.S. government has refused to increase subsidies for

GRAPH D



The value of farm exports  
is declining.

exported grain while European and South American governments have used export subsidies extensively. The effect is that the subsidized foreign grain is cheaper than non-subsidized U.S. grain. Only rarely will the U.S. use export subsidies, as was done with obtaining Egypt's grain orders in 1982.<sup>9</sup> The effect has been to decrease exports, putting more grain on U.S. markets.

It may seem that I am putting all the blame for the farmers' problems on the government, however this is not the case as other factors have also caused problems. The next area we will consider is the effect of economic influences on the farm economy.

## CHAPTER II

### EFFECT OF ECONOMIC FACTORS

#### Strength of the Dollar

Economic factors which have caused problems for farmers include the strength of the dollar, declining land values, and a top-down price determination system. When the U.S. dollar is strong, as it currently is, in relation to other world currencies, the effective prices of U.S. goods (including farm commodities), are higher than other competing countries' goods. This occurs since it takes more units of foreign currency to equal one U.S. dollar. When exporting goods, the effect makes our products more expensive. Since other countries that produce grain have this price advantage, in relation to U.S. grain in foreign markets, they can sell more of their products than we can. This has contributed to a decline in agricultural exports. This can be seen in export figures where grain exports have dropped 15% in the past two years to 97 million metric tons. Over the same period, shipments by the 15 other largest exporting countries have risen 12%.<sup>10</sup>

#### Declining Land Values

The next economic-related problem for farmers that will be addressed is that of declining land values. In the mid-1970's

land prices were increasing every year as the country as a whole was experiencing double digit inflation. It seemed then that land prices would continue to climb for many years to come. Many farmers felt that if they wanted to expand at all they had better do it then before land prices climbed to even higher price levels. These farmers, as well as any new farmers entering the industry in the 1970's, purchased large quantities of land at what seemed would be the best prices they would find for years. The 1980's brought a drop in the inflation rates from about 17% to 3% annually. As inflation rates dropped land values also fell. Farmers were forced to reduce equity portfolios giving them less leverage to obtain new short-term loans to put out crops. Some were refused loans, as their equity was completely eliminated by dropped land prices, and forced into bankruptcy. As banks foreclosed on loans, and confiscated land which must then be sold, the amount of land on the market further depressed land values driving more farmers to the brink of financial disaster. Most of the small farmers still showing profits are those who bought or inherited their farms before land values soared. Farmers with large acreage that are prospering are those who either participated in the government's set-aside programs or maintained diversified operations in an era when specialization was the trend. Land prices are still on the decline, though they are falling at a much slower pace than in the past few years.<sup>11</sup>

### Top-Down Pricing System

The last economic factor which we will consider is the top-down pricing system which is in effect for farm products. In most industries where products are produced, the manufacturer can set his price for his products in relation to the competitive factors which are interacting in the market he is entering. Many industries will use a cost-plus pricing system where all areas of cost are considered, and an appropriate profit percentage is added to the cost figures. The farming industry is characterized as having a few large buyers (i.e., government and food corporations) and a large number of small suppliers. In this type of arrangement the buyers of farm commodities can dictate prices, since farmers are not well-organized to act as a bargaining unit. The government also has an interest to control food prices to contain inflation rates. It does seem, however, that farmers receive too low of a price where middlemen receive a higher percentage of the final price to the consumer. Until farmers become more widely organized with production limits and bargaining leverage, prices will remain low. Organization may prove a difficult problem for farmers as farming is a very diverse industry.



### CHAPTER III

#### RESULTS OF BANKING POLICIES

##### Commercial Loans

The banking industry and its interaction with farm interests is the next area of discussion. With the high inflation and interest rates that banks had to deal with in the 1970's, bankers were left with a large supply of available money for loans. This was caused as industry cut back expansions and other capital improvements in this period where the cost of money exceeded the rates they were willing to pay. Farmers seemed a safe investment with soaring land values to be used as collateral. Many farmers were also willing to take on debt for reasons previously discussed. Bankers were encouraged, by a high supply of available money and the high land values, to relax loan standards and accept some borrowers who would otherwise have been rejected. When inflation and land values dropped, some farmers and bankers were faced with severe financial dilemmas. As farmers lost borrowing leverage as land values dropped, they were cut off by the bankers since any new loans could not be secured by collateral. This meant that some highly indebted farmers could not put out crops, causing them to fall behind on loan payments. When they went to banks to refinance the loans they had gotten at high interest

rates, many banks helped by letting farmers renegotiate interest rates. Other banks refused to do this as they wished to keep these high interest loans in their portfolios as long as possible.

In many instances, refinancing long-term debt was not enough to keep some farmers from having to turn over all land and equipment to the banks. The banks must then sell the assets to convert them to dollars. Since land values had dropped so drastically, the banks would have a problem getting the loan amounts from the sale. If a bank had to foreclose on a few farms and lose money each time, the bank would experience a negative position and end up insolvent, making it unable to meet its commitments to its depositors.

#### Effects of Foreclosures

The effect of a large amount of land entering the market drove land values still lower making the problem worse for both farmers and bankers. Lower land values further eroded the farmers' equity position. With banks closing, farmers were left with fewer sources to obtain credit, driving more of them into financial problems. The bankers' portfolios were decreased in value as land prices fell, worsening their positions. Banks responded by tightening loans to farmers, since lower inflation and interest rates had brought industry and business back to the loan markets. Farmers accused bankers of turning their backs on them when they needed them most. Since bankers now had other avenues to direct loan dollars, they saw the highly indebted farmer as a bad risk.

## CHAPTER IV

### FARM MANAGEMENT PROBLEMS

#### Judgement Errors

The final area of consideration relating to the analysis of how the farm economy turned sour by 1985 involves the farmer himself. It is easy to see that the temptation to expand in the 1970's was great. With government programs encouraging high production levels, soaring land values, and readily available loans from eager bankers, the situation seemed perfect for large-scale expansion. The final decision to accept loans was made by the farmers themselves, and this led to disaster for many. In hind sight it is easy to say that this decision was a mistake.

#### Problem Indicators

The question which must be asked is were there any indicators that trouble could be on the horizon. It does seem unreasonable to expect inflation and land values to continue to climb indefinitely in the boom and bust cycles our economy has always fluctuated by. The recession would most certainly be followed by a recovery period and this always moderates inflationary pressures. A high degree of pent-up demand also existed, though it would

certainly be hard for farmers to realize that other industries would have a waiting market when the market they knew bought everything they could produce. Another sign was the withdrawal of big business from the capital markets, since money was too expensive. Farmers would tend to ignore such signs as they frown upon big business and would question the motives of any action taken by top business executives.

Another sign post of possible problems was the increase of exports to other nations during the 1960's and 1970's. This increase was putting farmers in the position of supplying a market which they, or their government, had no control over. Markets as volatile as these could be lost in a matter of days, where new market sources are difficult to develop. The final sign of possible trouble was the increase in production levels that European and South American countries have experienced in the past 10-15 years. These countries' governments have actively encouraged production by supporting their farmers' crops with export subsidies. Obviously, these crops must find markets at the expense of U.S. farmers, since the U.S. is the largest grain producer. As can be seen, the farmer has made mistakes or errors in judgement which contributed to the current hard times in the farming industry. The purpose of this analysis has been to show the operating conditions or economic climate of the farm industry so that it can be demonstrated how to deal with the factors. These factors could affect the success or failure of any new operation which we will design in the next part. The intent of this section was not to place blame or

recommend solutions to the problems which we have discussed. It is left up to each individual reader to decide for himself, if he desires, which factors have contributed the most to create the negative operating environment as it currently exists in the farming industry.

The next part of this report deals with an analysis of a case study to determine under what type of circumstances a new farming operation may succeed. The effort to follow will try to give an example as to how the author of this report believes an operation could be given the best possible chance of success, with the goal of showing how to manipulate the current poor operating environment to our best advantage.

## PART II

### THE CASE STUDY

#### CHAPTER V

##### POSITIVE FACTORS IN THE ENVIRONMENT

As previously stated, the current condition for operation by individuals who entered the industry in the 1970's was unfavorable. The economic conditions which existed then have a negative impact today on their ability to operate a profitable enterprise. These conditions have changed, and it would be best to analyze what these changes mean to an individual currently considering entering farming as an occupation. The factors we shall consider are; land prices and interest rates, prices of both new and used equipment, and analysis of current information about the industry.

##### Land Values and Mortgage Rates

As the inflation rate declined in the late 1970's and early 1980's, land prices also fell. In many areas they are now half of what they were in the early 1970's. The impact of this drop is that the land required to grow the selected crop is cheaper. This means that a lower amount of cash flow is necessary to make

an operation profitable since cash outflow, in the form of mortgage payments, is decreased by approximately one-half.

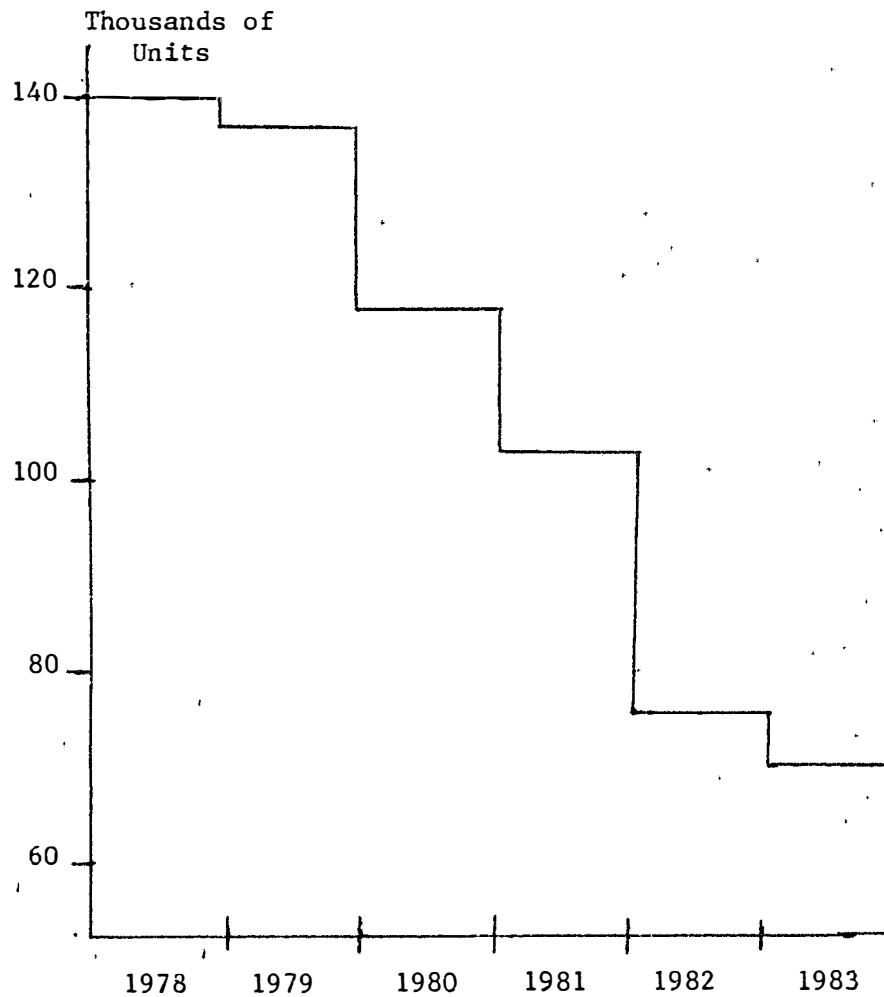
The rate of interest which is charged on loans today is also less than it was in the mid-1970's. Mortgage rates at that time were 14 to 17% depending on the type of loan obtained. Today rates go as low as 9½%, with fixed rate mortgages at about 12%.<sup>13</sup> This lower mortgage rate means that a lower percentage of interest will be charged. The combination of lower land prices and lower interest rates are beneficial to anyone considering the purchase of farmland. The farmers who are in trouble now are the ones who had bought land at inflated prices and paid high interest rates to get it. Fortunately, the current economic climate is healthy for those considering obtaining financing at this time.

#### Equipment Cost

The next factor to analyze is the cost of both new and used equipment. As farmers found financing hard to obtain, since equity portfolios had decreased, they cut back on the purchase of new equipment. This meant hard times for equipment manufacturers as sales dropped off. (See Graph E) The only response that implement manufacturers could make was to cut prices to try to encourage more sales. This condition led to lower profit levels for manufacturers and lower prices to farmers who could afford to buy. The market has not yet recovered and new equipment prices are still at bargain levels. The amount of quality used equipment is also

GRAPH E

Tractor Sales



Sales prospects are grim  
for farm suppliers.



at a high level with prices being depressed by an increase in auction sales.<sup>14</sup> Lower prices for farm equipment, due to the same factors which are causing some farmers to fail, is advantageous to anyone considering entering the farming industry.

### Lessons Learned

The final factor we shall consider relates to lessons which are now easily learned from the plight of failed farms. Many farms which failed attempted to develop an aggressive plan of expansion at the wrong time in the wrong commodities. This lesson is valuable and shows that conservatism should be the goal as far as growth is concerned.<sup>15</sup>

A slow steady growth rate should be followed, which means it may take years to achieve a desired level of operation. Any scheme to grow quickly involves a great deal of risk. Since your home and lifestyle, as well as your business, are at risk, a great deal of care should be taken to ensure a low risk position when considering expansion.

## CHAPTER VI

### SELECTION OF A MARKET

#### Factors to Success

We are now at the point of our study where we are ready to pick a market whose needs we will desire to meet. This step must come first so we can be sure the product(s) produced are needed and saleable. This study will assume that the decision to relocate and to enter a farming occupation has already been made.

When considering a market there are some important factors to consider, since we must design our entire operation to meet the market's needs at an acceptable profit level. In order to succeed in farming, all farmers should try to have a high degree of market control by having less reliance on crops which require export sales for their markets. Another method to help meet a market's needs profitably would be to enter a market where the product can be produced by a labor-intensive but self-sufficient form of agriculture. This will keep costs of machinery low in relation to output. It would also be ideal to be located closely to our market so transportation costs will be kept to a minimum.<sup>16</sup> These factors will help in market/product selection, site selection, and they should be criteria for our final decision.

Market Selection

The market which has been selected for this case is to provide hay as feed for thoroughbred horses in North Central Kentucky. The market will be anyone who purchases hay as feed for horses. The product will be a high quality timothy hay and the site will be the South Central Indiana/North Central Kentucky area. This market was chosen because the product which meets the need of this market (hay) is not controlled or subsidized and does not rely on exports, but is consumed close to the area of production. The product was chosen as it meets the needs of the intended market and uses a labor-intensive production method. The site or area of site selection was chosen as it is located close to the area of final consumption. We shall now analyze the product and how the product is produced and sold. The last area we will consider is to evaluate the success potential of such an operation.

## CHAPTER VII

### PRODUCING THE PRODUCT

#### Needs of the Horse

The product selected is designed to meet a part of the needs of a thoroughbred horse. The feeding of horses presents some special problems. The horse has a single stomach, but a special development of the large intestine adapts it to the digestion of coarse forages. The proportion of hay to grain-fed will depend upon the character of the work: the harder or faster the work the less hay-fed. Brood mares and growing colts best utilize roughage. Horsemen prefer timothy over the legume hays because of the constringent effect on the bowels. Since the majority of animals fed by breeders will be brood mares and colts, the importance of timothy as a feed is obvious.<sup>17</sup>

#### Description of Timothy

Timothy (*Phleum pratense*) is of European origin, but it was first cultivated in New England about 1747. By 1847 timothy was the most important hay crop in the United States. The stems grow 20 to 40 inches tall. They emerge from a bulb-like base and form large clumps. Timothy is commonly sown with clover-medium red,

mammoth, or alsike. It may also be sown with alfalfa in order to get a hay with higher protein content and to maintain a better soil productivity.

A change in the quality of hay occurs as the season advances. The percentage of nitrogen-free extract, fat, and protein gradually decreases while the less digestible and less valuable crude fiber increases with maturity. Therefore, timothy should be cut when it is in early bloom in order to get the greatest value per acre of high-quality hay.<sup>18</sup>

#### Breeders' Preference

This early-season timothy is the type of timothy that horse breeders desire. They want a high-quality grade of timothy as feed for mares and maturing colts. Many breeders also want timothy which is baled in small rectangular bales as opposed to large round bales. The small bales can be more easily inspected to ensure a consistent feed quality and a low weed content. These smaller bales are also more easily handled than the larger bales, and feed consumption is more easily regulated.<sup>19</sup>

#### Climate and Growing Environment

Timothy grows better on clay loams than on light-textured, sandy soils. It is well-adapted to the cool climate of the eastern Corn Belt. Timothy does not require a high level of solar radiation. Due to the large size of its leaf area, it is capable of absorbing 85% of the total available amount of light. This makes

it have an even growth rate even in fields which may be either partially shaded by trees or on steep hillsides which receive sun only during certain times of the day.<sup>20</sup>

Timothy can be sown with wheat, if a crop other than hay is desired. Since the product we wish to concentrate on is hay, we will plant timothy with alfalfa. A combination of timothy and alfalfa gives an initial crop higher in protein content than timothy sown with clover. This is desirable for our purpose since brood mares and colts require a high-protein food. The first step to growing this high-protein forage crop will be to plow the ground and plant in the fall, 2 lbs. of alfalfa seed per acre.<sup>20</sup> This combination of timothy seed to alfalfa seed will produce the high quality of hay desired.

The amount of land which we will use in this case is 100 acres. It is felt by the author that this amount of land is affordable to most people entering farming. Current costs of clay loam acreage in the area chosen as our site is approximately \$500/acre. The tract of 100 acres will cost \$50,000. It should be possible to find a tract of land of this size with a house and barn for this amount. Monthly mortgage payment should average from \$450 to \$600 depending of the type of loan selected, and the amount of down payment. This study will assume a 10% down payment with a loan balance around \$45,000.

### Equipment for Production

The equipment needed for production will be a tractor with implements consisting of a plow, disc, spreader-broadcaster, haybine, rake, baler and at least two hay wagons. The cost of the above equipment will be the largest expenditure that will be made besides the land. If properly maintained, this cost will be spread over many production years even though the initial purchase is made now.

The equipment can either be purchased new or used. It is recommended by the author to obtain used equipment where possible. When purchasing used equipment, great care must be taken to ensure that the equipment bought is in good operating condition. If the person purchasing the equipment is not knowledgeable of what he is buying, it is recommended that he take someone who does have experience in this area with him to act as an advisor. An error here could be very costly and jeopardize the entire operation.<sup>21</sup>

The alternative to used equipment is new. Some good prices do exist on new equipment, however, the cost would probably exceed \$40,000 for the above-listed items, where used equipment could probably be obtained for around \$20,000.<sup>22</sup> Financing could be obtained for equipment. Interest rates will be higher than mortgage rates. This case will assume that the equipment used is paid for. This will make it easier to show the feasibility of the operation. The equipment will be listed as an asset in the analysis and the reader can adjust his figures if the equipment must be financed.

### Crop Production

To produce the crop, the ground must be seeded with a broadcast seeder applying 2 lbs./acre of timothy seed and 10 lbs./acre of alfalfa seed. Fertilizer should also be applied at a rate of 16 lbs./acre, if needed.

Both of the grasses being grown are very hardy and not subject to any special care. Alfalfa can have problems with the alfalfa weevil, but commercial sprays have been developed to deal with this problem. There is also a weevil-resistant hybrid strain of alfalfa seed available, but, since weevil problems do not usually occur, it does not seem worthwhile to spend the extra money required for this hybrid seed.<sup>23</sup>

### Harvesting Yields and Storage

The timothy will develop quicker than the alfalfa resulting in a high-yield first cutting. This first cutting will produce the highest number of 40-lb. bales per acre, with average yields of 170 bales/acre. Care should be taken when baling to make certain that the hay is dry prior to baling. The use of a haybine, which cuts and conditions the hay, will shorten drying time. Turning the rows with a rake also helps hay dry faster. Drying is essential to prevent moisture from causing a breakdown of the plant matter which produces heat. This heat could cause spontaneous combustion which could result in a fire. Proper ventilation in the loft of the barn is also necessary to permit evaporation of any moisture present.



The second cutting will occur around the first part of July and will consist mostly of alfalfa with some timothy present. Yields for this cutting will be about 65 bales per acre. The third and final cutting will occur around the end of September with a yield of about 60 bales per acre. The third cutting will consist totally of alfalfa. The first cutting will be the best feed for animals under heavy work schedules, while the second and third cuttings will be ideal for brood mares, developing colts, and dairy cattle, since there is a high-protein level present. If seed production is desired, a part of the acreage, normally in the first cutting, must be left to mature into seed. The seed will mature by about the end of July. A combine will be required to harvest seed, which could be sown that fall for next spring's crop. This practice does require losing the highest yield for that year on the set-aside acreage and the purchase of a combine. For these reasons seed is not usually harvested on a large scale, as most farmers purchase the seed needed for the next year's crop.<sup>24</sup>

## CHAPTER VIII

### PRICING AND SELLING THE PRODUCT

#### Determining Price

Once the product has been produced, a price must be determined and the sale of hay made. As previously stated, the market for hay is not controlled or subsidized and a price will be determined by market factors. The quantity of hay in an area and its quality will be the two main determinants which will affect its price. Since soils, rainfall, and seed type will vary from one growing location to another, quality will vary. The price for the first cut will range from \$1.50 per bale to \$1.75 per bale. Better quality hay will bring the highest price. The second and third cutting of hay will bring between \$2.00 and \$2.25 per bale. These cuttings have a high alfalfa content and a higher level of protein. Pricing is higher for these cuttings, however, since production levels are lower, the most revenue is generated from the first cutting. Pricing can also be determined by negotiating directly with hay buyers.

#### Methods of Selling

Two types of selling methods exist for hay. One method utilized is where the producer sets a price he wants for the hay

and advertises for buyers. This is the "spot market" for hay buyers. When supplies are short a buyer will utilize this market to meet his needs, but very little hay is purchased in this manner by large breeders. The method used by most is a hay contract where the producer negotiates with the buyer for an entire season's production. A contract is established, and the producer agrees to supply at a set price. This price either includes delivery or the buyer agrees to pick up the product on site. The producer stores the hay if it is to be delivered. This results in more labor and transportation costs for the producer so the hay is priced higher. If the buyer agrees to pick up the hay, the producer will call the buyer when his hay is baled in the field. The buyer then sends out trucks to immediately bring it to his storage location. The price given the producer is less, but he has less labor costs in the hay. In either the delivered or picked-up-on-site selling method, the contract system benefits both parties. The buyer is guaranteed a supply and the producer guaranteed a sure sale of his product at a guaranteed price.<sup>25</sup>

## CHAPTER IX

### EVALUATING PERFORMANCE

This section will analyze the costs, revenues, and resulting profits or losses which could result from the case as it has been stated.

#### Defining Costs

The costs will be the land which was purchased, the equipment purchased, the seed and fertilizer purchased and miscellaneous costs of operation. Miscellaneous costs will include health and property insurance, gasoline or diesel fuel, and any other items such as baling twine, maintenance of equipment, and other items of minimal costs.

<u>Item</u>	<u>Cost (Annual)</u>		
Land	\$450/mo. x 12 mo.	=	\$ 5,400
Equipment	\$20,000 ÷ 10 yr. life	=	\$ 2,000
Seed & Fertilizer			
timothy	100# x .80/lb.	=	\$ 160
alfalfa	1000# x 2.50/lb.	=	\$ 2,500
*fertilizer	100-50# bags x \$20 ea.	=	\$ 2,000
Misc. Costs (estimated)		=	\$ 9,000
			<hr/>
			\$ 21,060

\*May not be needed first year.

### Stating Revenues

Revenues will be those which are generated from the sale of hay alone. Other items could be produced besides hay which could contribute to revenues. The author would recommend that similar items, which require a high degree of labor, have an uncontrolled market, and are easily sold in the geographic area where the farm is located, be produced. These could be either crops or livestock depending on the interest of the person involved. Another source of revenue would be for the prospective farmer to work part- or full-time in an outside job to supplement farm income until the operation is established. This would give a sound base of income while giving the benefits of country life. Benefits which most jobs provide would also help reduce miscellaneous costs.

### Production Revenues

1st cutting	170/acre x 100 = 17,000 x 1.50 = \$ 25,500
2nd & 3rd cutting	125/acre x 100 = 12,500 x 2.00 = \$ 25,000
	<hr/>
	Revenue \$ 50,500

### Results of Operation

The revenue less the expenses would generate a profit of \$29,440 before taxes. With a tax rate of approximately 35% (estimated), this would leave an after-tax profit of \$19,500. This amount is shown as an example as to what such an operation could hope to generate. Real profits of operation will vary; either

higher or lower. The figure shown is an example only. Since many of the cost and revenue figures are estimated, this amount is in no way intended to be exact.

The goal of this study has been to show that farming can provide a profitable enterprise for a motivated, hard-working individual. It is important to deal with the factors which you confront in the marketplace in an intelligent, conservative fashion. The products chosen to produce must be needed by a market. It is felt that careful need-analysis and directing products to real needs, not artificial ones, will, to a large part, determine the success of any operation.

## ENDNOTES

### Chapter I

<sup>1</sup>Jeff Blyskal, "Invisible Hand Slaps Farmer," Forbes, February 17, 1984, p. 34.

<sup>2</sup>"Special Report: Why Recovery May Skip the Farm Belt," Business Week, March 21, 1983, p. 106.

<sup>3</sup>"Special Report: Why Recovery May Skip the Farm Belt," Business Week, March 21, 1983, p. 87.

<sup>4</sup>"Special Report: Why Recovery May Skip the Farm Belt," Business Week, March 21, 1983, p. 109.

<sup>5</sup>James Bovard, "Fiasco on the Farm," Readers Digest, April, 1984, p. 151.

<sup>6</sup>Ken Sheets et al., "\$22 Billion Fails to Spell Relief for Nation's Farmers," U.S. News & World Report, August 15, 1983, p. 54.

<sup>7</sup>Ken Sheets et al., "Few Hopes Blossom for Farmers in Spring of 1985," U.S. News & World Report, May 20, 1985, p. 74.

<sup>8</sup>"Interview with John Block, Secretary of Agriculture: As U.S. Farmers Struggle for Foreign Markets," U.S. News & World Report, March 14, 1983, p. 60.

<sup>9</sup>"Interview with John Block, Secretary of Agriculture: As U.S. Farmers Struggle for Foreign Markets," U.S. News & World Report, March 14, 1983, p. 61.

### Chapter II

<sup>10</sup>"Special Report: Why the Recovery May Skip the Farm Belt," Business Week, March 21, 1983, p. 106.

<sup>11</sup>James Bovard, "Fiasco on the Farm," Readers Digest, April, 1984, p. 152.

<sup>12</sup>Interview with Roman Sitzman, Professional Farmer, St. Meinrad, Indiana, June 20, 1985.

## Chapter V

<sup>13</sup>St. Louis Post-Dispatch, 6 October, 1985, sec. H, p. 6.

<sup>14</sup>"Special Report: Why the Recovery May Skip the Farm Belt," Business Week, March 21, 1983, p. 116.

<sup>15</sup>"Special Report: Why the Recovery May Skip the Farm Belt," Business Week, March 21, 1983, p. 112.

<sup>16</sup>"The Trouble on the Land," The Progressive, April, 1985, p. 11.

## Chapter VII

<sup>17</sup>Collier's Encyclopedia, 33rd ed. s.v. "Feeding and Caring of the Horse," by C. W. Gay, p. 261.

<sup>18</sup>United States Department of Agriculture, Grass (Washington D.C.: Government Printing Office, 1948), p. 685.

<sup>19</sup>Interview with Roman Sitzman, Professional Farmer, St. Meinrad, Indiana, June 20, 1985.

<sup>20</sup>Interview with Roman Sitzman, Professional Farmer, St. Meinrad, Indiana, June 20, 1985.

<sup>21</sup>Harris Smith and Lambert Wilkes, Farm Machinery and Equipment (New York: McGraw Hill, 1976), p. 286.

<sup>22</sup>Interview with Roman Sitzman, Professional Farmer, St. Meinrad, Indiana, June 20, 1985.

<sup>23</sup>Interview with Roman Sitzman, Professional Farmer, St. Meinrad, Indiana, June 20, 1985.

<sup>24</sup>Interview with Roman Sitzman, Professional Farmer, St. Meinrad, Indiana, June 20, 1985.



Chapter VIII

<sup>25</sup>Interview with Roman Sitzman, Professional Farmer, St.  
Meinrad, Indiana, June 20, 1985.

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David Allen Smith was born on March 1, 1956 in Gary, Indiana. He was raised in a small-city setting in northern Indiana. He attended Indiana State University and graduated in 1979 with a Bachelor's of Science Degree in Business with a specialization in marketing. While in college he met, and later married, a country girl who had lived her entire life on a family-owned farm. This was the first time the author had any relationship to a farming operation and the way of life which accompanies such an occupation. It was the interaction between a real farm environment and the author which inevitably resulted in the topic contained in this text.