

# **THOMPSON AGRICULTURE ALTERNATIVES**

## **2009 REPORT**

# Inspiration, Documentation & Education

## INSPIRATION

Our experience tells us that there are no quick answers or one special recipe to solve agriculture's problems. We find ourselves asking more questions each day and hope we are asking the right questions. We will share experiences and principles and you will have to do the sorting. We would like you to consider **adapting** these ideas to your situation, rather than outright **adopting** them. The new ideas we share come by inspiration and by perspiration. We are very thankful for the inspiration from above but when the inspiration seems so far away, we had a single purpose in mind and were able to stand together against the tide.

Dick attended Iowa State University in the 1950s and received a B.S. and M.S. in Animal Husbandry. We were high input farmers from 1958 through 1967 and purchased everything the salesman had to sell. The rotation was continuous corn with high rates of anhydrous, herbicides and insecticides. Dick was building his kingdom, where enough was not enough. We changed to a more balanced farming in 1968. The rotation was changed to a five year (C-SB-C-O-H) rotation. Most farmers will not be able to close the door completely on purchased inputs. We have been on both sides of the fence in farming (chemical and organic), in education with formal training and then practical retraining.

Our complete withdrawal from chemical inputs did not speak to our neighbors. The vast majority of financially stressed farmers perceive they can not jump from one extreme to another. Conventional farmers perceive that the organic movement is asking them to make a complete change from step A to step Z all at one time. This has given the organic movement a bad name and has built many walls between people. The perception needs to be changed to a practical, sensible approach of moving from step A to step B and then step C and then continue moving toward Z. Years ago we would

stand up and the first thing that came out was, "we don't use chemicals" and 95% of the audience was turned off. We trust we are learning how to communicate. Our role is not of being the convictor, but share what we have experienced. The philosophy of the Practical Farmers of Iowa organization is to make all kinds of farmers welcome and comfortable at summer field days and winter workshops.

The organic movement has been "the fly in the ointment" for the sustainable agriculture movement. We ourselves have to keep explaining the difference between the two concepts. Organics is perceived as antichemical. This is a negative connotation and only tells what the organic movement is against and tells nothing about the many positive farming practices of the movement. Practical Farmers of Iowa is not an organic organization but is perceived by some as one. The sustainable movement is labeled by no tillers as antipesticide and labeled by the organic folks as being no tillers. We need to change our perception by emphasizing positive practices as diverse rotations, rotation of tillage and various kinds of conservation practices that increase profit, take better care of the resources and are ultimately kinder to people. We have the data that proves the above statement is true, so let's use the information in a positive way that will be more inviting to other farmers.

Dick gave a 3 hour seminar at the USDA building in Washington, D.C. in March of 1986. The three topics were ridge-tillage systems without herbicides, using cover crops in the ridge-till system and a design for side by side randomized and replicated research plots managed by a farmer. This seminar was arranged by Peter Myers, Deputy Secretary of USDA. This meeting would not have happened 20 years earlier, nor 15 years earlier, nor 10 years, nor 5 years before. Timing is very important to be an effective communicator and most of us are not willing to wait for the right time.

The door of communication has opened to conventional farmers and university people since we

have started doing research with herbicide plots and using starter fertilizers. The different approach of reducing inputs, saving the soil and protecting the groundwater has opened doors to soil conservation people and even grain elevator personnel that sell chemicals. Our goals have not changed, but the approach has changed and the way we are perceived is slowly changing.

We have traveled for the past several years and shared the need for **change** in agriculture. Problems may be in agriculture or in the land, but the **cause** of these problems is in the heart of mankind. If we are really going to be serious about agriculture and the problems of erosion, pollution, high inputs cost: one must realize the change must come from within. E.F. Schumacher, the noted economist, said; "The material scheme is not working, the change must come from within and not from without". Robert Rodale said, "The dirt that is polluting our rivers, our air, our food, is produced in our thoughts, our ambitions, and in our desire to live a life of ease. You can't legislate purity while people are still thinking pollution." Peter Myers, Deputy Sec. USDA, said in Des Moines, Iowa; "The solution to erosion problems is a change in attitude of the farmer."

In order to receive government farm payments, farmers must take a certain percent of their land out of production. These idle acres are required to be covered and not harvested. What will happen when the farm payments stop? The all row crop, fence row to fence row farming will be back. Government programs come and go, was there any real change? Sharon says, "Real changes come only by commitment."

Our role in the ecological field has been in investigation and experimentation. The research on this farm has been designed to answer questions such as: What kind of rotation is needed when chemicals are reduced or eliminated? What happens to crop yields and quality in a closed farm system? What is the best method for handling livestock and human waste? Why do farmers loosen up the soil in the fall and pack it back down in the spring? How can a reduced herbicide system fit with a minimum tillage system? Are all weeds

bad? Can farmers use certain weeds or crops to control the weeds that are causing problems? Why do farmers usually think the solution to a problem is to buy something? Is there a connection between high nitrogen soils, high protein foods and disease?

People ask us what brought about the changes in our life style. These changes are connected with our Christian experiences. Many years ago in our first Christian experience, the burden of guilt was rolled away. Our lives didn't change much since we were not caught up in drugs or alcohol. The real change started taking place in 1967, when we began learning about the Holy Spirit. This is when Dick realized that he was caught up with things, building a kingdom with sheds, silos, cement floors and more land. Enough was never enough and quick was never quick enough. We were to the place where we were looking for something better. The livestock were always sick with one disease or another. Sickness was the rule and health was the exception.

A word came to us in a supernatural way, through the gifts of the Holy Spirit, the word being that God was going to teach us how to farm. This seemed very strange for Dick since he had two degrees in Agriculture and had lived on this farm all of his life. People respond to this comment in several different ways. Some people may feel they have an evangelist on their hands and have both feet braced and and will avoid ever being cornered. Remember we are not the convictor, we just share our experiences. Some people may feel that we are off in left field in spiritualism or what have you. Our answer to this feeling is that our operators manual says we are to be led by the Spirit and walk by the Spirit. This is to be a normal, natural way of life, not something spectacular or spooky. We mention this third dimension because this has had a great impact on our lives and, in our opinion, contains the answers for the problems we face in this hour. When people ask why we changed our farming habits, this is the way it happened and we must tell it like it happened. Since that time, things have been really moving, exciting and very rewarding. Life has taken on a real purpose and definite direction. Of course, there have been some prob-

lems, but if we can have the right attitude, these problems can turn into opportunities.

Many people and companies have called and offered opportunities to sell their many different products. We have never been allowed to be involved in selling, so we have nothing to sell, we just share ideas. The ideas we have learned are to be given away. Knowledge that has been learned is not to be used as prey upon fellow mankind.

A question often asked is, How do you get along with your neighbors? The answer is fine. We live in a very competitive, "Keep up with the Joneses" neighborhood, with their big grain farms and big machinery. We are all alone in our type of farming in our neighborhood. Several years ago while cleaning out a hog waterer, Dick heard a voice that said, "Get along but don't go along." There was no other person around at the time. This concept is what we are supposed to do. We don't have to convict or convince anybody, just share when asked. This makes the yoke easier and the burden lighter. This policy has left the door open to go to many land grant universities in the United States and overseas during the last few years.

People ask if we ever participated in a farm strike? We say no. However we have been on strike, so to speak, for many years. Our way of striking was reducing the number of acres of feed grains and lowering costs by reducing commercial fertilizers, herbicides and insecticides. From time to time, a neighbor has said, "If we would stop buying fertilizer, it would cut our costs, the yields would be less but the price would be much more and we would make a higher profit". We said, that is true (**Figure 1-4**). This neighbor has not changed. Is the reason that they don't change stem from the fear that they cannot keep up with their neighbors? What a farmer won't do to beat his neighbor by one bushel per acre!

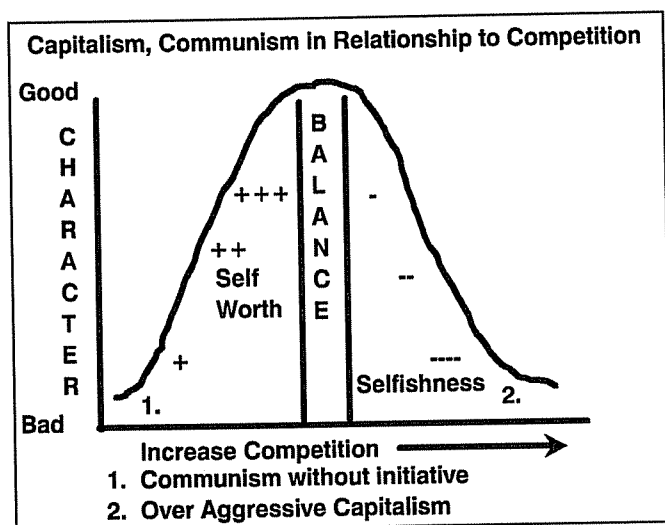
We feel that herbicides, no-till drilled soybeans, flush hog systems, low interest money has allowed agriculture to become a monster. With these items readily available, there is no limit to the number of acres or number of hogs a farmer or corporation will try to manage. Agriculture has lost it's re-

straints! The larger farmers are moving the smaller operators off the land. Now the larger farmers are even being moved off the land. Where and when will the consolidation stop? This is a high social cost to people, communities, schools and churches.

We feel that society is being plagued by a spirit of ease and greed. Just because it is profitable and easy, doesn't make it right. Man no longer controls the machines he has made, but the machines are controlling mankind. Some say we will have to educate mankind and change his or her mind, but we feel it must go deeper to the inner person. Revelation must come to show what life is really all about. What we need is a people who can have their **heads** in the clouds, who can tune in, dream, put their ear to the ground; and still have their **feet** planted firmly on the ground, being stable, honest, dependable people; having **hands** ready to serve humanity.

In our push to get bigger and better, and do it easier physically, we have changed physical anguish of the past into mental anguish of the present day. This kind of stress plays an important role in our modern day diseases, such as heart trouble, cancer, arthritis and etc. This over aggressive competition does not build good relationships with other people. This situation typified in bidding against your neighbor and paying \$4,250.00 per acre for additional land, or trying to cash rent land for \$175.00 per acre, or painting cattle in order to win the prize. What a farmer won't do to beat his neighbor by one bushel per acre! This kind of life style is violent and exploits our own beings, our fellowman, and last but not least, we are destroying our environment. Some people of the United States are glutted with things, yet starved and desperate for belief and purpose. The structure of American Agriculture is a moral issue. **We must realize there is a conflict between our Christian heritage and the over aggressive capitalism system.** We don't have to live this way. We can shift down a gear. Lets change our life style from within because we want to, lets not wait till we have no choice, then we will change because somebody else says we have to. This point was made loud and clear in our minds since our visit to mainland China in 1976. We may



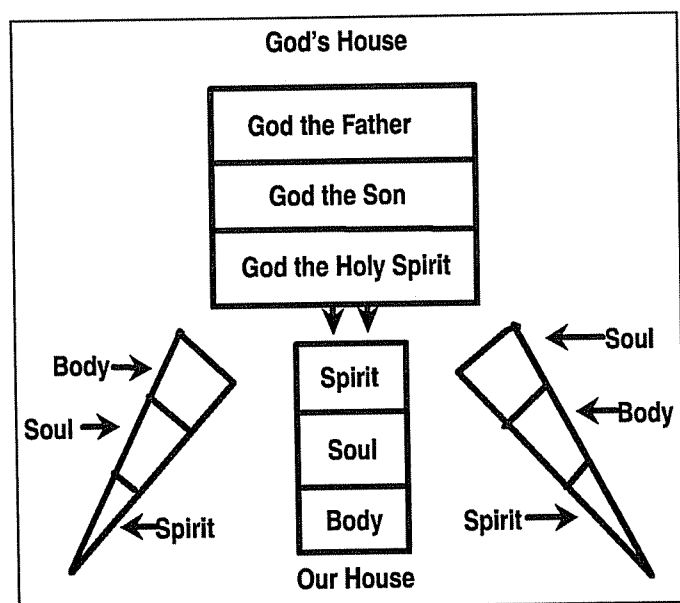


### The Four C's

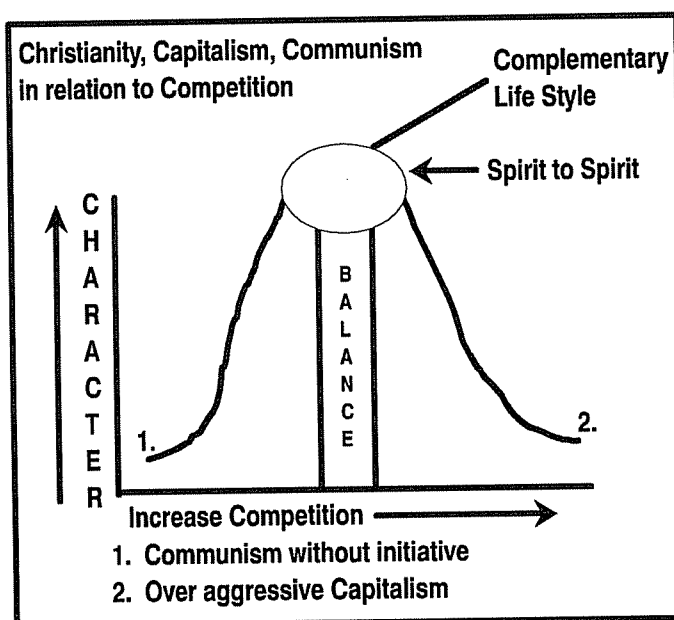
We will discuss Competition, Christianity, Capitalism, and Communism. How do these four "Cs" relate to each other? **Figure 1-1** is an endeavor to show the three "Cs" on a graph. Beginning competition produces good characteristics in people. Contests like sports, 4-H, and speech during early life produce self worth and self supporting abilities so people will become good citizens. This area is noted by positive marks. Competition when Dick was a boy was fun. He was involved in band, sports and 4-H. His 4-H club worked hard to beat the Dodge Go Getters (another 4-H club), but it wasn't a do or die matter. Baseball and basketball was a good part of high school life even though we were not the hottest team on earth. Some 20 years later, our kids started to become involved in sports and the 4-H program. It looked like the fun had been removed. The coaches yelled and screamed at the kids and made fools of themselves. The kids had to practice before and after school. Big money had come into the 4-H steer show business. We were stunned and ready to throw out the whole works of competition and ready to throw the baby out with the bath water. Something had happened! Dick knows the competition of his early life was a necessary ingredient to prepare for what we are trying to accomplish today.

**Figure 1-1**

not be overtaken from the outside, but we are rotting from within. When we cannot rule ourselves, we set the stage to be ruled by others. We say we are free, but are we really free when we are over extended being head over heels in debt? Some feel we will be controlled by Communism, but we feel we will be controlled by the countries or the people we are indebted to. We need to become more self reliant individually and nationally and make better use of what we have. **With freedom comes responsibilities; we are not free to exploit ourselves, our fellowman, our natural resources, or the environment.**



**Figure 1-2**



**Figure 1-3**

He remembers a speech on soil conservation given in high school. The opening line was "Do you know how many railcars of soil are being washed down the Mississippi river each day?" He remembers practicing his lines while pacing back and forth behind the cows as the milking machines were working.

The question of social injustice was brought up at a meeting on bio technology. Shouldn't there be a social impact statement along with an environmental impact statement on any new technology? "That is Communism", said a well known private business executive. We protect certain animals from becoming extinct, what about the same treatment for farmers or any group of people? We have a check-off on the state income tax return for wildlife in Iowa and a check off for the politicians on the federal return. The system has become unbalanced when the human dimension is being ignored. Communism without initiative and aggressive capitalism produce the same effects in human characteristics. How do we stay in the balance area?

The idea of the bell shaped curve (**Figure 1-1**) helps understand the good and bad aspects of competition. There has to be self worth, but it can be over done. The selfish area is noted by the negative marks. The bible says, "Love thy neighbor as thy self." If you see yourself as the scum of the earth, how much help can you be to someone else? It is hard to realize where we are located on the competitive curve. It is very easy to slide down either side. Either way you go, it is the wrong direction and is moving toward demoralizing character traits. As we move over into the over aggressive competition, the competition becomes destructive to human characteristics.

### Competition vs Complementary

We would like to share some historical stories we learned from TV documentaries. The General Douglas MacArthur story is full of competitive lines showing difficulties with ego trips, power-control trips (I'm in charge), jealousy, envy, hatred. During World War 1, he thought he was invincible so he didn't wear a helmet at the front line. Presi-

dent Roosevelt sent him to the Phillipines to get him out of the way. Mac Arthur had difficulty being a team player with other military counter parts during World War 11. MacArthur started to invade China during the Korean War. President Truman said "No I'm Commander in Chief". MacArthur pushed on and finally Truman fired him. We were stationed a year in Japan during the Korean conflict so this history was of great interest. While on a tour of China in 1976, we visited The Red Star Commune where the Chinese stated the U.S. started the Korean War. Now knowing more of MacArthur's history we may better understand this Chinese statement. Upon his return America gave MacArthur the greatest heros' parade ever. MacArthur wanted very much to be President of the United States, but Dwight Eisenhower, his former clerk while in the Phillipines, beat him out in the Republican nomination. We visited MacArthur's memorial in Norfolk, VA while attending a weed scientist conference in that city. He wasn't buried with the other soldiers at Arlington, but he had a sparate place. Neither Eisenhower or Truman attended the funeral. General MacArthur won many battles but he never won the war of competition that was going on inside.

### Thinkers & Doers

More competition can show itself between the classes of the thinkers and the doers. Selfishness shows up when one thinks the only good ideas are mine. There should open minds in both camps for better ways of doing things regardless of where the idea came from. Thinkers should do more than just think, they should have some experience in the doer field. An example, all engineers should be a mechanic first. The best is to have thinking workers and thinkers who have working experience. Farmers' experiences are not accepted by some academic thinkers because the idea has not been tested by the academic procedures and farmers do not listen to the thinkers idea because they feel it won't work on my farm.

Some personal examples. A certain rocking hog feeder supporting sleeve was breaking apart. The farmer reported all sleeves (eight on four feeders) had cracked or completely broke off. The farmer had welded the cracks and reinforced with

strap irons, but this was fixing the effect and not correcting the cause of the problem. The farmer suggested adding a washer to solve the problem and the manufacturer said the two washers (one for each end) would cost \$15 per feeder and would cost too much. The farmer said the washers had been purchased at a machine shop for less than \$1.00 each. The manufacturer did not agree, but did replace the sleeves. The farmer greased the sleeves, put on the \$1.00 washer with a longer end pin and the feeders are rocking better than when they were new.

The second example. A certain baler that advertises the simplicity of their machine could not see the urgency of doing something better with their complicated twine wrap system. The baler twine wrap works fine when it's not too dry and the wind is just right, but when it's dry and the wind is blowing the system is not satisfactory at all. The manufacturer says to wait till the wind goes down and the humidity increases. The farmer needs dry conditions when baling and the manufacturer should make a baler that works in these conditions. Another illustration of the thinker not listening to the user of the product.

The third example. The standard ridge till planter is made to plant on ridges and does not work well on soft tilled soils. A sustainable farm needs a diverse rotation including oats, wheat, grasses and legumes. The grasses and legumes need to be moldboard plowed. A ridge till planter has been modified, by the user, to solve the problem but the manufacturer still makes only the standard planter.

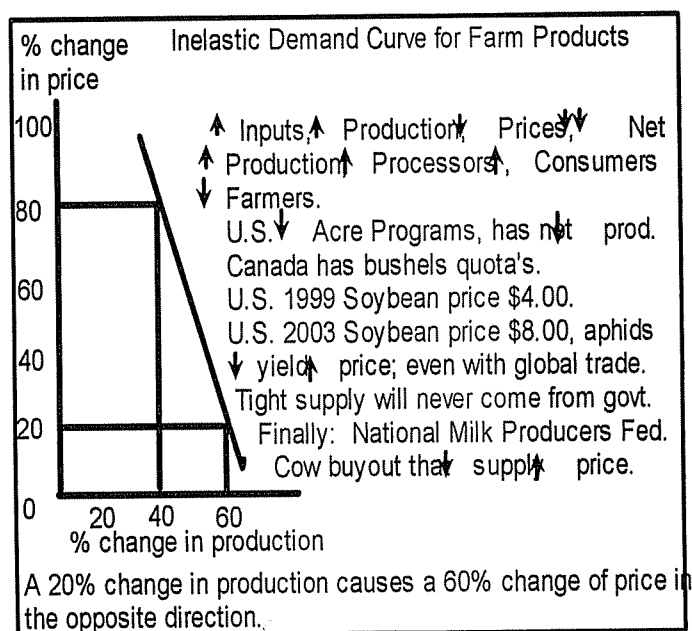
The fourth example. Tails can't be clipped on pigs sold on certain speciality markets. The Humane Society decided that clipping tails was inhumane, but they never have been around when pigs chew each other tails which is very inhumane. The right process would be to clip the very end of tail to stop the cannibalism. The thinkers need some on farm experience.

We would like to introduce you to an alternative life style. An event has to take place on the inside of mankind to change the **get** of competition to the **give** of a complementary life style. This is accomplished by finding out why we are here and what

purpose do we fulfill. This is a spiritual experience best described by an other chart (**Figure 1-2**).

God's house is always mentioned in a certain order. God the Father is always mentioned first, then God the Son and God the Holy Spirit. The way into God's house is through the Holy Spirit. Man's house is usually not in order. The body or soul is usually dominant and can not relate to the higher order. Enjoyment is in the soul while fulfillment is in the spirit realm. The soul and spirit are usually in conflict because fun and satisfaction are not the same. When the spirit is in control, we can have spirit to spirit contact which fills that void and we see who God is and who we are and where we fit. When this happens the competitive drive turns into a complementary focus. We find how to blend in with other people. We can feel really good when others win. The running up and down the competitive roller coaster is over. This is like walking on a new road. We don't have to choose between over aggressive capitalism and communism. There is a better alternative, **Figure 1-3**.

**We have additional information now with E mail and WWW on the internet. Lots of conflicting information leads to confusion. WWW does not give wisdom how to sort through the information. World Wide Web is a tool not the toolbox. The source or main frame is God's**



**Figure 1-4**



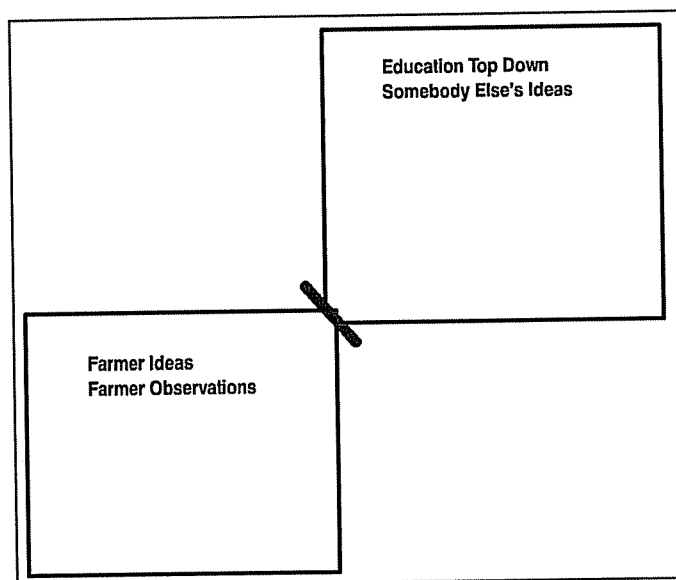
**House (Figure 1-2) which gives direction to us individually through the still small voice (SSV). Don't let WWW get in the way of SSV.**

At the beginning we shared the reason why we changed to balanced farming. It was a spiritual reason or a question of the heart. We really feel this is where the change must start. If that kind of reasoning doesn't turn you on to alternatives, we will try the intellectual route.

### Intellectual Reasoning

**Agriculture's problem is over production, which lowers the farm gate price below the production costs (Figure 1-4).** Why do we have over production? There are many publications that scare farmers into producing more. Farmers were told to produce more in the 1950s. The government played the same record in the 60s and the 70s. The idea of not having enough food may be a true revelation, but the problem lies in the correct timing. Having an adequate food supply has not been the problem, rather the real problem is food distribution. The United States has had an over supply of food products in the 50s, the 60s, the 70s, the 80s and it looks like plenty for the 90s. If the food shortage comes in the next century and we have continued to row-crop fence row to fence row, U.S. agriculture could be burnt out. The soil will be more depleted by erosion, the natural resources reduced, the underground and surface water supplies polluted and the irrigated soils turned to salt. The produce, produce song is sponsored by greed of big business which receives government backing and support. Some say we have to trade grain for oil. We say that two wrongs never make a right. Over consumption of oil and trading soil for oil will not balance the whole picture. Alternative agriculture is the only way we can survive and meet the need when it arises. **The first priority is stewardship of the land, not feeding the world.**

The answers to our agriculture problems are the exact opposite to what farmers have been told for the past 40 years. The propaganda of specializing and increasing farm size has not brought prosperity to the majority of the farmers. This kind of program has brought prosperity to the agriculture business



**Figure 1-5**

field. Agriculture business was properly named because it surely has given grass root agriculture the business. Advertising on TV and in the farm magazines will tell you where the farmers' money has gone. During the basketball tournaments, we have to place a pan under our TV to collect the spray from all the herbicide commercials. The ideas of borrowing more money and buying more inputs, pounding the soil harder to make it produce more bushels, is not working. The top yield myth, or going after the last nickel syndrome, or the efficiency fairytale, is really the cause of the past and present farm bankruptcies and foreclosures.

Since the produce, produce policies have not worked, why not try just the opposite. Use only the credit that is absolutely needed. Stop trying to beat your neighbor by one bushel per acre. Conservation will win in the long term over all out production. Cutting back on inputs is not really a crime. All these ideas may and will cut production, but the increase in price will be more than enough to offset the reduced production. This will result in more net profit.

The inelastic demand curve for food, **Figure 1-4**, says what prices consumers will pay for a certain amount of product. The reason farm products have an inelastic demand curve is because food is necessary for life. People have to have food regardless of price. On the other hand, people can consume only so much even if there is an abundance. With these



conditions, the 20% change in production will give the opposite 60% change in price. Every farm family should have this chart as a table placemat so they would be reminded of this concept three times a day.

We understand and have experience this malignant disease that has driven farmers into the problems we see today. Our farm would probably have been for sale in the 1980's if we hadn't made the change in our thinking in 1967. We are thankful for the inner voice that said to get our house in order and stay out of debt during the 1970's.

We do presentations and writings together because our directions have been very clear, "Whatever you do, do it together". The reason for sharing these events is to bring encouragement and hope to others, and these kind of directions are available to everyone.

**Today we have technology and information overload, which has brought on new problems that are trying to be solved without considering the human dimension.** We are going to have to learn to say no and learn how to sort the good technology from the bad technology. **Instead of talking about a higher standard of living, we need to learn a new term, appropriate living.** This calls for a change in life style.

We have said for years that balanced or sustainable farming practices was a viable alternative in agriculture. Today we are going to say it is the only common sense solution to the problems facing agriculture and mankind. When you consider the whole picture, government programs have not helped solve agriculture's problems. **When you look at the over supply and the low farm prices, the erosion of the soil, the pollution of the environment and the unemployment picture: balanced or sustainable farming practices is the only way we are to feed ourselves and try to help other people.** Balanced farming is the only way to have a stable and sustainable agriculture where farmers can be free again and not driven by outside forces. Balanced farming will not cost the tax payers any money. We must change now before it is too late. This kind of regeneration must start in

the heart of mankind. A healthy mind and heart are necessary first before we can have a healthy soil.

In a time of adversity, we need to realize that adversity is needed at certain times to produce a needed change. **Now** is the time to listen to a different drummer. **Now** is the time to change our priorities. **Now** in the time of abundance, we should be ready to give to the land rather take from the land. The giving principle is a higher calling and contrary to the normal thinking of our day. The answers will come by seeking first the Kingdom of God and its righteousness and then all these things will be added unto you.

We have learned that we need to be especially careful as we interpret the observations made on our farm. Usually in the learning process there are no quick answers or special recipes that will solve a complex problem. We have learned that more questions are raised as we go through the problem solving processes. We would like to share some of the steps that we have taken in our learning process.

All of us in the farm community have been exposed to commercial presentations of new and different farming methods. Those who present the programs often suggest a "recipe" for the whole farm. Unfortunately, the adoption of an entire program that has been designed by someone else

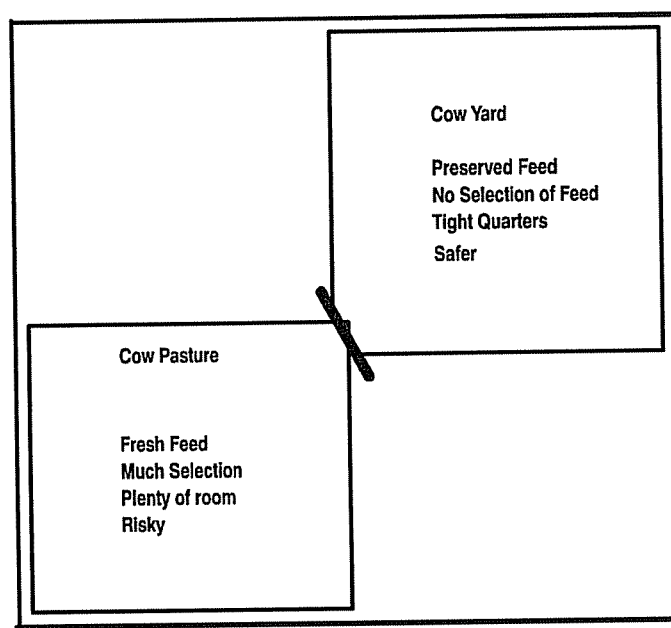
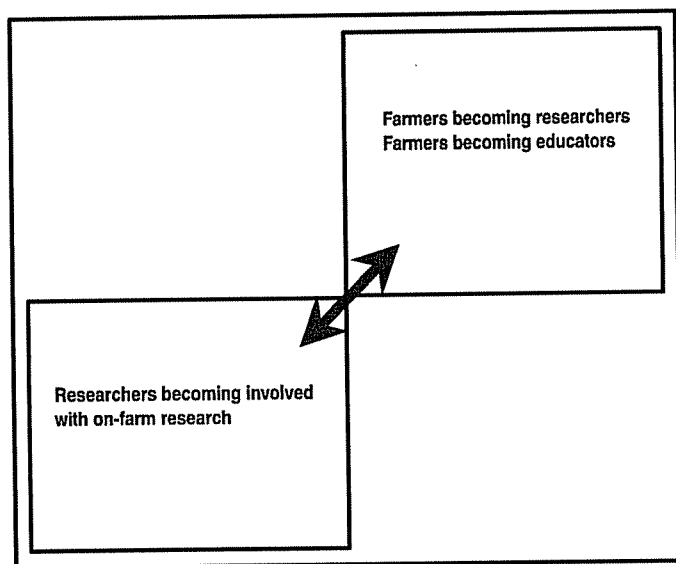


Figure 1-6



**Figure 1-7**

may not be successful on very many other farms. We need to beware of those who claim to have all the answers. **It is especially important to beware of those who have all the answers and have a product to sell.**

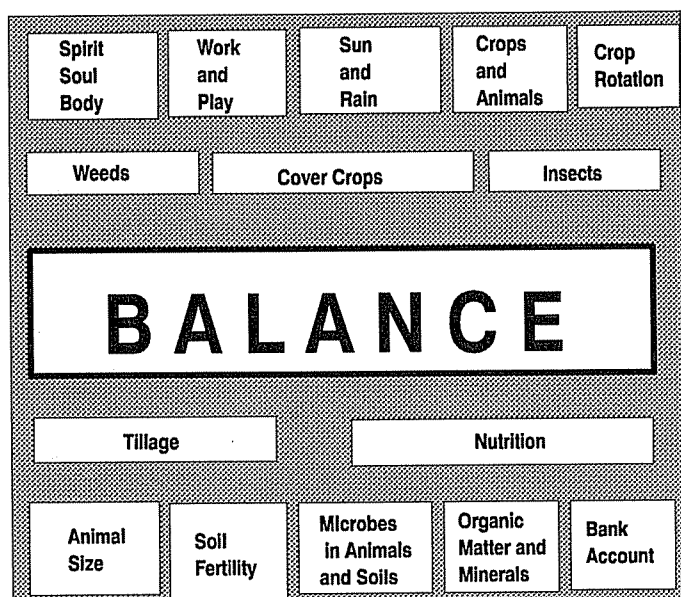
It is important for those who share their ideas to stress the principles behind the specific observations that have been made. The audience needs to be able to sort through many different ideas and think about how to adapt new ideas to their own farming situations. As we learn more, we will find that there are always better techniques and concepts that we might use. Don't be trapped by refusing to change your mind as new ideas come along. However don't be gullible for everything that is new. People who are sick and tired of the status quo are likely to find a non-establishment idea very exciting and become overwhelmed to where their judgment could become clouded. An example, some farmers perceived the establishment as the enemy and the cause of the farmer financial problems of the 1980s. After that experience, all establishment ideas are wrong and anything non-establishment has to be right. These farmers are very gullible during this period of distrust. On-Farm testing is of great importance to find the truth for the farmer, but must be done in a manner accepted by the establishment. The establishment needs to admit to some mistakes and farmers need to ask forgiveness for the name calling.

As an example, on one occasion a question came from a farmer following Dick's presentation on ridge-till without herbicides. He said, "The university told farmers 20 years ago to throw away the cultivator and use herbicides. Now you say throw away the herbicides and use the cultivator." Dick was stumped, he looked at his watch and said "Time's up, class dismissed." Conversation with this farmer later revealed his bitterness and he blamed the university for his farm debt. Still Dick had no answer. Early the next morning an answer came about pointing fingers when blaming others for our own problems. There is only one finger pointing away and three fingers pointing at the accuser. In the past farmers gave away the responsibility of agriculture research to the university. Farmers said, "You figure it out and then tell us farmers what to do". That statement represents one of the fingers pointing back to the farmer, where the blame rests. When agriculture was doing well, farmers were happy. When agriculture went sour, the university was to blame. Farmers need to take back some control in the decision making of what kind of research is needed. On-Farm testing managed by farmers is one way for this to happen. Ownership of research between farmers and the university can reduce the finger pointing.

**We can't leave the wars to just the generals, neither can we leave the farming to just the farmers or the agriculture research to just the researchers. We need a check and balance in all occupations.**

During the years from 1958 to 1967, we felt that any new idea that would challenge the established way of farming would not be accepted. There was no place for a ridge-till farming system. The doubters said, "It will not work. The corn won't germinate". But it did germinate and then they said, "It won't grow". But it did grow and then they said, "The bugs will eat the corn".

We were told, "There is no possible way that a reduced tillage system like ridge-till will work without herbicides". We were also told, "fall cover crops will not be a satisfactory practice in Iowa". And finally we were told, "It isn't possible to raise hogs without antibiotics in the feed or water".



**Figure 1-8**

When we started to modify our farming practices in 1967, we found ourselves on the outside of the establishment with no handle on the outside of the door (**Figure 1-5**). We were given the impression that our observations were not valid since they had not been scientifically and statistically examined.

Therefore, we needed to really put the ideas to the test and find out what works best. New ideas in agriculture should come from both the “top down” (the research establishment) and the “bottom up” (a practicing farmer).

By conducting research right on our own farm, we found that the door to the establishment has been reopened. Research conducted on the farm relies on the use of long, narrow strips as research plots. These strips are of a size that allows us to do all farm operations, including harvest, with our existing farm equipment. The strips are randomized and replicated six times to provide additional accuracy. This type of research is especially valuable to a farmer who wishes to test an idea that does not interest the academic community. Researchers are looking at the farmers’ strips, and the farmers are examining the old data from the heretofore accepted literature.

We realize that there are many ideas that need to be researched in small plots at the experimental

station. However, complex systems that require farm experienced management are better conducted in a real farm environment.

Farmers who conduct research on their own farms get a deep understanding of the interactions that are occurring on the farm. With this understanding, the farmer can wear three hats:

1. as a farmer
2. as a researcher
3. as an educator

When farmers conduct activities that put them in the role of a researcher or as an educator they do not replace the professional researcher or extension person. The exact opposite will happen, which means more opportunities and responsibilities will result for all involved. The professional researcher will have new opportunities to work on real farm sites, and extension persons will have more projects to coordinate. Dialogue increases and farmers gain confidence as they help to select projects, collect data and present the results.

We have found it easy to teach grain farmers to be good researchers. There are three “tools” that help make research easier for farmers.

- 1) Field-length strips. The field-length strips allow normal machine planting and harvesting.
- 2) Narrow strips of ridge-till. The permanent ridges make plot layout and different treatment application much simpler than with conventional tillage where there are no marked rows.
- 3) Weigh wagons and platform scales are used to weigh grain at the farm. This eliminates the hauling of each test plot to the elevator.

The on-farm plots have a distinct advantage over small plots at a research station. With small plots, it is harder to implement field scale mechanical technologies. For example, this is true for trials on weed control with a rotary hoe. With mechanical rotary hoeing, starting and stopping on very small plots does not work well.

The value of new ideas should not be judged by whether it originated from the thinking of a scientist (top down) or from a farmer (bottom up). Each



idea should stand on its own merits. For example, the new idea of a late spring nitrate nitrogen soil test was a top down technique that originated from work conducted by Dr. Fred Magdoff at the University of Vermont. Scientists in the Midwest thought a soil test method developed in Vermont would not work in the Midwest because our climate and soils are so different. However, Dr. Fred Blackmer, Iowa State University Agronomist, has conducted trials that demonstrate the value of the test as an indicator to determine if additional side dressed nitrogen fertilizer is needed during the growing season.

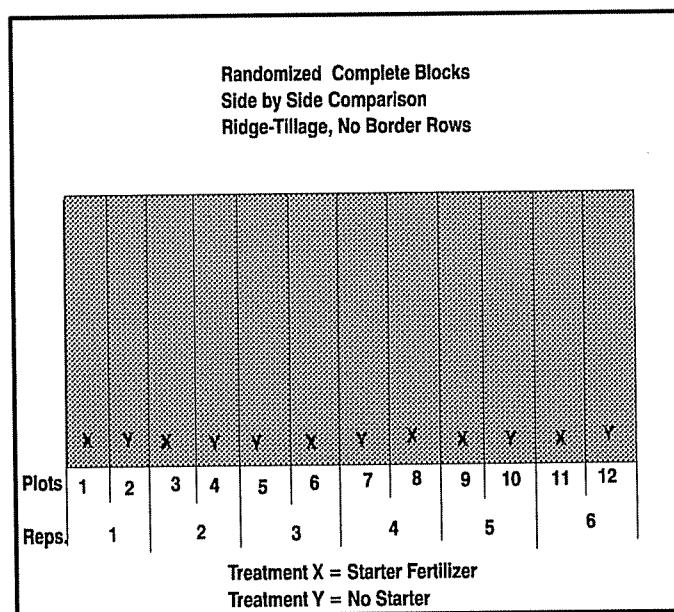
While farmers often think that scientists are especially critical of ideas that originate from the bottom up, new ideas that originate from scientists are often doubted by other scientists. For example, in spite of the successful use of the late spring nitrate test in Iowa, there is reluctance by scientists in Minnesota and Illinois who feel that the test is not appropriate for use in those states. It is important that the test be examined to determine its usefulness in the soils and climates at each location where it might be used. If it doesn't prove to be useful, additional research might be necessary to modify the test.

In 1967, we also felt trapped by ideas about our spiritual lives. Experiences seemed to be top down and second hand. We were looking to experience change first hand. Now in retrospect, we can draw a parallel between this spiritual experience and the academic institution.

A good example of this idea is the relationship between a cattle yard and a pasture as diagrammed in **Figure 1-6**. There isn't room for new ideas within the confinement of the yard. Ideas in the yard are originated by others. In the yard, the cows find processed feed and we find processed information that comes through the intellect of people.

Therefore we moved out into the pasture. The pasture contains fresh grass for the cows. In the pasture we find fresh ideas (firsthand) and are able to use our intuition in both academic and spiritual realms.

We found that the yard gate did not have a handle on the outside, or a shepherd at the gate, and



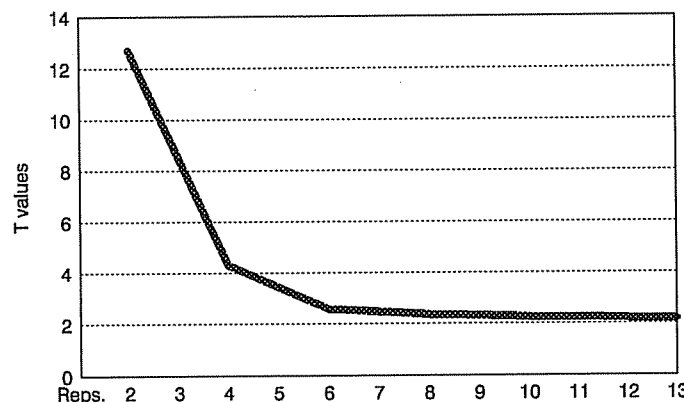
### Figure 1-9

as a result, we were not able to have free access back and forth between the two areas. We have found the pasture very lonely at times. There are dry spells and cold winters, figuratively speaking. The pasture experience has taught us “to flow with the hunches to avoid rolling with the punches”.

The beef cows actually showed us what should be done about intellect and intuition. One should not have to choose between the yard (second hand information) or the pasture (new insight). Instead we need to sort from many choices.

## Statistical Analysis

95% probability



### Figure 1-10

When the gate is open, the cows go back and forth between the pasture and the cattle yard. They eat grass in the pasture when it is young and eat hay in the yard when the grass is short, and perhaps some grass and some hay in the same day. They know how to eat around a bad spot in a large bale of hay. They don't reject the whole bale just because of a bad spot. Cows know how to sort the desirable from the undesirable. When cows are turned out to pasture in the early spring, they will sort out the best and know how to eat around the high nitrogen spots that are unpalatable. We need to learn about sorting from the cows. When the gate is open, the researchers and extension specialists and farmers are going both ways (Figure 1-7).

## Making Decisions

A tendency of human nature is to polarize. Individuals tend to gravitate towards like minded people to find acceptance.

Those of us who are trying to sort through a variety of agricultural ideas, and remain open minded, find that we don't fit into any of the standard groups. Certainly, the purest organic club doesn't want those of us who use inputs as an occasional short term solution. We also would not find a place in any of the top producer groups because we are challenging what is considered to be the norm.

## Experimental Error

Francis, C.A. and Rzewnicki, P.E. University of NE

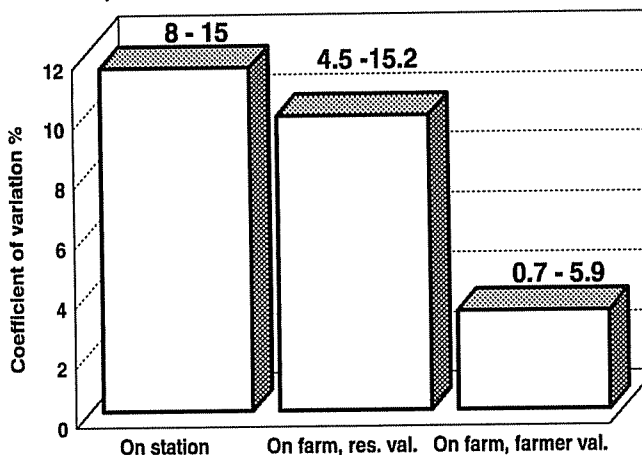


Figure 1-12

The extreme reactions are usually the case when changes are made. The overuser of chemicals who has become dissatisfied with the program may overcompensate and go to the other extreme of complete abstinence. This is very dangerous, and very few are able to make this kind of transition work over a long period of time.

The cow has the same problems in the spring when turned out on fresh, lush pasture. She will overeat and get a bellyache. She learns very quickly that it's best to eat some hay from the

## Experimental Costs

Francis, C.A. and Rzewnicki, P.E. University of NE

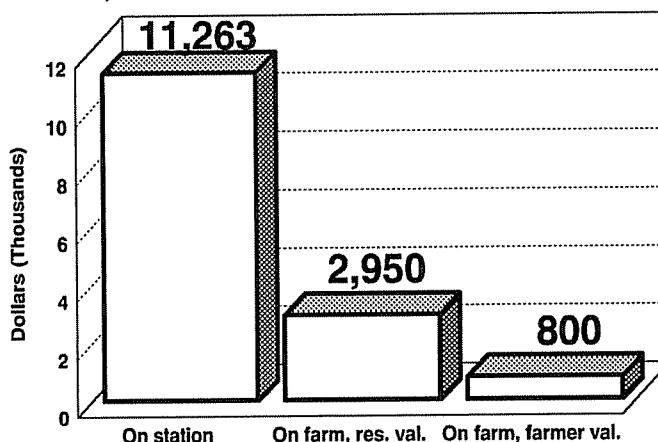


Figure 1-13

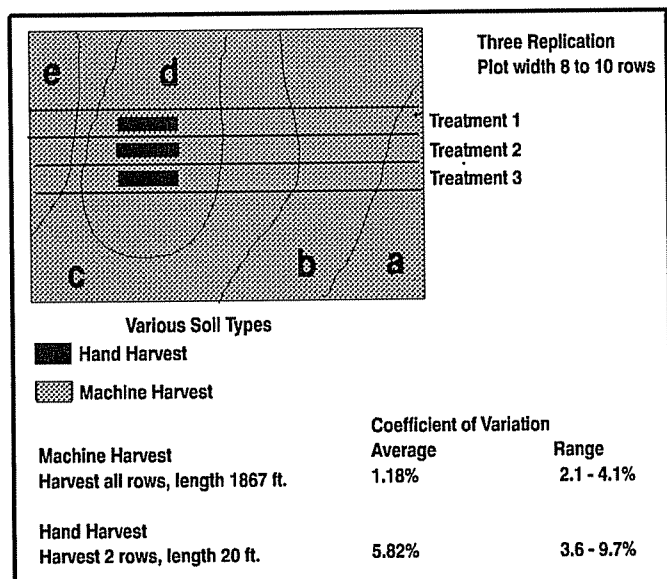


Figure 1-11

yard along with the fresh grass. May we learn that concept quickly.

We, too, need to select from a wide variety of choices. We don't need to put ourselves into a confined situation where we use organic practices and products being sold by people who have no interest in us as farmers. Neither do we need to follow conventional recipes that tell us to apply more fertilizers and pesticides just in case we need them.

When the cow is turned out in the pasture, she learns to pick her food carefully. May we learn from the cow! Unfortunately, people put themselves into boxes that polarize them against one another. The gate between options should never be closed. We need to have access back and forth between areas of choice. **You can get along without going along!**

In **Figure 1-8**, there is a listing of the areas in which balance is essential for well being. First, and of foremost importance, we feel that balance is needed between spirit, soul and body to discover who we are, why we are here and what it is we are to do. It is the imbalance and improper priorities of humans that cause the problems in the other boxes or areas. Balance is also important between work and play to maintain an equilibrium in our physical and emotional lives.

In recent years in the Midwest, there is clear evidence of the need for balance between the sun and rain. Crops need to be coordinated with animals to consume the crops and to furnish fertilizer to nourish these crops. Crop rotations are needed to control insect pests and to diminish the need for outside pest control. Weeds can be manageable in a balanced tillage system that relies on timing and mechanical controls. Balance is needed especially in cover crops, there is a tendency to move from a clean soil to a forest of cover. In the insect world, the good bugs help keep the bad bugs in check. There isn't just one kind of tillage that will meet all conditions and locations. A balanced diet for humans and animals is needed to maintain health and vitality. Animal size is of major importance in

a balanced livestock system in order to insure vigor, growth and disease resistance.

Soil fertility is the basis for balance in all the areas listed. Without it, the foundation is weak and will not support plant, animal, or human health. Included in soil fertility is a balance of organic matter, minerals and an equilibrium of microbes in animals and the soil itself. If all these items are in order, we feel problems will be few, and it is most likely there will be a balance in the bank account.

## DOCUMENTATION

### On-Farm Design

The greatest challenge in 1984 was to determine how to use long strips on our farm to collect data to help us make decisions on how to modify our farming practices. It was also important to satisfy the professional researchers.

Farmers in the past have placed check strips across their fields to determine yield differences between two treatments. The check strips were repeated several times. University people have told farmers that their data was not valid and the yield differences could not be subject to statistical analysis because the plots were not randomized.

The question was posed: How can farmers have randomized, replicated, side-by-side comparison strips that can be machine harvested, with the data subjected to statistical analysis?

Experience at the Thompson farm has shown that randomized complete block, replicated trials did not work when there is a large plot size. The variability is often too high. The following example points out how results might be misinterpreted. The initial statistical analysis led us to believe that the alternative treatment was especially effective. However, when statisticians looked at the results more closely, we found that there were fewer gains than we had originally anticipated.

In 1984, we initiated trials to determine yield impacts that resulted from a hairy vetch cover crop which had been interseeded under corn the previous season. The plots that had been cover cropped with



**Thompson On-Farm Research Results**  
 Ridge till system reduces weeds-pg 4-6, fig 4-10  
 Early weed expression helps control later weeds-pg 4-11  
 Tillage wakes up weed, crops need to be thick & tall-pg 4-23  
 Do not use rye before R.T. corn w/o herbicides-pg 3-2, 3-9  
 Use weeds & twin rows of rye for cover before SB-pg 3-8  
 Double throw ridge cultivation before soybean flower-pg 4-22  
 Kverneland plow weed management-in process  
 Ridge till/cover crop/manure/compost, nitrogen short-pg 2-4  
 Fall manure p/u excels spring compost-pg 2-8&9  
 Manure, no benefits from s.d.n. or starters-pg 2-3, 2-14  
 Response of Biologicals-pg 7-3&4, table 7-1  
 Crop diversity improves economics-pg 7-1  
 Crop diversity improves soil quality -pg 6-3, table 2-4  
 Crop/livestock system people friendly, Ch. 9  
 Livestock keep the farm in balance  
 Free choice hay causes calving problems-pg 8-1, fig 8-2  
 Potassium supplementation, cow & people-in process  
 Platform scales more useable than combine monitors  
 offres2

**Figure 1-14**

hairy vetch were compared to two other treatments: a no cover treatment and a rye cover treatment.

The experiment was conducted using twelve plots that measured 48 feet wide by 575 feet long. The entire trial covered eight acres. Corn was planted at the appropriate time in the spring. At harvest, it appeared that the vetch cover caused a significant yield increase of 13.27 bushels per acre as compared to the other treatments.

After careful observation of the field and corn yields, it was decided that there was a great deal of variation in soil type and drainage. Side-by-side comparisons were made using information that was collected from the entire length of the field. When these comparisons were made, we found that the plots which had a hairy vetch cover provided a yield advantage of only 3.9 bushels per acre as compared to no cover. The increase in yield was not significant at the 95% confidence level. Thus, what at first appeared to be a substantial yield benefit for the hairy vetch turned out to be insignificant under closer observation.

The lesson learned from this experience was that, we need to carefully select both the field design and the methods for data collection and comparisons. If we use the wrong methods, we may gain confidence in a new procedure that really won't give us the benefits that we need.

Procedures that work well in small garden plots with very little variability do not lend themselves to trials that are conducted by farmers who conduct research using farm machinery on plots that include the entire field. Fortunately, we are not limited only to results that are generated on small plots at university field stations. Nor do we need to limit ourselves to inaccurate on farm observations. We do not have to choose between randomized, replicated trials and side-by-side comparison. We can have both. We can have the best of both worlds by using randomized, replicated, side-by-side comparisons, which gives us the tools to document new ideas at the farm level.

Note in **Figure 1-9** that the narrow strips cover the entire length of the field. To reduce the effect of field variation, they are located side-by-side. Farmers can plant, cultivate and harvest these crops with regular farm equipment. This situation is more like the real world of farming.

The importance of replication is demonstrated in **Figure 1-10**. Note that the "t" values are multiplied by the standard deviation. With two pairs, the "t" factor is 12.7 multiplied by a standard deviation of three bushels per acre. In that situation, there would need to be a yield increase of 38 bushels per acre to be sure that the increase in yield is due to the treatment under observation. Note that it is most efficient to use six replications. There is not much of an increase in accuracy with additional replications.

It is also important to randomize or mix up the treatments in each block. For example, if a field has a slight slope, it is important that one treatment is not always uphill from the other treatment. In a wet year, the treatment on the uphill side would have an advantage, but in a dry year, the treatment on the uphill side would be at a disadvantage. Randomization helps to evenly distribute advantages among plots. Randomization helps us to determine if measured differences in yield are actually a result of the treatment under consideration rather than a result of field variation.

Research trials at the Thompson farm are randomized and replicated at least six times. Real

differences or significant differences at the 95% confidence level are shown in this book by using different letters after the number. If the same letter appears after each treatment, it means the yields, or the number of weeds in the different treatments are the same.

In research conducted by Shapiro, Kranz and Parkhurst at the University of Nebraska, hand harvested small plots had less statistical precision in comparison to machine harvested long narrow strips that were properly replicated (**Figure 1-11**). The low coefficients of variation for large plots can best be explained by the fact that each parallel side-by-side plot includes a representative of all soil variation in the field. Low coefficients of variation are good because they mean there is not a lot of variabilities between replications due to factors other than the treatments being examined.

Statistical requirements for randomization and replication have been met in our on-farm trials. The level of experimental error in all the trials has been well within the limits normally accepted by researchers in agronomy.

Statistically sound comparisons have been made from plots that ranged in length from 125 to 1,200 feet. Plot width is generally chosen to be a width that will accommodate one or two passes of standard farm machinery.

In Iowa, Practical Farmers of Iowa cooperators have worked with plots that have comparison strips measuring 1,200 feet in length. The coefficients of variation (CVs) have ranged from 0.7 to 5.9% in fields with four to eight replications.

The statistical reliability of the on-farm designs analyzed by Rzewnicki, et al., as well as the lower cost per trial, should encourage cooperation among researchers, extension workers and farmers (**Figure 1-12**).

These results have caused many people to reconsider the value of on-farm, large scale plots. As indicated in **Figure 1-13**, there are vast differences in the cost per trial depending on where the trial is conducted and who is responsible for overseeing the work. Our work here at the Thompson

**On-Farm Research (Farmer Hints)**  
**Be a good observer**  
**Keep track of everything that happens**  
**Record in 3 1/4 by 4 1/2 book**  
**Keep book in zipper pocket (Liberty bibs)**  
**Use good science, randomize & replicate**  
**Farmer friendly, field length narrow strip**  
**Cooperate with professional researchers**  
**Use case studies for farming systems**  
**Use moveable platform scales**  
**Problems can be opportunities**

ofrhints

**Figure 1-15**

farm indicates that farmer run trials can be both efficient and cost effective, although precise small scale testing will need to be continued at Research Stations.

## Thompson On-Farm Research Results

The major accomplishments from on-farm research during the last 15 years are listed in **Fig 1-14**. The first seven items listed deal with weed management strategies. Ridge tillage can reduce weed pressure by 90 per cent. The ridge is made in the previous years crop in June, which starts a flush of weeds but they are shaded out by the crop. There is no tillage between this time and the planter the next spring allowing the remaining weed seed to stay asleep. The weed seeds that are dropped from the previous year are allowed to express themselves. Twin rows of rye can be used along with the early weed growth to suppress later weeds for the soybean year. A spring rye crop ahead of corn takes too much moisture and ties up nitrogen. The weeds and rye are taken out by the planter sweep with very little soil disturbance beneath the sweep. The crop seed is planted in firm moist soil and loose soil is placed over the seed. The crop is rotary hoed before and after emergence and then cultivated twice. The double throwing of soil against the corn covers many weeds and we can use this same double throw on soybeans if done before soybean flowering. Keeping row crops in a ridge till system lowers weed pressure. Our rotation is C-SB-C-O-

H. Ridge tillage is used for the three years of row crops and then the soil is leveled out for the oats and hay crops. When we till after the hay crop the weed pressure goes up substantially.

We have disked, chiseled, or moldboard plowed the hay ground. We are now experimenting with the Kverneland plow, which is made in Norway, to lower the weed pressure.

Spring manure or compost with a green cover crop covered by the ridge till planter has created nitrogen and potassium shortage for the corn crop. Reduced tillage along with high carbon materials all slow down the nitrogen release process to the corn plant. The potassium is near the surface and away from the corn roots. The shortage of nitrogen and potassium was eliminated by fall manuring and plowing, therefore, starter fertilizers and side dress nitrogen are no longer used.

Forty two tests of biological products were conducted on our farm and twelve other Practical Farmers of Iowa (PFI) farms from 1986 to 1994. The results show no real differences in yields of corn or soybeans with the use of biologicals and an average loss of \$17.21 per acre per year.

The Thompson more diverse crop rotation (C-SB-C-O-H) along with many alternatives produced a labor & management return of \$110.51 per acre per year since 1988, while the Boone County C-SB rotation showed a loss of \$27.54, the difference being \$138.05 per acre. Livestock enterprises, government programs, premiums **are not** included in these numbers.

Adding oats and hay, livestock manures and biosolids, green manures and cover crops have increased the organic matter in the alternative system to over 6%. The conventional C-SB cash grain system in our neighborhood is about 3%.

Adding diversity in the crops along with livestock keeps the farm family very busy and in most cases no need for more land or an outside job. Livestock need the oats and hay, but when the livestock leave, the crops change to just corn and soybeans, and then purchased fertilizers and herbicides are needed, and then more land and more machinery and on and on and on. Diversity is people friendly.

Feeding free choice hay to our beef cows produced calves that were too large at birth and nearly 40% needed assistance. The ration was changed to half hay and half corn stalks and the calving assists dropped to 3%. The cows were exhibiting a hunger for something in their diet by consuming too much mineral. Since we have potassium uptake in corn plants we wondered if that was the cows craving. We now are feeding potassium in a separate feeder and this has reduced the consumption of the mineral mix.

We purchased a platform scale with weigh cells in the early 80's. This scale is an important tool for all the data collected in this book. We tested (along with other PFI cooperators) a combine unloading flow monitor for several years. The combine monitor was not accurate enough for research work. A combine monitor can weigh only shelled corn, oats, and soybeans. The platform scale can weigh these plus ear corn, bales of hay and bedding, the manure spreader, and livestock.

## EDUCATION

### Thompson Farm

#### FARMER PRESENTATION HINTS

- 1) Talk about FACTS, let somebody else do the editorials.
- 2) Use your own on-farm research facts. State whether it is one, two or three years data. These are the results from my farm and leave it for the audience to decide what fits their farm. Encourage other farmers to their own on-farm testing.
- 3) Be fair when presenting other people's data, present both sides when data is conflicting.
- 4) Non-tested opinions or ideas should be stated as such.
- 5) The presentation must be much more than the pulpit talking to the chairs. There must communication traveling both directions. Use one-half for presentation and one-half for questions and discussion. If the allotted time is one hour or more, divide into 15 minute sessions, presentation - discussion, presentation - discussion. An alternative is to allow questions anytime during the presentation. The presenter must stay within



the allotted time.

- 6) Use humorous stories to help relax yourself and the audience.
- 7) Data slides and overheads can become very boring, mix in slides of actual field and crop scenes, or the word dialogue can be on one screen and the actual picture on the second screen.
- 8) Show slides of both mistakes and successes. Be believable.
- 9) Double check your slides for proper order and position. Don't let anybody else handle your slide tray!
- 10) Use microphone when needed. A portable electronic microphone is excellent for getting closer to the audience during the discussion time. Let the audience ask their own question into the microphone, just like the Oprah Winfrey show. If this is not possible, repeat the question so that the entire audience can hear the question through the microphone.
- 11) Use a pointer, so that the audience can follow your dialogue. A laser pointer must be held steady and not moved all over the screen.
- 12) The farmer/wife delivery team concept helps divide the stress and two heads are better than one. How to divide the responsibilities depends on the individual capabilities.
- 13) Printed material about the subject matter should be made available AFTER the presentation. State at the beginning of your presentation that printed material will be available following the program. The printed material should be more than just words, use bar charts and data tables to help make the reading more exciting.
- 14) Programs should start on time, stay on schedule, end on time.
- 15) Don't claim to know everything. Learn to say "I don't know."

#### **HINTS FOR MAKING CHARTS W/O COMPUTER**

- 1) Use engineering paper to make line graphs and bar charts. Make charts horizontal so that the slides will be horizontal.
- 2) Trace on clean white paper.
- 3) Use 1/4 inch spaced lined paper under copy to hand print letters.

- 4) Place chart on the floor, you should be able to read from a standing position. This chart when made into a overhead or slide will be readable from the back of most rooms.
- 5) Keep charts simple, do not overload with too much information.
- 6) Black, red, orange, blue colors are best for charts.
- 7) Charts can be copied to make black and white or colored overheads.
- 8) Charts can be placed on black velvet and shot by 35 mm camera to make colored slides.
- 9) Charts can be downsized once and placed horizontal on a vertical printed page.
- 10) Do not make data sheets into overheads or slides, the letters are too small.

We started having our annual fall field in 1984 with 500 attending. This event has continued each year. Spring cover crop workshops were held in 1990-1992 and summer cultivation demonstrations were held in 1991 and 1992. Special farm tours have been given for small and large groups. Special tour arrangements need to be made by phone or letter. People from 42 different foreign countries have visited the farm. We have had the privilege to share throughout the U.S. and have made trips to Canada, France, Italy and Australia.

The number of off the farm presentations and

#### **PFI Results**

**Membership - 500**

**Cooperators - 30 plus**

**Farmer managed research, 400 + trials**

**Farmer/Researcher projects**

**Reduced herbicides with ridge tillage**

**Reduced nitrogen-late spring & stalk test**

**Quarterly newsletter**

**Lending library, 150 books & videos**

**Five district meetings for sharing**

**Directory of member networking**

**Guide to statewide field days**

**Summer camp for families & youth**

**Womens' annual winter meeting**

pfiresul

**PFI Results - 2**

Growing people as well as corn & beans  
 Case studies of farming systems  
 Community Supported Agriculture-CSA  
 Field to Family project  
 Added value, niche marketing programs  
 Alternative hog production & marketing  
 Intensive grazing demonstrations  
 Farmers helping farmers make better decisions

pfiresu2

farm tours are shown in **Table 1-1**. The highest number of presentations and tours occurred in 1989 and the highest attendance was in 1990.

## **Relationships & Cooperation Hints**

Sustainable agriculture has been called the "Quiet Revolution." The nature of the revolution is more like the dove rather than the hawk. The hawk characteristics are: criticize, condemn, agitate, divide, polarize. The dove characteristics are: gentleness, concern, challenge with opportunities to improve. Congenial personalities make relationships much easier. Peaceful restoration is better than a war. The philosophy of the movement is "we can

**PFI Organizational Hints**

Good Science, randomize & replicate  
 Farmer friendly research  
 Partner with the university  
 Farmer and researcher tie  
 Cooperation with many groups  
 Education source for alternatives  
 Avoid crowds, be different  
 Get along, but don't go along  
 Care/Share, Grow People  
 Field days & demonstrations  
 Stay out of politics  
 Stay away from products

pfiorgh2

do better" rather than certain methods are right and others are wrong. It is an educational process (sometimes slow) of showing a better way with supporting data rather than forceful regulations.

By way of illustration, when you have two bulls in a china shop, the china shop has to be rebuilt after the bulls are gone. If we just fight against something with no alternative solution, we probably become caustic and polarize people. As a result nothing is really accomplished.

A better way is to provide a positive solution to each problem. An example, a more diverse rotation produces 5 times more net income than the standard corn-soybean rotation which allows a smaller unit

**PFI Partnerships- over \$2,000,000**

ISU Extension  
 Leopold Center  
 SARE/USDA  
 ISU Agronomy  
 ISU Sociology  
 ISU Entomology  
 W.K. Kellogg Foundation  
 Northwest Area Foundation  
 Wallace Genetic Foundation  
 Education Foundation of America  
 IA Dept. Agriculture & Land Stewardship  
 Community Foods Projects/USDA

pfipart

**PFI Organizational Hints 2**

Case studies for farming systems  
 Research Reports with University  
 Newsletter, education and networking  
 Organize individual farmer data  
 Positive solution for negative situation

pfiorgh2

to prosper and invites more farmers into the rural community.

Another example, ridge-tillage with less or without herbicides provides \$54.00 more management return per acre than conventional tillage and broadcast herbicides in a corn-soybean rotation.

Instead of being against no-till, use the results that show \$57 and \$23 per acre more net income with ridge-tillage using less or no herbicides.

Instead of boycotting or carrying protest signs in front of corporate farms, no-till fields, chemical headquarters; show a better way thru demonstration and education. This will build consenses among people.

Another analogy would be that apple cider vinegar is very strong when consumed alone. A large amount of honey is hard to swallow. When you put the vinegar and honey together and dilute with hot or cold water, it becomes a palatable drink tasting like apple cider. We should learn from this illustration how to deal with people. A little sugar helps the medicine go down. Put a little honey on your vinegar remark when dealing with people. In other words, make your point without being caustic. Do not crititize a person in public. A private place, alone, makes a better atmosphere for constructive criticism. **Get along, but don't go along.**

Collaboration between the Thompson farm and institutions began in 1984 with Rodale Institute. **Table 1-2** tells the collaboration story since that time.

For an idea or concept to grow, ownership needs to be shared. When you try to claim 100% ownership or keep something, you will probably lose it. The act of giving away partial ownership of an idea is the real way to keep it.

## Practical Farmers of Iowa

Practical Farmers of Iowa (PFI), a grass roots farmer organization, was started in 1985 by a steering committee of five people interested in learning to use environmentally sound farming practices that are profitable. PFI was founded to guide research and to encourage profitable and sustainable farming practices. PFI is governed by a

Board of Directors elected by its members. Rodale Institute was an encouragement in the early days.

With the initial financial help of the Wallace Genetic Foundation, PFI became a statewide organization.

PFI projects were funded for five years by the Iowa Agricultural Energy Management Council of Iowa Department of Agriculture and Land Stewardship with petroleum overcharge money. Other funding has come from the Leopold Center for Sustainable Agriculture, the Educational Foundation of America, Wallace Genetic Foundation, Northwest Area Foundation and USDA's Sustainable Agriculture Research & Education Program (SARE) & (ACE). The Kellogg Foundation is now funding a four year project called Community Initiatives for Integrated Farming Systems.

The five person steering committee has turned into a 500 membership with 28 farmer cooperators doing on farm research. Summer field days are held at most of the cooperating farms, with the farmer, extension workers and researchers explaining experiments. Winter workshops are held in each of the five districts in Iowa, with farmers, extension workers and researchers sharing their results for that year. PFI has worked to improve the farmer-researcher dialogue. A number of agriculture researchers are finding PFI cooperator farms are unique field laboratories for weed control and plant nutrition studies. Researchers are assisting with different projects on cooperators' farms.

In 1988, Rick Exner was hired as the coordinator to facilitate these experiments and demonstrations. He holds the position of extension associate at Iowa State University. Gary Huber was hired as a PFI/ISU Education-Communities Coordinator in 1991. This may be the first grass roots sustainable farmer group to have a contractual agreement with a Land Grant Institution. This cooperative arrangement between PFI and Cooperative Extension is intended to help extension present sustainable agriculture alternatives to every farmer in the state. The target audience is farmers who are interested in alternative farming methods. Iowa is now seen in some circles as a model of what can be done to address issues of agriculture sustainability.



## ACTIVITY.XLS

	A	B	C	D	E	F
1	<b>Education Outreach</b>					
2						
3						
4	Year	Presentations	Attendance	Tours	Attendance	Total Attendance
5						
6	1986	37	2,000	18	770	2,770
7						
8	1987	39	3,651	26	803	4,454
9						
10	1988	39	2,845	27	937	3,782
11						
12	1989	42	4,118	29	942	5,060
13						
14	1990	34	5,270	17	1,091	6,361
15						
16	1991	30	2,354	27	695	3,049
17						
18	1992	19	1,179	26	664	1,843
19						
20	1993	10	1,169	13	351	1,520
21						
22	1994	14	1,450	17	339	1,789
23						
24	1995	8	601	12	315	916
25						
26	1996	12	1,118	20	310	1,428
27						
28	1997	8	1,181	13	296	1,477
29						
30	1998	8	307	18	358	665
31						
32	1999	7	446	7	196	642
33						
34	2000	7	698	11	185	883
35						
36	2001	3	144	11	205	349
37						
38	2002	6	660	11	91	751
39						
40	2003	3	325	13	98	423
41						
42	2004	8	2,295	15	153	2,448
43						
44	2005	0	0	10	201	201
45						
46	2006	1	40	1	4	44
47						
48	2007	2	150	3	22	172
49						

Table 1-1

## ACTIVITY.XLS

	A	B	C	D	E	F
1	<b>Education Outreach</b>					
2						
3						
4	<b>Year</b>	<b>Presentations</b>	<b>Attendance</b>	<b>Tours</b>	<b>Attendance</b>	<b>Total Attendance</b>
5						
50	2008	1	50	2	6	56
51						
52						
53						
54						
55						
56	<b>Totals</b>	<b>338</b>	<b>32,051</b>	<b>347</b>	<b>9,032</b>	<b>41,083</b>
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Table 1-1

## Collaboration between Thompson Farm and Institutions

### Participants

Henry A. Wallace Institute for  
Alternative Agriculture

Iowa State University Extension  
Dr. Jerry DeWitt

Rodale Institute  
Dr. Joe Ritchie, Michigan State U.  
Ruth Mott, Funding

Agriculture Research Service  
with Dr. John Doran

Iowa State University  
Dr. George Beran

Iowa State University  
Dr. Fred Blackmer

Agriculture Research Service  
National Soil Tilth Lab.  
Dr. Doug Karlen  
Dr. Tom Colvin

Iowa State University  
Dr. Rick Cruse  
SARE funding

Iowa State University  
Dr. Tom Jurik  
Leopold funding

Rodale Institute  
University of Wisconsin  
Dr. Jerry Doll  
SARE funding

Rodale Institute  
Dr. Jim Tjepkema, coordinator  
University of Minnesota  
Dr. Craig Schaffer  
SARE funding

National Soil Tilth Lab.  
Dr. Doug Buhler

National Soil Tilth Lab.  
Dr. Doug Buhler  
Dr. Doug Karlen  
Keith Kohler

Iowa State University  
Dr. Antonio Mallarino

Iowa State University  
Dr. Gary Osweiller, D.V.M.

### Kind of Project

General funding for research, demonstration and  
education on the Thompson farm.

"Walking the Journey...Sustainable Agriculture that Works" video  
and SA 2 bulletin.

Five foot soil samples, nitrogen rates of 60  
and 120 units, ridge-till with and w/o  
herbicides.

Nitrogen availability with conventional tillage compared to ridge-till  
hairy vetch cover crop.

Swine feeding w/o antibiotics.

Late spring soil nitrogen kit. Potassium  
uptake in corn.

Comparing conventional and alternative  
farming systems.

Narrow strip cropping

Weed measurements, ridge-till with  
and w/o herbicides.

Fall cover crops effects on weeds.

Using medic's as a cover crop.

Ridge-till planting in the dark.

Stratification of weed seeds and  
soil nutrients before and after moldboard plowing.

Phosphorus & Potassium fertilization  
for corn and soybeans.

Managing worms in beef cows with  
Diatomaceous earth.



Dr. Walter Goldstein  
Michael Fields Ag Institute

Planter row fertilizer, ridge-till w/o herb.,  
and manuring experiments.

Manure and corn root growth

Table 1-2

## foreign visitors.xls

Foreign Guests at the Thompson Farm			
1985	1992 Cont.	1994	2000
Canada	China	Bolivia	World Bank Delegation
	Argentina	Russia	China film crew
	Ecuador	Argentina	Australia
1986	Norway	Japan	Costa Rica
Hungary	Saudi Arabia	Czech Rep.	Bulgaria Minister of Ag
	Egypt	Slovakia	Kenya-Winrock
	Ghana		
1987	Israel		2001
Germany	Mexico		Venezuela
Canada	France	1995	South Africa
	South Africa	ISU foreign students	Romania
	Peru	Lithuania	2002
1988	Netherlands	H.S. foreign students	Namibia
China	Bangladesh	Australia	Kenya
Senegal	Taiwan	Foreign Ag Journalists	Amenia
Australia	Yugoslavia	ISU International F.S.	Georgia
Tanzania	Phillipines		Kyrgyzstan
Canada	Thailand		Kazakhstan
	Korea	1996	Uzbekistan
	Malaysia	Russia	
1989	Vietnam	Cape Verde	
Canada	Russia	Hungary	
	Tanzania	Russia	
	Hungary	World Bank people	
1990	Zimbabwe	Uruguay	
Russia	India	Moldavia	
	Japan		
	Canada		
1991	Italy		
Canada	Brazil	1997	
Russia		South Africa	
Zimbabwe		Slovakia	
Australia	1993	Japan	
Germany	Ethiopia	Japan	
Japan	India	Canada	
Zimbabwe	Venezuela		
Germany	Swaziland		
H.S. foreign students	South Africa	1998	
	Ghana	Japan	
1992	Sudan	International Environmentists	
Germany	Columbia	World Bank Delegation	
Argentina	Canada	Australia	
Australia	Foreign students	Hungary	
Italy	Japan	Canada	
Japan	Argentina	South Africa	
Denmark	Japan	Japan	
Brazil	Brazil	1999	
	Japan	Australia	
	Pakistan		

Table 1-3

foreign nations2.xls

	A	B	C	D
1	<b>Foreign Nations visiting the Thompson Farm</b>			
2	Armenia			
3	Argentina			
4	Australia			
5	Azerbaijan			
6	Bangladesh			
7	Bolivia			
8	Brazil			
9	Bulgaria			
10	Canada			
11	Cape Verde			
12	China			
13	Columbia			
14	Croatia			
15	Costa Rica			
16	Czech Rep.			
17	Denmark			
18	Ecuador			
19	Egypt			
20	Ethiopia			
21	France			
22	Georgia			
23	Germany			
24	Ghana			
25	Hungary			
26	India			
27	Indonesia			
28	Israel			
29	Italy			
30	Japan			
31	Kazakhstan			
32	Kenya			
33	Korea			
34	Kyrgyzstan			
35	Lithuania			
36	Malaysia			
37	Mexico			
38	Moldavia			
39	Namibia			
40	Netherlands			
41	Norway			
42	Pakistan			
43	Peru			
44	Phillipines			
45	Romania			
46	Russia			
47	Saudi Arabia			
48	Senegal			
49	Slovakia			
50	South Africa			
51	Sudan			
52	Swaziland			
53	Taiwan			

Table 1-4



foreign nations2.xls

	A	B	C	D
54	Tanzania			
55	Thailand			
56	Ukraine			
57	Uruguay			
58	Uzbekistan			
59	Venezuela			
60	Vietnam			
61	Yugoslavia			
62	Zimbabwe			

Table 1-4