

MINUTES OF THE HOUSE COMMITTEE ON AGRICULTURE AND LIVESTOCK

The meeting was called to order by Rep. Bill Fuller at
Chairperson

9:00 a.m. ~~XXXX~~^{XX} on February 17, 1983 in room 423-S of the Capitol.

All members were present except:

Committee staff present:

Bruce Hurd, Revisor of Statutes' Office
Raney Gilliland, Legislative Research Department
Kathleen Moss, Committee secretary

Conferees appearing before the committee:

Rep. Max Moomaw
Dr. Larry Robertson, Head of Branch Experiment Station at Colby
Bill Phillips, Head of Branch Experiment Station at Ft. Hays
Dr. Hyde Jacobs, Asst. Director of Extension Services, K-State
Darrell Ringer, American Agriculture Movement, Quinter

Chairman Bill Fuller opened the meeting welcoming the committee and visitors to the first of two days of public hearings on problems and solutions affecting the agricultural industry in Kansas. He said the agricultural industry is in extremely serious condition and the forum is to make a positive attempt to address these problems. Chairman Fuller expressed concern that such a small portion of the state budget is devoted to agriculture even though agriculture is the number one industry in the state. He informed the committee that there will be several groups appearing representing farm organizations, experiment stations, extension services and individuals in Kansas who will offer suggestions which may be diversified.

The first conferee recognized was Rep. Max Moomaw. He is a farmer and cattleman and represents the 117th District in Kansas. He distributed a prepared statement marked Attachment No. 1.

Dr. Larry Robertson, Head of the experiment station at Colby appeared with a statement he distributed supporting his remarks regarding crop research. See Attachment No. 2.

Bill Phillips appeared representing the experiment station at Ft. Hays. His prepared testimony is Attachment No. 3. His talk centered on two alternative crops in Kansas, the sunflower and pearl millet.

Dr. Hyde Jacobs was recognized. He distributed a statement on alternative crops. See Attachment No. 4.

Darrel Ringer appeared for the American Agriculture Movement. His statement is Attachment No. 5. He distributed a booklet, Parity, that is on file with the Legislative Research Department.

The meeting was adjourned at 10:05 a.m.

The next meeting is 9:00 a.m. on Friday, February 18, 1983 in Room 423-S.

GUEST REGISTER

DATE February 17, 1983

HOUSE OF REPRESENTATIVES
COMMITTEE ON AGRICULTURE AND LIVESTOCK

NAME	ORGANIZATION	ADDRESS
W. M. Phillips	Kans. Aggr. Exp. Sta.	Moys KS 67601
Larry Robertson	Kansas ag Experiment Station	Colby, Kansas
Hyde S. Jacobs	Kansas Extension Service	Manhattan, Kansas
Steve Dieringer	Kans wheat Comm	Winfield
John Dunbar	Kansas State University	Manhattan, Kan
Gerald Riky	K. A. W. G.	Deplin, Ks
Art Somers	KSDI	Topeka
Roland Wiebe	Ks Natural Resource Council	Topeka
Rita New	law student	Topeka
Chris Walker	NFD	Mayetta
John Knauer	Ks Bd of Ag	Topeka
GORDON CONGER	KANSAS SOYBEAN ASSOC	Topeka
Stan Compton	K. Soybean Comm.	Harrod
Raymond Frank	QAM	Empson
John S. Hayward	QAM	Empson
Dennis Shirley	Kansas Wheat Comm.	Noreaster
John Blythe	Ks Farm Bureau	Manhattan
Steven Graham	KS Wheat Commission	Hutchinson
Ivan Wyatt	Ks Farmers Union	McPherson
JOHN JACKA	KANSAS STATE BOARD OF AGRICULTURE	TOPEKA
B. Greenbaum	Comm. of Ks Farm. Org.	Topeka
Mike Beam	KLA	"
Arthur Stubb	DSKW Well Serv.	Clifton

MAX MOOMAW
REPRESENTATIVE 117TH DISTRICT
HODGEMAN LANE AND
PARTS OF FINNEY AND
NESS COUNTIES
RR 2 BOX 45
DIGHTON, KANSAS 67839



TOPEKA

HOUSE OF
REPRESENTATIVES

February 17, 1983

COMMITTEE ASSIGNMENTS
MEMBER EDUCATION
ELECTIONS

Thank you, Mr. Chairman and members of the committee. I'm Max Moomaw. I am a farmer and cattleman from Lane County. I'm also state representative from the 117th district. Thank you for scheduling this hearing.

We're here this morning to talk about alternative crops for Kansas. Briefly we will look at current production and marketing of alternative crops, then we will look at where we are and where we need to go in the areas of research and experimentation. Our goal is to put profit back in agriculture and to stimulate business in our local economy. Briefly, I want to talk about wheat. As most of you know, we have a wheat surplus at this time. The stock of wheat has increased 340 million bushels in the last year while the price has declined 27¢. This is as of mid-January, 1982, compared with mid-January, 1983. This year we have a new federal program, the payment in kind, or PIK program. To participate in this federal program for wheat you first set aside 20% of your wheat acreage, then you may set aside an additional 10%-30% for which you would receive payment in kind. One of the counties in my district, Finney County, has a 250 thousand acre wheat allotment base. The 20% first set aside to participate in the PIK program would amount to 50,000 acres in Finney county alone.

Atch. 1

Add in the additional acres that farmers may go in the PIK program and you can see that there will be a lot of acres in Kansas this year that could be planted to alternative crops. One purpose of the PIK program is to reduce the grain surplus. Whether or not this program is successful very likely depends on how much success farmers have in raising alternative crops. We know we'll have the PIK program for 2 years. Whether it will continue any beyond that is anyone's guess. My concern, is this: the PIK program, I believe, will reduce surpluses for the 2 years that it is in operation. If we then go to a different type program, people may go back to planting whatever particular grain they are most familiar with. In Finney County, that grain would be wheat. Our concern is that farmers will go back to planting larger acreages of wheat and further into a surplus situation. This is a crucial time. If the farmers do not have good luck with the alternative crops, they will go back to a crop that they feel they can raise and back into a surplus situation. During the last campaign while I was traveling across my district, one of the questions asked was "What can the State do for the farmer?" Everyone is well aware that the economic situation, for the farmer and state, is desperate. I think there are two ways the state can help the farmer. First, help the farmers to understand more about these crops in the areas of seed selection, planting date, crop management, insect and weed control, learning where the markets are, and storing the grain. The important thing is to make the information available to the farmers and encourage them to study this information before they plant.

The second part is in the area of expanded work at our experiment stations on alternative crops. Some of the people here today are going to talk to you about what is being done in research on alternative crops. I would suggest to you that there are reasons why we should expand our research. First, there is a certain amount of inconsistency in the federal government paying farmers money for the first 20% of the wheat set aside program, and setting up a payment in kind program for an additional 30%, in an effort to avoid surpluses; and at the same time a substantial portion of the budget for our experiment stations is spent to improve the quality and production of wheat. I'm not suggesting that we eliminate wheat research. I am suggesting that over a period of time, a shift could be made to do more work in the area of alternative crops.

Alternative crops are a way to diversify farming operations so that farmers are not dependent on only one grain for their income. I'm talking specifically about wheat, there are, of course, other crops that are included in the PIK program. Keeping surpluses down leads to higher prices for grain, which means a stronger economy in our state. We've seen what a depressed economy will do, not only to the farmers, but to the amount of money that the state is taking in. We know what that does to us economically.

We hope that this hearing will unite our efforts to bring additional opportunity to agriculture.

Presented by Dr. Larry Robertson

A Review of Alternative Crop Research
Colby Branch Experiment Station

Research on alternative crops has been conducted at the Colby Branch Experiment Station for many years. Yields of winter wheat and grain sorghum are compared with several of the more common or more tested alternative crops for both fallow and irrigated cropping practices in Table 1. These data indicate the high relative yields of wheat and sorghum. High yields and readily available markets are two principle reasons for the acreage dominance of these crops in relation to many other alternatives.

Table 2 gives a more complete list of crops tested, the type of tests conducted and the number of years studied. Many of these tests were conducted in the mid 60's and early 70's and were simply an evaluation of available cultivars. Breeding efforts to adapt cultivars to western Kansas conditions has been done only with barley. Because of changes in farming practices and the availability of better cultivars, much additional research is needed to establish optimum cultural practices except for sugar beets, alfalfa, oats, soybeans, field beans, barley and spring wheat.

Past emphasis has been on crop potential rather than the development of cultural practices for commercial production. No work at Colby has been done on market development potential for any of the alternative crops.

Atch. 2

Table 1. Comparative Crop Performance, Colby, Kansas.

Crop	Following Summer Fallow				Under Irrigation			
	Years compared	Crop Yield lbs/A	W. Wheat yield for period lbs/A	Grain Sorghum yield for period lbs/A	Years Compared	Crop Yield lbs/A	Wheat Yield for period lbs/A	Grain Sorghum Yield for period lbs/A
<u>Fall Planted</u>								
Winter Wheat	14	2641	----	4400	10	3342	----	7123
Winter Barley	14	2501	2641	4400	9	3157	3353	7522
Winter Rye	4	1833	2613	3724	--	----	----	----
Winter Triticale	5	2131	2754	3898	2	3075	3480	6552
<u>Early Spring Planted</u>								
Spring Barley	13	1947	2780	4188	9	2048	3467	6844
Spring Oats	13	1775	2780	4188	10	2133	3342	7123
Spring Wheat	9	1662	2888	4175	6	2240	3510	7121
Spring Triticale	3	971	2970	3864	--	----	----	----
<u>Late Spring Planted</u>								
Grain Sorghum	14	4400	2641	----	10	7123	3342	----
Forage Sorghum	11	8215 ^{1/}	2652	3976	9	15,073 ^{1/}	3360	7274
Sunflowers	9	1354	2640	5260	3	2340	3180	8027
Millet-Proso/Foxtail	3	1495	2960	3864	--	----	----	----
Millet-Pearl	3	2445	2480	4499	2	15,575 ^{1/}	3630	8540
Pinto Beans	2	2002	1890	5908	2	2761	2700	7700
Soybeans	2	2052	1890	5908	9	2617	3353	7522
Sugarbeets	3	13.7(tons)	2600	5955	8	27.2(tons)	3383	6622

^{1/}Oven dry forage yield.

Table 2. Alternative Crop Research, 1963 - present.

Crop	Study/test	No. of study-years
Sunflower	Plant nutrition	3
	Variety performance	19
Sugar beets	Plant nutrition	28
	Irrigation	3
	Cultural practices	23
	Variety performance	11
Alfalfa	Plant nutrition	5
	Variety performance	15
	Cultural practices	2
Oats	Plant nutrition	4
	Variety performance	38
Soybeans	Plant nutrition	3
	Irrigation	4
	Variety performance	27
	Cultural practices	4
Field beans	Plant nutrition	13
	Irrigation	4
	Variety performance	17
	Cultural practices	1
Popcorn	Variety performance	5
Millet	Variety performance	7
	Cultural practices	1
Sudangrass	Plant nutrition	2
	Variety performance	9
	Cultural practices	5
Cool-season grasses	Observational nursery	2
Spring barley	Plant nutrition	18
	Cultural practices	5
	Variety performance	40
Winter barley	Variety performance	33
	Cultural practices	6
Spring wheat	Variety performance	18
Winter triticate	Variety performance	10
Spring triticate	Variety performance	8
Spring rye	Variety performance	2
Winter rye	Variety performance	13
Safflower	Variety performance	9
Castorbean	Variety performance	3
Crambe	Cultural & Varietal	8
Rapeseed	Variety Performance	1
	Forage	3
Guar	Variety Performance	2

Presented by
Bill Phillips

House Agriculture & Livestock

Minor Crop Research in Kansas

The Kansas Agricultural Experiment Station has, since its inception, actively pursued research with possible alternative crops. It was apparent early in the state's agricultural development that different crops and cropping sequences were needed in different parts of the state. To research these differing needs, the Agricultural Experiment Station established a strong central station and a system of branch stations.

In non-irrigated areas of the western part of the state, wheat and sorghum (milo) are now the major crops. Yet, some 50 years ago sorghum was almost an oddity on Kansas farms. Recognition of its potential, research by station scientists, and willingness by farmers to try something new were the essentials in its emergence as an important crop. Of course sorghum could not become a viable crop until uses and markets were developed. The Kansas station has long been recognized as the leader in animal nutrition research with grain sorghum.

A similar story could be told concerning soybeans in Kansas, although that crop reached considerable importance in other states prior to its acceptance in Kansas. Other crops have been observed and tested over the years. Most have proven unsatisfactory, for one reason or another, under Kansas conditions and have not been widely grown. Examples include sesame, sanfoin, guar, triticale, safflower, and others. Some have been researched extensively in other states and by the U. S. Department of Agriculture. Kansas scientists study these results in an effort to determine which might have a place in this state.

Atch. 3

In the late 1960's and early 1970's scientists and administrators of the Kansas Agricultural Experiment Station expanded the research effort on sunflower and pearl millet. More recently some work with rape has been undertaken. This research was funded largely by diverting support from other research. Little or no new money was available. Such diversions have some inherent dangers. Wheat, sorghum, corn, and soybeans will certainly continue to be important crops in Kansas. In the highly competitive agriculture of today, Kansas producers of these crops must not become less efficient than farmers in other states with strong research programs. We increase efficiency, usually in small increments, by ongoing research, dissemination of research findings, and finally the adoption of new varieties and practices by producers. Effective crop improvement research is long term and continuous. Interruptions in a breeding program, for example, may destroy the effectiveness of several prior years' work. We should therefore proceed cautiously when considering diversion of research effort away from our major crops.

When decisions are made to change or add to research programs several factors must be considered. It must be realized that a long term commitment is necessary. Few significant results can be expected from a new breeding program in less than 15 years. If this seems unduly long, consider that wheat breeders, working with an established crop, are making crosses today that may result in new wheat varieties. But even if things go well, 11 to 14 years will be required for selection, testing, and seed increase. Likewise, research to develop sound cultural practices must be conducted over a period of years.

Sunflower research in Kansas was expanded in 1971. This research has been productive, partly because of excellent cooperation between Kansas scientists and scientists in other states, but largely because of dedicated workers in this state. Some Kansas workers have been accused of being negative in their approach to sunflower production. Yet in 1978 an easily readable but comprehensive publication was available to Kansas farmers.^{1/} Certainly it did not discourage production. This leaflet is now being revised to include later findings.

Kansas has not developed or released any new sunflower varieties or hybrids. Prospects for the future are bright. While being in the center of wild sunflower country creates many insect and disease problems, our plant breeders have a large potential germplasm bank. The breeding program at the Fort Hays Branch Station now has more than 800 lines in various stages of development and selection.

We believe sunflowers are and will continue to be a viable alternative crop, particularly in Central and Western Kansas. Producers will find that the crop requires a fairly high level of management. For example, insect control measures must be applied each year and at proper intervals. Marketing has been and continues to be a problem. Sunflower prices fluctuate as do prices of other farm commodities. Generally speaking prices can be expected to vary upward and downward with price of other oil crops, e.g. soybeans.

^{1/} Sunflower Production in Kansas. L-509 Cooperative Extension Service, Kansas State University.

It is difficult to predict the effect of additional research effort. Many management studies have conducted but more could be undertaken. These could include weed control, fertilization, time and rate of planting, cropping sequence, reduced tillage, insect and disease control, etc. Such work should be done on both dry and irrigated land. Likewise additional breeding effort might result in higher yielding types. However, several commercial seed companies have active breeding programs that may partially fill the void.

A different situation exists with pearl millet than with sunflowers. This crop is an important food and feed crop in Africa and Asia but has never been grown for grain in the United States. (Pearl millet is not the same as proso or foxtail millets). Work with pearl millet started in 1971 at the Fort Hays Branch Station and has since been expanded to other locations. Scientists felt that because the crop grows well in hot dry tropic climates, it should be more drought and heat tolerant than sorghum.

The primary purpose of the research was to find or develop suitable types that could supplement sorghum as a feed grain and thus provide farmers with an additional crop choice. The African types are all tall growing, not suitable for combine harvesting. A major plant breeding accomplishment lead to development of combine-height lines. In the comparatively few years since beginning work, male sterile, pollinator, and restorer lines have been developed so that hybrids can be produced. Some have yield potential equal to good grain sorghum hybrids. Limited research indicates pearl millet can be used successfully in livestock rations.

Several problems remain to be solved. Pearl millet has small seed and while some progress has been made toward increasing seed size, the problem remains. Seedlings do not emerge well when soil crusts and some seed set problems have been experienced. The pearl millet research is now partially funded by the Agency for International Development.

We believe the decision to pursue research on sunflower and pearl millet was sound. This does not mean that other crops should not be studied, or that either of them will become major Kansas crops. As new knowledge becomes available other crops may receive major research inputs, but always limited financial and personnel resources must be allocated according to the best information available. We must guard against curtailing work on crops and livestock enterprises which are the backbone of Kansas agriculture.

ALTERNATIVE CROP AND CROPPING SYSTEM EXTENSION IN KANSAS

HYDE S. JACOBS

GOALS

Kansas State University, through the Kansas Agricultural Experiment Station and the Kansas Cooperative Extension Service, is deeply committed to a strong and viable agricultural industry. Extension goals include:

1. To develop efficient agricultural, forest, and rangeland production systems.
2. To enhance the marketing and distribution of high quality food and fiber for domestic and international consumption.
3. To strengthen the conservation and wise use of natural or renewable resources.

These goals are focused by the expressed needs of farmers and ranchers; elected county extension councils and officials; available resources; and priorities recommended by agents, specialists, and scientists. In Kansas production conditions vary significantly throughout the state. Consequently, a state-wide network of experiment stations and fields was established so crop and livestock production systems adaptable to wide changes in climate, soils, price, and production conditions could be developed, tested, and adopted.

EDUCATIONAL APPROACH

Research:

Research and demonstrable fact is a necessity of developing sound Extension programs. Research scientists and extension specialists are interested in all crops - both new and established crops - that improve yield, stabilize production, conserve resources, and improve profitability. Limited resources dictate that both research and educational efforts should be directed to cropping alternatives with a reasonable chance for success.

Atch. 4

Many factors determine the profitability of new or established crops.

These include:

- A. Crop Productivity i.e.: (1) adaptability, (2) seedling establishment, (3) yield, (4) fertility needs, (5) weed and pest problems, and (5) harvest problems
- B. Crop Price
- C. Market Location
- D. Equipment Needs

From its beginning the Experiment Station and Cooperative Extension Service has accepted responsibility to actively search for new crops, alternative cropping systems, and improved production practices cooperatively with farmers, private industry, and USDA. Those efforts include:

- 1. Adapting major crops - wheat, grain sorghum, corn, soybeans, and alfalfa - to alternative cropping systems, new production areas, and to improve yield, resist pests, and protect against erosion and sedimentation.

Each of our established crops - wheat, grain sorghum, corn, soybeans, and alfalfa - went through a trial period to establish a productivity record and a market demand and price. Plant breeding techniques and research on intensified management practices have a proved record of effectiveness in increasing or diversifying the production potential of a variety of crops.

- 2. Testing new or alternative crops. Production tests have been conducted for the following crops:

- Sunflowers
- Millett
- Field Beans
- Oats, Barley, Spring Wheats, Triticale
- Sugar Beets
- Potatoes
- Various Horticultural Crops, Snap Beans, Asparagus, etc.

Over the years few really new crops have been adopted and grown extensively by Kansas farmers. Soybeans and grain sorghum are notable exceptions. Plant breeding and crop production management research on a

state, regional, and national scale were significant factors in each case.

Kansas State University has instituted breeding and management trials with sunflowers, millett, and field beans in a continuing effort to provide our farmers with a competitive edge in crop production and management. Of necessity this must be a sustained effort for most breeding trials - from first cross to final release - are 15 years in duration.

3. Exploratory efforts. Limited trials have been conducted with crops like:

- Castor Beans
- Crambe
- Safflower
- Sesame

4. Alternative crop use.

The department of Agricultural Engineering is testing various esters of soybean oil for fuel. Engine performance has been promising but in economic terms, vegetable oil esters are still twice as costly as diesel fuel.

Extension:

Extension agents and specialists emphasize the importance of crop yield and adaptability; stand establishment; equipment needs; weed and pest control; and harvestability in assessing the profitability of a new crop or a improved cropping system. Results of promising crop production research trials are published in numerous ways including:

- Annual Branch Station and Experiment Field reports: Results of crop production trials (including alternative crops and cropping systems) are disseminated widely at field days and tours and upon request.
- Crop Performance Trials and Information Bulletins: Crop Performance Trials include: wheat, sorghum, corn, and soybeans. Information bulletins on sunflowers and speciality crops are appended.

- County extension meeting and winter schools. Such meetings are arranged by county agents and specialists with advice from county extension councils, farmers, and ranchers.

More than 230 county, multi-county, or state-wide educational meetings on crop production will be conducted in fiscal year 1983 for participating farmers and ranchers. Attendance will often range from 20 to 100 but will reach nearly 1,000 at some events. Increased efficiency, crop management, and farm profitability are major interests.

Upwards of 1,500 farmers are expected to attend the 1983 Extension series of reduced tillage conferences. Cropping systems discussed include:

- Flexible Cropping Systems
- Wheat - Sorghum - Sunflower - Fallow
- Wheat - Sorghum - Fallow
- Wheat - Fallow
- Dryland and Irrigated Crops

Sunflower Production In Kansas



The cultivated sunflower is a native of America and was taken to Spain from central America before the middle of the 16th century. It was grown in America by Indians for food. The major sunflower producing countries of the world are the Soviet Union, Argentina, Bulgaria, Romania, Turkey, and South Africa, all of whom produce considerably more than the United States.

Adaptation

Sunflowers grow quite well on a great variety of soils. Soils that are well adapted to good corn, sorghum, soybean or small grain production would be suited to sunflower production. Heavy, low lying soils that are poorly drained should be avoided.

Sunflowers are a long-season crop requiring adequate moisture supply during the growing season of July, August and September. The amount of water required to produce a pound of dry matter in the sunflower crop is about twice the amount required in the grain sorghum crop. The length of time from planting to bloom increases as one goes from south to north. On the average, sunflowers take two days longer per 70 miles northward to reach the ray flower stage. The young plants will withstand some frost and freezing until they reach the 4 to 6 leaf stage. The

fully developed seeds generally are not damaged by frost, but between these stages the plants are quite sensitive to frost.

Nutation

A noticeable characteristic of the sunflower heads is facing toward the sun throughout the day. This accounts for the name sunflower. The heads generally face to the east or northeast at the time of full bloom and remain in this position.

Sunflowers in the Rotation

Sunflowers yield best on summer fallow or soil with adequate subsoil moisture. Normally summer fallow land is used for cereal grain thus reducing the length of time the soil is barren. Planting sunflowers on land that has been previously in crops is generally used. A suggested practice would be to plant them on land that would be summer fallowed the next year. This aids in the decomposition of the sunflower stalk and helps in destroying the volunteer plants.

It has been said that sunflowers are hard on the soil and that crops following sunflowers do not perform well. Soils that have adequate moisture and fertility following a sunflower crop

will produce an average yield of another kind of crop. Sunflowers do volunteer, and fields following sunflower production should either be fallowed or planted to a crop that can be sprayed with herbicide such as 2,4-D or on which a triazine compound can be used.

Seedbed Preparation

The preparation of the seedbed is the same as for sorghum or corn. To insure even germination, the seedbed should be firm. A firm seedbed retains the moisture near the surface and permits shallow planting to give faster and even emergence. Sunflowers do not cover the soil surface rapidly; therefore, some attention should be given to leaving a somewhat rough soil surface to reduce soil drifting that may cause injury to the base of plants.

Planting Rate and Plant Spacing

Sunflowers are planted in rows with row crop planting equipment. The row width should be the same as for other row crops produced on the farm. Thirty inch width of row is commonly used. This spacing allows for cultivation and ease of harvest. Grain drills have been used but it is difficult to have plants that are uniformly spaced.

Special plates are used in the plate type planter. The type of plates is usually listed on the seed tag.

The distance between seeds should be used to determine the rate rather than pounds per acre. One should consider between 14,000 and 15,000 plants per acre except under irrigation. The population under irrigation should be between 22,000 and 25,000 plants per acre.

Seed spacing required for various populations figuring a 10 percent stand loss for each rate.

Plants per acre	40"	36"	30"	26"	22"	18"
	inches between seeds in the row					
12,000	11.7	13.0	15.6	18.0	21.3	26.1
14,000	10.1	11.2	13.4	15.5	18.3	22.4
16,000	8.8	9.8	11.8	13.5	16.0	19.6
17,000	8.3	9.2	11.1	12.7	15.0	18.4
18,000	7.8	8.7	10.5	12.0	14.2	17.4
19,000	7.4	8.3	9.9	11.4	13.4	16.4
20,000	7.0	7.8	9.4	10.8	12.8	15.7
21,000	6.7	7.5	9.0	10.3	12.2	14.9
22,000	6.4	7.1	8.6	9.8	11.6	14.2
23,000	6.1	6.8	8.2	9.4	11.1	13.6
24,000	5.8	6.5	7.8	9.0	10.6	13.0
25,000	5.6	6.3	7.5	8.6	10.2	12.5

Planting Dates and Planting Depth

Sunflowers in the seedling stage can withstand some frost. They may be planted as early as or earlier than corn. They may be planted as late as mid-July and still mature prior to frost. The mid-May to mid-June plantings may encounter greater damage from insects than the earlier or later planting.

Sunflowers require an adequate moisture supply for germination. Planting at a depth of from one to two inches is desired. They will emerge from a greater depth but the percent of plants emerging will decrease with deeper seed placement.

Do not plant deeper than necessary as this slows germination and causes irregular emergences. This variation in emergence may make insect control more difficult.

Weed Control

Weed control is very important in sunflower production. Sunflowers do not shade the ground early in the season thus allowing weeds to start and grow with the sunflower.

Sunflowers may be harrowed or hoed up to three times once they have reached the 4 to 6 leaf stage to control early weed infestations.

Sunflowers may be cultivated for weed control. The depth should be shallow so as not to prune the roots. Avoid cultivation closer to the plants than the leaf spread of the plant. Chemical weed control should be considered as the major means of controlling weeds with cultivation as a secondary means. There are several chemicals that may be used.

Treflan (trifluralin) at 1/2 to 1 pound per acre is applied before planting and incorporated 4 to 6

inches deep. The incorporation should be in two directions to obtain proper incorporation. Treflan gives control of most annual broadleaf and grassy weeds.

Tolban (profluralin) same as for Treflan.

Amiben (chloramben) at 2 to 3 pounds per acre is applied as a pre-emergence herbicide immediately after seeding. Moisture is required to move the chemical into the soil for adequate weed control.

Eptam (EPTC) is not cleared in Kansas for use in sunflower production.

Sunflowers and Triazine Herbicides

Sunflowers are susceptible to triazine residues and should not be seeded into soils which may have a triazine carryover. Sunflowers have been injured by as little as one fourth pound of triazine residue.

Sunflowers are more susceptible to triazine than oats, wheat, barley, or soybeans.

Fertilizer

Sunflowers yield best on fertile soil. A soil test is your best guide to fertilizer rates. Research data from other areas under dryland conditions suggest that fertilizer requirements for soils producing sunflowers are similar to the requirements of soils seeded to small grains.

If fertilizer is used at the time of planting it should be banded near the rows but not with the seed.

Harvesting

The use of a combine with sunflower pans mounted on the cutterbar is the only satisfactory means of harvesting. Combines with other types of attachments will harvest sunflowers but the loss of seed by shattering will soon pay for proper pans.

Sunflowers are safe to store when the moisture content is nine percent or less. The storability of sunflowers at 10% moisture is equal to wheat at 15% moisture.

If birds are damaging the crop or head rot is wide spread it is better to harvest at a higher moisture and dry the seed than to suffer the loss from shattering.

Sunflower seed is easily threshed. The cylinder spread should be reduced to about 300 RPM and the concaves opened wide. Excessive cylinder speed or close concave setting breaks up the heads so that the sieves and return become over loaded. High cylinder speed also causes serious dehulling.

Sunflower seed is easily blown over the chaffer and sieve. Excessive wind can cause seed to be blown over the tailings auger. Seed forced into the tailings auger returns through the cylinder and may be dehulled. Use only enough wind to keep the trash floating on the sieve. Adjust chaffer and sieve for minimum tailings return.

When the combine is adjusted correctly for threshing sunflowers, the threshed heads will come through only slightly broken and only blank seed remaining in the head. Dockage should be less than 5 percent with little or no hulled seeds. Under ideal harvest conditions and proper machine adjustment harvest losses can be reduced to less than 5 percent.

Production Costs

Costs of the basic field operations and tillage involved in growing and harvesting sunflowers do not differ greatly from those of other crops. Total direct cost of production per acre varies with usage of fertilizer, herbicides, insecticides, drying and other inputs. The cost of insecticides used in sunflower production is much higher than for other crops.

Check the Farm Management Guide sheets for estimated costs of production.

Hybrid Performance

The yield data is from the testing program conducted at the Fort Hays Branch Experiment Station.

Variety Tests Planted in May

Variety	1977	Seeds Yield Pounds/Acre	
		2-Yr Av.	3-Yr Av.
Hybrid 606	1390	1510	1240
Sun Hi 301A	1330	1420	1050
Sun Gro 372A	1300	1550	1210
Hybrid 903	1240	----	----
Sunbred 254	1240	----	----
Sun-Gro 380	1200	1280	1010
Cargill 204	1190	1430	1130
Big Top +	1170	----	----
Hybrid 8943	1080	----	----
Sunbred 203	1080	1290	----
Sun-Hi 304	980	1350	1040
Hybrid 8941	1220		
Hy Sun #1 DMR	1160		
Hybrid 893	1070		
Hybrid 8944	1060	1300	

Variety Tests Planted in July

Variety	1977	Seed Yield Pounds/Acre	
		2-Yr Av.	3-Yr Av.
Big Top +	1230	----	----
Hybrid 894	1200	1280	1340
Sunbred 223	1170	1190	----
Hybrid 8943	1160	----	----
Hybrid 606	1140	1290	1380
Hy Sun #1	1140	----	----
Sunbred 254	1070	----	----
Hybrid 903	1000	----	----
Hy Sun #1 DMR	990	----	----
Cargill 204	980	1120	1230
Hybrid 8944	980	----	----
Hybrid 8941	950	----	----
Hybrid 893	860	----	----
Sun-Hi 304	830	1000	1170
Sun-Gro 380	670	1010	1160
Sun-Gro 372A	570	690	950
Sun-Hi 301A	510	770	1080

Drying Sunflowers

The availability of grain drying equipment either owned or custom operated, is important to the sunflower grower. Harvesting at moisture content higher than the 9 percent moisture content required for storage normally results in higher yields. Less bird damage, head dropping and head shattering occur with high moisture harvesting.

Sunflower seeds dry easily. Bin batch and continuous flow dryers have been used successfully. The large kernels allow air to pass easily and because of its low bushel weight, relatively small quantities of moisture need to be removed per bushel.

Continuous-flow dryers and recirculating batch dryers should be operated at 160°F. Batch and bin dryers should be operated at 140 and 110°F respectively.

A severe fire hazard exists in dryers being used on sunflowers. Very fine hairs and fibers from the seed coat are rubbed loose during handling and commonly are found floating in the air around dryers. The hairs or fibers, when drawn through the dryer fan and open burner, ignite. Unless these small flaming particles or sparks burn themselves out before hitting sunflowers, a fire may result. The fire hazard is **increased** by higher drying temperatures, which result in drier sunflowers against the inside plenum wall. For this reason one should stay with lower drying temperatures.

The fire hazard is **decreased** when the fan can draw clean air, not containing the fine hair or

fibers. This may be accomplished with portable dryers by turning the fans toward the wind. On stationary dryers an intake duct may be built to above the top of the dryer to cut down the amount of material drawn in the dryer.

Guidelines for drying sunflowers are:

1. Keep good housekeeping practices. Clean around the dryer and in the plenum chamber.
2. Do not overdry.
3. Insure continuous flow for all sections of recirculating batch and continuous flow dryers.
4. **Do not** leave drying equipment unattended.

Sunflower Insects

Over 50 species of insects have been recorded from sunflowers in Kansas. Damage includes leaf feeding, stem feeding, root feeding, flower feeding, and seed feeding.

Several species of native sunflowers provide wild host plants in all parts of the state. The varied date of blooming provides a population to coincide with a varied date of planting of tame sunflowers.

There are no insecticides labeled for use on soil treatment for sunflower plantings. A major pest of experimental plantings has been carrot beetles and related june beetles. Roots are destroyed by great numbers of adult beetles burrowing at the base of the plants. The drouth stress effect on plants is compounded by skunks and badgers slicing roots as they feed on the beetles.

During the 1977 growing season sunflowers planted at any date were vulnerable to sunflower moths. Most states recommend the initial insecticide treatment for head moth be applied by 30% bloom. Where varied date of plantings in the same field were observed in 1977 the second planting heads were destroyed before petals were exposed.

Pollinators

Bees and other pollinating insects are important in the culture of sunflowers. Hybrid sunflowers are more dependent on insect pollination than open pollinated sunflowers. There is a need for these species to insure pollination; increased yields may also result from the activity of these species. Insect control programs must be conducted in such a manner that will be the least destructive to these beneficial insects.

A brief description of the major sunflower insects, their injury and control is included in the following table.

Sunflower Insects*	Description	Nature of Injury
Cutworms (several species)	Dirty gray or brown grub-like larva.	Generally occur early in the season and cut young plants off at or slightly above ground level.
Sunflower beetle	Adult: Slightly smaller but very similar in appearance to Colorado potato beetle. Larva: Yellowish, hump-backed.	Occur in late May and early June. Both adults and larvae chew holes in the leaves.
Sunflower weevil	Adult weevil is about 1/4 inch long, black, and has a curved "snout."	Adults begin to appear in mid summer. They feed on stalks just below heads, causing head drop.
Sunflower (head) moth	Adult: Brown to buff colored moth. Larvae: Alternate dark and light colored longitudinal lines.	Larvae begin to occur as blooms appear and tunnel through seeds and fleshy receptacle area.
Banded sunflower moth	Adult: Brown colored moth. Larva: Yellowish-tan in color.	Larvae generally appear about 1 week after sunflower head moths. They have a tendency to feed in the central portion of the head.
Sunflower maggots (several species)	Adult: Small flies with patterned or mottled wings. Larva: Typical fly maggots, dirty white and tapering from front to rear.	The most common sunflower maggot feeds in the stalk area, causing weakening and stalk breakage. Other species may feed in the receptacle, head or stalk.
Sunflower midge	Adult: Small, dark, gnat-like insect. Larva: Cream or yellowish color, 1/8 inch long, tapered at front and rear.	Larvae occur in mid July and early August. They feed in ray petal area and base of seeds causing shrinkage and distortion of heads.
Spotted cabbage looper	Dark moth with silvery spots on wing.	Green looper with black spots caused severe deformation in late summer of 1977.

Sunflower Diseases

Diseases of sunflowers in Kansas have not been carefully studied. We do know that several diseases are present but their potential seriousness is not known. Abundant stands of native sunflowers are reservoirs from which endemic diseases can spread into cultivated sunflower plantings so disease potential is present.

Foliar Diseases

Rust, caused by the fungus *Puccinia helan-thi*, causes distinct red to brown leaf spots about 1/16 inch in diameter. It usually develops late in the season at about flowering. The fungus overwinters in infected tissue. Spores are windborne. Most commercial varieties are resistant and this is an effective control.

Two mildews attack sunflowers. Downy mildew caused by *Plasmopara halstedii* is most prevalent in cool, cloudy, wet weather and will probably not be a problem in Kansas. Powdery mildew caused by *Erysiphe cichoracearum* is a common disease on native sunflowers. It causes white to gray areas on leaves which often cover the whole leaf. Severely infected leaves turn yellow and drop off usually progressing from the bottom of the stalk up. No practical controls are available.

Stalk and Root Rots

Charcoal rot, caused by the fungus *Macrophomina phaseolina*, is a serious disease of sunflowers under high temperature and drought.

This same fungus attacks corn, sorghum and soybeans as well as many other plants and so is widely distributed in our soils. Symptoms include premature ripening, poorly filled heads, discoloration of stalks and disintegration of the pith. Small black specks, called sclerotia, are imbedded in pith, bark and woody tissue giving them a gray "charcoal" appearance.

Little is known of the possible seriousness of charcoal rot on sunflowers in Kansas. But its seriousness on other crops, wide distribution, coupled with the usual midsummer drouth stress make it a potentially serious threat.

No controls have been developed for sunflowers. But on other crops avoiding drouth stress through irrigation, correct plant population and fertilization for good root development all are helpful and probably apply to sunflowers as well.

Phoma black stem causes large brown to black lesions on the stem. These spots typically begin at the leaf attachment and spread into elliptically shaped lesions several inches long vertically and sometimes encircling the stem. Affected stalks are weakened and break over easily. Heavy rain during or immediately following flowering increases black stem severity. No controls have been developed but crop rotation probably would reduce the diseases.

Head Rots

Head rot, caused by the fungus *Rhizopus*, will probably be serious in Kansas. The fungus invades heads that have been injured by insects, birds and hail. The rot usually affects a pishaped

segment of the head which turns yellow then dark brown and shreds as it weathers. Another fungus, *Sclerotinia*, causes a similar head rot but it is not prevalent in Kansas on other crops and likely will not be serious here on sunflowers.

No resistant varieties are available for either of these head rots. Controlling insects which injure heads should reduce head rot.

Material on diseases was adapted from Extension Bulletin 25 "Sunflowers—Production, Pests and Marketing" North Dakota State University.

Bird Control

Blackbirds and other birds eat a tremendous amount of seed on some maturing fields while other fields may not be bothered. The amount of bird damage often is related to the acreage of sunflowers in the area. Small, scattered fields receive greater damage than fields located near other fields. Feeding starts shortly after blooming and continues to maturity.

Planting sunflowers in locations that are natural breeding ground for blackbirds or where they may gather prior to fall migration should be avoided. Noise making devices may give some relief if started prior to feeding.

Field application of Avitrol, a fright producing repellent, is registered for use in field corn and sunflowers. The chemical is applied to a cracked corn bait and applied generally by airplane. Normally three or more applications are required. Its performance is not too reliable.

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Cooperative Extension Service

Some Specialty Crops in Kansas

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Many producers in Kansas have expressed an interest in specialty or alternative crops. There are several reasons why producers might be interested in specialty crops. These reasons include limited irrigation water, increased irrigation costs, lower prices for traditional crops, the need for a second crop in a double cropping program or as a rescue crop after a crop failure due to weather, diseases or insects. Another reason for interest might be the availability of a local market or need. For this situation a producer should have contracted the crop and will know the price to be received. Many times a producer will have grown the crop without knowing the market location and is left holding the crop. Whatever the reason for growing these specialty crops they are not to be taken lightly, especially if they can feasibly be grown and help the producer's cash flow. Until a producer has gained sufficient knowledge about a particular specialty crop it should be grown on small acreage. After the grower becomes confident growing the crop and the market has developed, expanded acreage may be desired.

This publication does not contain a complete list of the specialty crops that have received attention in Kansas nor does it imply that these crops will be able to compete economically with traditional crops.

Guar

Guar (*Cyamopsis tetragonoloba*) is a drought tolerant, summer annual legume. It was introduced into the United States in 1903 from India where it is grown for export as a vegetable for human consumption, as cattle feed and as a green manure crop.

The guar seed has a rather large endosperm unlike most other legumes which have little or no endosperm. The guar endosperm contains galactomannan gum which forms a viscous gel in cold water. Perhaps the best known use of guar gum is as a stiffener in soft ice cream, instant pudding and whipped cream substitutes. Such products use the most highly refined food grade guar gum, which accounts for only a small portion of total production. Larger volume uses of

guar gum are in cloth and paper sizing, oil well drilling needs and ore flotations.

The meal remaining after the extraction of gum contains about 35 percent protein. Of this about 95 percent is digestible, making it an excellent protein supplement for ruminants. It is equal or superior to cotton seed meal in amino acids. Enough gum remains in the meal to make it an excellent feed pelleting material.

Guar grows well under a wide range of soil conditions. It performs best on fertile, medium-textured and sandy loam soils with good structure and well-drained subsoils. It is drought resistant; when moisture is short, growth stops until moisture becomes available. This intermittent growth lengthens the growing season. It responds to irrigation since adequate soil moisture insures maximum production of forage and beans. Guar is best adapted to areas of 20 to 30 inches of annual rainfall. Excessive rain after maturity causes the seed to turn black and shrivel, which lowers the quality of the bean. Dry fall weather for harvesting is preferred. Seed production in areas of high rainfall and humidity is questionable; however, in such areas guar might be used as a green manure crop.

Guar must have higher temperatures than cotton for stand establishment. Soil temperatures at planting time should be above 70 degrees F. Guar, since it is a legume, must be inoculated with a special guar inoculant or the cowpea inoculant. Recommendations from Texas suggest using a seeding rate of not more than 5 seeds per linear foot of row. A pound of guar seed contains approximately 5000 seeds.

When guar is planted as a full-season crop, harvest is usually delayed until after frost. In dry seasons it may be possible to harvest early planted guar before frost. Guar usually does not shatter and will stand quite well in the field; but for best seed quality, it should be harvested as soon after maturity as possible. Harvest when the seed pods are brown, dry and when moisture content is not more than 14 percent. For more information see "Keys To Profitable Guar Production," B-1399, Texas Agricultural Extension Service, College Station, Texas 77840.

Flax

The flax plant (*Linum usitatissimum*), which belongs to the flax (*Linaceae*) family is the source of seed and fiber. These are two distinct types of flax. One grown primarily for fiber, is tall, has few branches and produces only limited amounts of seed. Flax grown primarily for seed is usually short, profusely branched and produces good seed yields. The fibers in this type are short and used primarily for paper production. The seed is used for production of linseed oil and linseed meal or cake.

Flax is an Old World crop that was probably first cultivated in southern Asia and the Mediterranean region. It is an annual herbaceous plant with indeterminate flowering. It has a distinct main stem that grows to a height of 12 to 30 inches.

Flax requires moderate to cool temperatures during the growing season and is grown where the annual precipitation ranges from 16 to 30 inches, but it is also grown under irrigation in dry climates. Adequate moisture and relatively cool temperatures, particularly during the period from blooming to maturity, seem to favor both high oil content and quality. Flax makes its best growth on well-drained, medium-heavy soils, such as silt loams, clay loams and silty clays. Since flax has a short root system it is dependent on moisture in the upper two feet of the soil profile.

Flax should be sown 3/4 to 1 1/2 inches deep in a firm seedbed with a grain drill at the rate of 40 to 60 pounds per acre. The seeding rate should be adjusted depending on seed size.

Early sowing of flax in the North Central region generally produces the most satisfactory stands and highest yields. Light frosts may injure flax in the seedling stage. Seedlings just emerging are most tender; but after the plants are 2 to 3 inches high and are hardened by exposure, they may endure temperatures as low as 25 degrees F. for a short time without serious injury.

The flax flower has five petals and a five-celled boll or capsule, which may contain up to 10 seeds when filled. Maturity in flax is judged by color of the bolls rather than straw color. Flax is ripe enough to combine when about 90 percent of the bolls have turned brown. The crop may be harvested with a swather or by direct combining. For more information see "Growing Seed Flax in the North Central States." North Central Region Extension Public. #167. University of Minnesota.

Rape

Winter rape (*Brassica napus*) is a cool season annual that can be planted in autumn and harvested during spring or early summer in regions where winters are not too severe. Summer turnip rape (*Brassica campestris*) is grown as a summer crop in the northern U.S. and Canada. It belongs to the mustard family (*Cruciferae*), resembling cabbage when young,

but growing to a height of 3 to 6 feet. The attractive yellow flowers produce pods containing 15 to 40 seeds. The dark seeds contain 40 to 45 percent oil. Rapeseed can be crushed with the same equipment used for soybeans. The oil must be low in erucic acid if it is to be used in edible oil products. Oil with high erucic acid levels is used for industrial purposes. Rape meal contains about 40 percent protein, but has limited use as a protein supplement for livestock because of glucosinolates in the meal. Glucosinolates are a group of sulfur compounds that cause thyroid problems and toxicity in swine and poultry.

Rape grows fairly well on most soil types, although it is best suited to clay or clay loam soils. It is less drought tolerant than cereal crops and does best when grown on summer fallow land even in the more favorable moisture areas of the Great Plains. Rape is generally planted in 7 to 14 inch row spacings at the rate of 4 to 8 pounds per acre. The seed should be planted about one inch deep in mid-August to October. The earlier planting is preferred to insure better stands and less winter kill.

Rapeseed is ripe when the stem and pods turn a straw color and they have turned a dark brown color. Most producers swath rape to reduce shattering losses. The crop should be swathed before it is fully mature; when 25 percent of the seeds are brown. Rapeseed can be stored safely at a moisture content of 10 1/2 percent.

Safflower

Safflower (*Carthamus tinctorius*) is an annual belonging to the Sunflower (*Compositae*) family. It is in the same tribe, *Cynareae*, as most thistles. The crop has been grown for centuries in India, the middle East and North Africa where it is the source of a dye (carthamin) and an edible oil. The oil is used for edible purposes, as well as in paints and varnishes. The meal made from safflower is a protein supplement for livestock. Meal from unhulled seed contains 18 to 24 percent protein, while meal from hulled seed contains 28 to 50 percent protein.

Safflower has a deep taproot and a strong central stem with many branches. The central stem and branches terminate in heads. The extent of branching varies with the environment and plant spacing. The flowers are mostly self-pollinated and may be red, orange, yellow, white or a combination of these colors. There are approximately 10,000 to 12,000 seeds per pound.

In the early stage of growth it is fairly tolerant of high humidity, but requires dry atmospheric conditions from bud formation through maturity. The low relative humidity improves seed set and oil content. Safflower requires a growing season of approximately 120 days to produce mature seeds. The flowering period usually lasts about three weeks and is ready to harvest 6 to 7 weeks after the last flowers appear. The plant does not lodge and the seed does not shatter easily. Highest yields are obtained on deep, well-

drained soils. Plants may be killed where water stands for several days.

Safflower may be planted with a drill, in cultivated rows or by broadcasting. The seed should be planted 1 to 2 inches deep at the rate of 4 to 6 plants per square foot, or 25 to 40 pounds per acre.

Safflower is ready for harvest when the bracts on the heads turn brown and the moisture content of the seed is about 8 percent. The crop may be harvested by direct combining or by swathing first and then combining.

Sesame

Sesame (*Sesamum indicum*), sometimes called benne, belongs to the *Pedaliaceae* family. It is grown for its seed which contains about 50 percent oil and 25 percent protein. The oil is used in shortening, margarine, cosmetics, pharmaceuticals and as salad or cooking oil. The seeds are used as a garnish on rolls and French bread.

Sesame is an erect, 3 to 5 feet tall annual plant of many types and varieties. It is drought resistant, but responds well to irrigation. It will not tolerate excessive moisture and may be killed by standing water. Sesame performs best on well-drained medium textured soils with a neutral pH. It should not be planted on shallow soils with impervious subsoils.

The sesame varieties may be classified as either shattering or non-shattering. The seed capsules of the shattering types open when they become dry, whereas capsules of the non-shattering types remain closed. There is a wide range of seed color, with the white and tan seeded varieties being preferred commercially.

Since sesame is of tropical origin it tends to perform best in areas where temperature remains high during the entire growing season. The seed will not germinate well when soil temperatures are below 75 degrees F. The crop will require 90 to 120 days from planting to maturity. Flowering will begin about six weeks after planting and continue until maturity. Sesame should not be planted until a month after the last killing frost. The harvest should be completed before any danger of a fall frost. A fall freeze not only kills the plants, but also causes a loss of seed germination and rancidity of the oil in high moisture seed. The crop needs a minimum of five frost free months. Sesame should be planted 1 to 2 inches deep in 18 to 30 inch row spacings at a rate of 6 to 10 seeds per foot of row.

Buckwheat

Buckwheat has been cultivated in China for at least a 1,000 years. It was grown by the Dutch colonists along the Hudson River before 1625. Buckwheat is used for human consumption in breakfast cereals, pancake mixes and breads. It is also grown as green manure, wildlife feed, weed control, livestock feed and for buckwheat honey. Buckwheat is not a cereal

nor is it really a grain, because it does not belong to the grass family. It belongs to the *Polygonaceae* or buckwheat family. There are several species known as buckwheat: Japanese, silver hull, tartary and common all belong to the genera *Fagopyrum*. Wild buckwheat is an annual weed that resembles buckwheat except for its smaller seed and viny stem.

The buckwheat plant is cross-pollinated by insects. Honey bees can aid in seed set and yield. It is a short-session annual plant, 2 to 5 feet in height, with a single stem and usually several branches, it makes its best growth in a cool moist climate. Buckwheat grows under a wide range of soil conditions and will produce a better crop on infertile soils than other small grains. It is well suited to light, well-drained soils such as sandy loams or silt loams and it grows satisfactorily on soils too acid for other grain crops. Fertilizers will usually improve yields when the crop is grown on low-fertility soils, but may cause lodging on fertile soils.

The optimum time of planting is three months prior to the first killing frost in the fall, but two months is often enough time to give satisfactory yields. The crop is very susceptible to frost in the spring and fall and is a very poor weed competitor when planted early. It is also sensitive to high temperatures and dry weather when the plants are in blossom.

Buckwheat is usually planted with a grain drill 1 to 3 inches deep. It may also be broadcast and the seed covered with soil by a spike-tooth harrow or some other instrument that will place soil over the seed. A satisfactory rate of planting is 700,000 seeds per acre or 16 seeds per square foot. This will be about 40 to 50 pounds per acre. Buckwheat plants compensate for thin stands by developing more branches and more seeds per raceme.

Buckwheat is harvested either by combining the standing crop or by windrowing first and then combining. Plants will have mature and immature seeds, flowers and green leaves about six weeks after planting and may remain in that condition for about 12 weeks. Mature seed is easily shattered and losses increase as harvest is delayed. The optimum time for harvesting is when the plant has a large number of developed seeds and 75 percent of them are brown or black.

For more information see "The Buckwheat Crop In Minnesota." Station Bulletin 539-1980. Agricultural Experiment Station University of Minnesota.

Ginseng

Ginseng (*Panax quinquefolium*), also called American ginseng, sang, red berry and five-fingers, is a fleshy rooted herb native to cool and shady hardwood forests. Wild ginseng has been harvested for many years and is cultivated commercially for its root. The market price of the cured root is based on color, maturity, size and form.

Ginseng is valued by some orientals who believe

the dried roots have stimulant properties. It has been regarded as a medicine that acts as an aphrodisiac, increases mental and physical efficiency, stimulates protein synthesis and lowers blood sugar and cholesterol levels.

Ginseng grows about one foot tall. The leaves usually consist of five ovate leaflets. It blooms in mid summer and the flowers are greenish yellow, which are in clusters. The fruit is a bright crimson berry, containing 1 to 3 wrinkled seeds the size of small peas. The mature root is spindle shaped, 2 to 4 inches long and up to one inch thick. Roots reach marketable size when 5 to 7 years old. They are dug carefully, washed and dried. Only whole roots are acceptable in the trade.

Ginseng is grown from seeds, seedlings, or roots. The seeds should be placed eight inches apart and covered with forest soil, or well-rotted hickory or basswood sawdust one inch deep. Ginseng requires 5 to 7 years to mature from seed. When grown from seedlings a crop can be harvested 2 to 3 years sooner than if grown from seeds. However, seedlings are more expensive than seeds. The seedlings should be placed about eight inches apart. The roots may be set anytime from October to April, but fall planting is usually preferred. Plant roots two inches deep about eight inches apart.

Ginseng may be grown directly in woodlots or in lath sheds. Plants thrive best in loamy soil, such as found in oak and sugar maple forests. Very sandy soil tends to produce hard, flinty roots of inferior quality. Ginseng needs about 75 percent shade during the summer and free circulation of air.

Mungbeans

Mungbeans (*Phaseolus aureus*) are produced in the United States primarily for sprouting by commercial sprouters, canning companies, and oriental restaurants. It may also be used as hay or a green manure crop. It is an annual legume that has a short growing season. The plants require 60 to 90 days from planting to harvest maturity. Mungbeans have been used in double cropping systems following small grains.

The crop does well on sandy soils with a pH range from 5.8 to 6.8. Below this range reduced yields may be expected.

Mungbeans are usually planted in 21 to 28 inch row spacings or even closer in mid-June to mid-July. A

grain drill is a satisfactory means of planting. A seeding rate of 4 to 6 plants per linear foot of row or 10 to 15 pounds of seed per acre is sufficient. The seed may be placed 1 to 3 inches deep and seed should be inoculated with mungbean inoculant if the crop is to be planted on land which has never been planted to mungbeans.

The pods of mungbeans do not mature as uniformly as those of soybeans, and it may be difficult to judge the time of harvest. The group should be harvested when 1/2 to 2/3 of the pods are mature even though some shattering losses may occur. Earlier harvesting will reduce shattering, but will result in more green beans. The crop can be harvested by either combining the standing crop or by windrowing first and then combining.

Kochia

Kochia (*Kochia scoparia*) is an annual, drought resistant weed belonging to the lambsquarter (*Chenopodiaceae*) family. It has a taproot, reproduces from seeds and has an erect stem with many branches. The plant produces a considerable amount of vegetation early in its growth, but turns into a stemmy, fibrous plant with a large amount of seed at maturity. It was introduced as an ornamental. Kochia is also known as fireweed, Mexican fireweed, summer cyprus, fireball, burning bush and can be found on cultivated land, in fence rows, waste areas and along roadsides.

Research has indicated kochia produced 10 to 15 percent less forage than grain sorghum and corn when produced under comparable conditions. If kochia is grazed, cut for hay, silage or green-chopped at pre-bloom to early bloom stage its nutritive values are similar to other commonly grown forages utilized at the same growth stage. With its extensive root system kochia may have some potential as a forage in areas where rainfall and irrigation water are limited. Kochia may cause toxic problems with livestock due to sodium and potassium oxalates present in the forage. Also, nitrate poisoning may occur if high rates of nitrogen fertilizer are used.

Kochia may be drilled, broadcast or planted in rows at the rate of 5 to 10 pounds per acre. It is not a legume, so it requires nitrogen. When harvested it should be clipped not lower than eight inches high otherwise regrowth may be retarded.



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7-82—5M

File Code: Crops & Soils—1

GOOD MORNING MR. CHAIRMAN AND MEMBERS OF THE HOUSE AGRICULTURE COMMITTEE

I AM DARRELL RINGER, 29 YEARS OLD. I AM STATE SPOKESMAN FOR A.A.M., PRESIDENT OF MIDWEST CO-OP, COUNTY PRESIDENT OF NFO, HAVE BEEN ASKED TO BE COUNTY PRESIDENT, FARMERS UNION, SERVED THREE YEARS ON THE CHURCH COMMITTEE, OF ST. MICHAELS CATHOLIC CHURCH. I TOOK OVER MY FIRST FARM AT 19, SELF-STARTED, FARM 740 ACRES IN GOVE COUNTY, RAISE REGISTERED HEREFORD CATTLE, WHEAT, MILO AND ALFALFA. I HAVE A WIFE AND THREE SMALL CHILDREN AND FINANCIALLY, I'M BROKE.

I HAVE NOT STATED MY POSITIONS TO BE BRAGGING NOR COMPLAINING, BUT TO ESTABLISH THESE GROUND RULES:

1. WHERE I AM COMING FROM
2. THAT I AM NOT AN OUTLAW
3. THAT WHILE PUBLICLY SOME PEOPLE MAY CRITICIZE MY RADICAL WAYS, IN THE PRIVACY OF THE BALLOT BOX THEY BELIEVE ME CAPABLE OF LEADERSHIP.

A FARMERS GREATEST ENEMY IS HIS PRIDE!

OUR GREAT STRENGTH LIES IN UNITY.

TESTIMONY BY F.U., F.B., AND WHEAT GROWERS AGAINST CORPORATE BANKING SHOWED WE CAN AGREE... THE UNSELFISH TESTIMONY OF INDEPENDENT AND FARSIGHTED BANKERS GAVE ME HOPE.

THE AAM WAS FORMED OUT OF DESPERATION IN 1977. A REACTION TO THE CRISIS FACING AGRICULTURE. LOOKING BACK, THOSE WERE GOOD TIMES.

WHEN ADJUSTED FOR INFLATION, 1982 WAS THE WORST YEAR FOR NET FARM INCOME IN THIS CENTURY. ADJ. TO 1967 DOLLARS '32 \$5,154 MILL; 1982 \$5,060 MILL. NEARLY \$100 MILL. SHORT OF 1932. 1932, BY THE WAY WAS THE WORST YEAR OF THE "GREAT DEPRESSION."

THERE MUST BE SOMETHING WRONG WITH THE SYSTEM!

LET'S LOOK AT KANSAS CASH FARM RECEIPTS, 1979 ACTUAL RECEIPTS \$5,360 MILL.
AT 100%; PARITY \$7,550 MILL. THE LOSS OF CASH RECEIPTS TO THE STATE OF KANSAS
ALONE WAS \$2,189 MILL. CONSIDERING MOST OF THAT WOULD HAVE BEEN TAXABLE INCOME,
WHAT WOULD THAT HAVE DONE FOR THE STATE'S FINANCIAL PROBLEMS!

1979 = 1981+1982 *There would be 16 YEARS BETTER than 1979*

FARMERS ARE UNDER TREMENDOUS PRESSURE. WE'VE BEEN CORNERED FINANCIALLY FOR
AT LEAST 7 YEARS, AND YET LOOK AT IMPORTS IN 1982, ACCORDING TO THE USDA, FOR
EVERY POUND OF BEEF WE EXPORTED WE SHIPPED 8 POUNDS BACK IN. SO WHAT? THE COWS
NEEDED TO PRODUCE THAT MUCH BEEF WOULD BE EQUIVALENT TO THE PRESENT COW HERD IN
KANSAS AND NEBRASKA AND WYOMING AND COLORADO AND NEW MEXICO. SO WHAT?

3 PACKING PLANTS THE SIZE OF I.B.P., GARDEN CITY.

6,200 EMPLOYEES-PACKING PLANT ALONE.

19,000 300 COW RANCHES.

1900 100 COW PUREBRED RANCHES JUST TO RAISE THE BULLS TO BREED OVER 5½ MILL.
COWS.

2 MILL. ACRES OF IOWA'S BEST CORN GROWND.

3 MILL. ACRES FOR WINTER FEED.

57 MILL. ACRES OF GRASS.

JOBS, TOWNS, BANKS, MACHINERY SALES, REVENUE, TAX DOLLARS, JOBS!

HAVE I MADE MY POINT?

BEFORE I CHANGE SUBJECTS LOOK AT DAIRY, IN THIS COUNTRY WE HEAR WASHINGTON
RAISING HELL ABOUT THE COST OF DAIRY SUBSIDIES, YET WE ARE IMPORTING MORE THAN
WE EXPORT.

THERE MUST BE SOMETHING WRONG WITH THE SYSTEM!

ABRAHAM LINCOLN, WHEN HE WAS FACED WITH BUILDING THE RAILROADS,
 "IF WE BUY THE RAILS FROM ENGLAND, WE WILL HAVE THE RAILS AND THEY WILL HAVE
 OUR MONEY, IF WE'LL BUILD THE RAILS OURSELVES WE'LL HAVE BOTH THE RAILS AND
 THE MONEY!"

ALL THROUGH THE GREAT DEPRESSION CARL WILKEN HAD BEEN TRYING TO CONVINC
 CONGRESS THAT THE KEY TO THE PROBLEM WAS IN AGRICULTURE PRICING. THEY WOULDN'T
 LISTEN TO HIM; THEY TRIED A SORT OF PAYMENT IN KIND, THEY PAID FARMERS TO SHOOT
 COWS AND KILL BABY PIGS, BY 1937, THEY HAD GOTTEN SUPPLIES SO LOW THAT IF FINALLY
 MET DEMAND AND THE PRICE GOT UP TO 90% OF PARITY BUT WILKEN'S THEORY SHOWED WHY
 PRICE ALONE WOULD NOT HELP WITHOUT PRODUCTION.

$$\text{PRODUCTION} \times \text{PRICE} = \text{INCOME}$$

$$70\% \times 90\% = 63\%$$

BY THE NEXT YEAR, PRICES HAD FALLEN BACK INTO A SLUMP AND HOPE FOR A
 RECOVERY DIMMED. THEN CAME THE WAR IN EUROPE AND THEN JAPAN. F.D.R. SUDDENLY
 REALIZED THAT WE WE'RE TOO BROKE TO FIGHT A WAR LET ALONE WIN ONE. HE FINALLY
 LISTENED TO CARL WILKEN WHO CLAIMED HE HAD A WAY TO SET THE COUNTRY BACK ON
 ITS FEET.

$$100\% \text{ PRODUCTION} \times 100\% \text{ PRICE} = 100\% \text{ INCOME}$$

THE STEAGALL AMENDMENT WENT INTO PLACE IN 1942. A TEN YEAR PROGRAM OR TO EXPIRE
 TWO FULL CALENDAR YEARS AFTER THE YEAR IN WHICH THE WAS WAR DECLARED OFFICIALLY
 ENDED.

THE WAR WAS WINDING DOWN; ALL THE GREAT THINKERS IN WASHINGTON WERE WARNING
 CONGRESS OF A DEPRESSION BY 1948. CARL WILKEN SAID "THERE CAN BE NO DEPRESSION
 BECUASE AGRICULTURE IS AT PARITY!"

HE WAS RIGHT. THE WAR ENDED, THERE WAS A NEED FOR TRACTORS, TRUCKS, TIRES,
 MACHINERY, CARS, AND HOUSES. (NOTE: A MAJORITY OF THE MODERN FARM HOUSES WERE
 BUILT AT THAT TIME!)

DECEMBER 31, 1948, TRUMAN DECLARED WW II OFFICIALLY OVER. HAD HE WAITED ONE MORE DAY, THE STEAGALL AMENDMENT WOULD HAVE LASTED TILL 1951. INSTEAD IT ENDED IN 1950, BECAME A POLITICAL FOOTBALL AND GOT BOOTED OUT OF BOUNDS.

WE OPERATED FOR 20 YEARS WITHOUT PARITY OFF THE EQUITY BUILT UP IN THE 40'S, BUT BY 1970 WE WERE READY TO GO INTO ANOTHER DEPRESSION. 1972 NIXON FLOATED THE DOLLAR. THROUGH DEBT INJECTION AND INFLATION EQUITY WE STRUGGLED THROUGH THE SEVENTIES. BUT THE DEBT BUBBLE IS BREAKING UP.

FEBRUARY 14, 1983, 4TH LARGEST BANK FAILURE IN U.S. HISTORY. THE ECONOMY IS SHOT --WE MUST BEGIN TO REBUILD. OH, WAIT A MINUTE! THEY ARE GOING TO TRY TO FLY THIS BALLOON ONE MORE TIME!

ALL I HEARD IN WASHINGTON WAS THAT WE HAD TO DO SOMETHING TO STOP THE UNREST IN THE COUNTRY.

THEY WILL KICK IN HYPER INFLATION TO BRING THIS ECONOMY OUT OF THIS DEPRESSION.

IF THEY ALLOW FARM PRICES TO RISE (AND WE SEEM TO SEE A SUDDEN BULLISHNESS IN THE MARKETS ACROSS THE BOARD,) WE COULD SEE A VERY SHORT AND TEMPORARY UPWARD SURGE IN THE ECONOMY.

BUT, THE FACT REMAINS THAT THE ECONOMY IS FLOODED WITH DEBT; INFLATION WILL FORCE INTEREST RATES UPWARD AND VERY QUICKLY DROWN THE UPTURN.

A RECOVERY BUILT ON PSYCHOLOGY COULD ONLY LAST A MATTER OF MONTHS AND THE DEPRESSION WILL BE DEEPER AND LONGER WHEN IT RETURNS.

THE OBJECTIVES OF ALL DEDICATED LEADERS SHOULD BE TO THOROUGHLY ANALYZE THE SITUATION, ANTICIPATE ALL PROBLEMS, HAVE ANSWERS FOR THOSE PROBLEMS, AND MOVE SWIFTLY TO SOLVE THESE PROBLEMS. HOWEVER, WHEN YOU ARE UP TO YOUR FANNY IN ALLIGATORS, IT'S HARD TO REMIND YOURSELF THAT YOUR INITIAL OBJECTIVE WAS TO DRAIN THE SWAMP!

OUR OBJECTIVE IS TO BRING LASTING PROSPERITY BACK TO AMERICA.

THE SITUATION IS A BASIC LACK OF KNOWLEDGE OF THE RAW MATERIAL ECONOMICS.

THE PROBLEM IS THAT MOST UNIVERSITIES ARE PREACHING A THEORY ON ECONOMICS THAT WON'T WORK.

THE ANSWERS TO THOSE PROBLEMS IS PARITY PRICING OF AGRICULTURAL PRODUCTS AT THE FARM GATE. SUCH AS THE NATIONAL ECONOMIC AND STABILITY ACT, SUCH AS HB 7111 INTRODUCED IN THE LAST CONGRESS CALLING FOR A 90% PARITY FLOOR PRICE ON DOMESTIC COMMODITIES, 110% PARITY FLOOR PRICE ON IMPORTS.

A BEGINNING COULD BE THE MULTI-STATE FLOOR PRICE EFFORT, H.B. 2415.

THE STATE OF KANSAS, KNOWN FOR ITS PIONEERING LEADERSHIP BY BOTH MEN AND WOMEN IN IDEAS AND ENDEAVORS, COULD AND OF RIGHT, OUGHT TO TAKE THE LEAD.

IN CLOSING, ABRAHAM LINCOLN SAID THIS IS A "GOVERNMENT OF THE PEOPLE, BY THE PEOPLE, AND FOR THE PEOPLE. IN SHORT, IT IS A GRASS ROOTS GOVERNMENT!

I WOULD NOT EXPECT A LEGISLATOR TO VOTE FOR A BOLD NEW DIRECTION THAT HE OR SHE DID NOT UNDERSTAND! THAT IS WHY, (EVEN THOUGH FOR POLITICAL CONSIDERATIONS OF THE P.I.K. PROGRAM, YOU MAY NOT WISH TO FOLLOW THROUGH THIS YEAR), THAT AAM FOR OURSELVES AND FOR FUTURE GENERATIONS, WOULD DEEPLY APPRECIATE A FEW HOURS OF HEARINGS ON THIS ISSUE. TIME IN WHICH THE SEVERAL ORGANIZATIONS SUPPORTING PARITY COULD BRING IN OUR BANKERS, ECONOMISTS, LEGAL AND TECHNICAL PEOPLE TO EXPLAIN AND EXPOUND OUR POSITION.

THE HUMAN NATURE IN ME MAKES ME WANT TO GO HOME FOR A COUPLE OF YEARS SO THAT THE IGNORANT AND UNFOUNDED KEYNESIAN THEORY ON ECONOMICS, CHEAP FOOD POLICY, AND ASSINIGN FARM POLICY, COULD ALL PROVE THEIR STUPIDITY. BUT THERE ARE 6000 PEOPLE IN DETROIT WHO ARE NO LONGER LIVING IN A HOUSE! THERE ARE 2000 STEELWORKERS IN PUEBLO WHO ARE IN A VERY BAD WAY. LET'S GET CLOSER TO HOME! HUTCHINSON-- MANY, MANY UNEMPLOYED. THOSE LABORERS WORKING HAVEN'T WORKED A FULL MONTH IN

RECENT MEMORY (CESSNA HYDRAULICS). WICHITA--20,000 UNEMPLOYED--IN ALL CASES
UNEMPLOYMENT BENEFITS ARE RUNNING OUT!

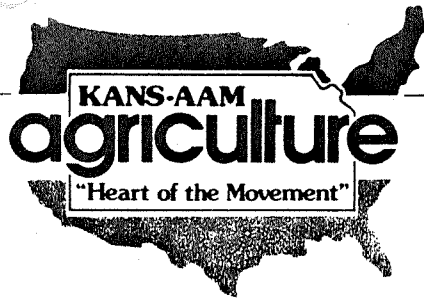
WE CAN'T WAIT!

BEING IN THE MINORITY DOESN'T MAKE YOU WRONG, JUST OUTNUMBERED!

BEING IN THE MAJORITY DOESN'T MAKE YOU RIGHT, JUST POWERFUL!

AS A CHRISTIAN, AN AN AMERICAN, AS A FARMER, I BEG YOUR DEEPEST DELIBERATION
IN THIS MATTER!

THANK YOU!



News Release of Feb. 14, 1983

by Darrell T. Ringer State Spokesman

"A long time ago I decided we needed to stop chasing ghosts, but recently Kansas Attorney General Bob Stephan went on a 'Witch' hunt. That's his right except that Bob Stephan and KBI director Thomas Kelly declared the American Agriculture Movement a 'Witch' by Association. They're trying to connect AAM with some 'Outfit' they call the 'Posse'. The sad part of it is that they're getting all of the County Sheriffs so riled up that some innocent people will get hurt if Law Enforcement over reacts."

"The AAM was formed out of desperation in the fall of 1977. Times were bad then but times are a lot worse now. When adjusted for inflation 1982 was the worst year for Net Farm Income in this Century!"

"If farm prices don't improve soon, I don't think we can hold the lid on much longer! Farmers are under tremendous pressure, we've been cornered financially for at least 7 years. For many farmers, low commodity prices and high interest rates have wiped them out financially."

"The desperation in 1977 is turning to frustration and anger in 1983. What held us together was our determination to bring Parity to Agriculture. It is that determination to save the family farm and to keep our own farms that may force farmers to decide between an unjust peace or a struggle for justice and survival!"

-30-

Sincerely
Darrell T. Ringer

STATE OFFICE
BOX 356
QUINTER, KANSAS 67752
913-754-3992



NEWS RELEASE FEB. 10, 1983

by DARRELL T. RINGER, STATE SPOKESMAN

TOTAL NET FARM INCOME

(\$ Millions)

<u>Date</u>	<u>Current \$</u>	<u>1967 \$</u>
1922	4,343	8,766
1932	2,032	5,154
1942	9,853	20,191
1952	11,961	18,819
1962	12,061	13,316
1972	18,665	11,896
1982	11,750	5,060

The 1967 dollars best represents realistic purchasing power as it takes inflation into consideration. 1932 was the worst year of the great * depression but after inflation 1982 was nearly \$100 million worse for Net Farm Income than 1932!

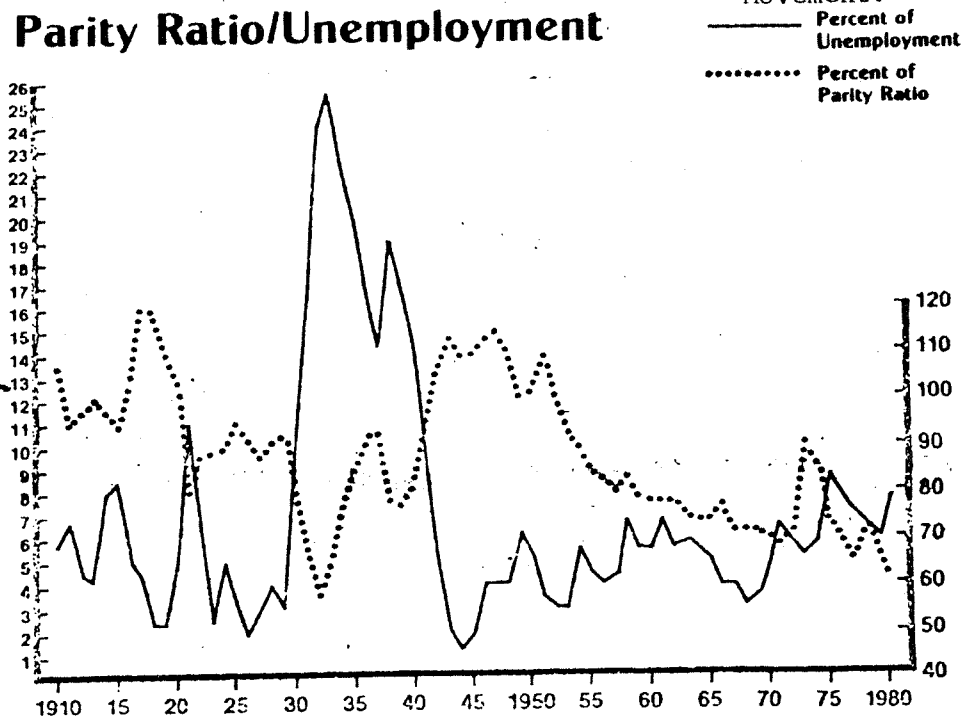
Recovery is just around the corner ?

- 30 -

*We have on file every year from 1920 through 1982

STATE OFFICE
BOX 356
QUINTER, KANSAS 67752
913-751-2323

Parity Ratio/Unemployment



Unemployment Sources:
 Historical Statistics of the US, Colonial Times to 1970
 Statistical Abstract of the US 1978
 March 1982 Economic Indicator

Parity Ratio Source:
 Crop Reporting Service—USDA

The importance of Agricultural income to the health of the national economy is clearly shown by the relationship of the parity ratio to unemployment rate. When the percentage of parity ratio increases and tops out, within the following year the percentage of unemployment decreases and bottoms out. When the parity ratio bottoms out, within the following year unemployment tops out.

Since 1980, farm parity has continued to decline and unemployment has risen to around 11%. Recently it was announced that the farm parity ratio fell below the all-time record low set in 1932. Within one year of that 1932 occurrence, unemployment had reached 26%.

Farm failures are reaching epic proportions. AAM has declared a moratorium on farm debt. We will help any farmer who asks for our help in negotiating extensions of his loan, if negotiation fails, we will help him stop the sale.

These sales are being brought on by three too many embargos, a misguided government who believes low farm prices to be in the best interest of the American people, and extortionary interest rates.

We believe that the answer to America's economic crisis lies in putting a minimum price floor structure under agriculture, NOT A SUBSIDY, but a minimum price much like a minimum wage law. H.R. 7111 was introduced in the last Congress, and we will seek passage in this Congress.

Other actions we will use to bring a solution are grain sales direct from the farm to foreign countries, protest Federal Reserve Bank policies, and hopefully we can help alleviate the suffering of destitute Americans such as the 6,000 homeless in Detroit, Michigan, left homeless and jobless because low farm price wouldn't allow agriculture to buy the fruits of their labor.

At this time, we must build ties between other groups of concerned Americans and farm groups to bring change and hope for a future back to the American people.

K A N S A S

CONGRESSIONAL DISTRICT TOTAL

1979 CASH RECEIPTS FROM FARM MARKETINGS

(Field Crops, Meat Animals, Chickens, Eggs, Turkeys, Wool, Milk, Honey, Beeswax)

<u>DISTRICT</u>	<u>ACTUAL</u>	<u>100% OF PARITY</u>	<u>DIFFERENCE</u>
1ST	3,379,799,134	4,760,280,442	1,380,481,308
2ND	573,093,500	807,173,935	234,080,435
3RD	90,342,410	127,242,829	36,900,419
4TH	413,947,570	583,024,743	169,077,173
5TH	903,408,070	1,272,405,722	368,997,652
TOTAL	5,360,590,684	7,550,127,671	2,189,536,987

1979 U. S. PARITY AT NATIONAL LEVEL

71%

ALL FARMS ALL COMMODITIES

WHAT THE STATE WAS SHORTCHANGED BY:

\$2,189,536,987

NATIONAL FARMERS ORGANIZATION, CORNING, IOWA 50841

SOURCE: Kansas Crop & Livestock Reporting Service, Topeka, Kansas

NOTE: PARITY FOR OCTOBER, 1981, WAS AT 57%

Monday, February 6, 1978

Testimony of Congressman Clifford Allen
before the
HOUSE COMMITTEE ON AGRICULTURE

A COMMON SENSE APPROACH TO THE FARMER'S PROBLEM

Mr. Chairman and members of the Congress,

"THE ONLY WAY YOU ARE GOING TO SOLVE YOUR CITY PROBLEMS IS TO SOLVE YOUR RURAL PROBLEMS."

This profound truth was given expression in the first sentence of a White Paper on "Rural Migration", emceed by newscasters Edwin Newman and Garrick Utley, back in 1971. ---"THE ONLY WAY YOU ARE GOING TO SOLVE YOUR CITY PROBLEMS IS TO SOLVE YOUR RURAL PROBLEMS."

Seven and one-half years have since passed, and we are no nearer solving either the city problems or our rural problems than we were then.

It is unfortunate that so many people who live in the cities do not realize that farming and agricultural production constitute the very backbone of America and its economy.

More than seventy-one percent of all new wealth, including food, fiber and raw materials produced in the world today, comes from the land and farms. And in America, our farmers have developed the most efficient and productive agriculture in the world.

We who live in the cities and towns must come to recognize that almost everything we consume--not just the food we eat--but virtually all of the material possessions and comforts we enjoy are fabricated from what is extracted from the soil and the good earth.

And it is time for us to realize and appreciate the fact that those who have invested their money, and who toil on the farms from sun-up, are entitled to share fairly in the wealth which they have produced.

They are not sharing in that wealth today.

And mere expressions of sympathy by high officials, from the President of the United States, the Secretary of Agriculture, and the members of Congress--no matter how sincere or well intended-- will not put one penny in the pockets of a single farmer until they are prepared to say what they are willing to do about it--and do it!

We must have affirmative action-- and that affirmative action must come from the President and the Congress of the United States!

3/5/79

Congressman Clifford Allen is now deceased, but this is as true or truer today than the day he wrote it. THIS 9/28/1982 AND OUR NATION IS CLOSER TO THE BRINK OF DISASTER THAN EVER, SO SUPPORT FLOOR PRICE BILL H. R. 7111 CALLING FOR 90% PARITY AND SAVE OUR NATION

W. A. STAPLETON Sr.

IN BERLIN, GERMAN CITIZENS ARE SENDING PACKAGES OF FOOD AND CLOTHING TO THE HUNGRY AND COLD CITIZENS OF A MAJOR INDUSTRIAL CITY.

MORE THAN TWO MILLION CITIZENS ARE HOMELESS, SURVIVING UNDER BRIDGES, IN OLD CARS, IN ALLEYS AND ON THE STREETS.

ELDERLY CITIZENS HUDDLE IN COLD BUILDINGS CHOOSING BETWEEN WARMTH, ADEQUATE FOOD, OR MEDICAL CARE, DESPITE A WORLD-WIDE GLUT OF NATURAL GAS AND OIL.

MORE THAN 3 MILLION NEEDY SCHOOL CHILDREN HAVE BEEN CUT FROM SCHOOL LUNCH PROGRAMS.

BUSINESS BANKRUPTCIES ARE AT AN ALL TIME HIGH, AND DAILY REPORTS OF FAMILY FARM BANKRUPTCY SALES FILL THE NEWS.

UNEMPLOYED MILLIONS SEARCH IN VAIN FOR A JOB, ANY JOB, WHILE LAWMAKERS VOTE THEMSELVES A HEFTY PAY RAISE, AND GIVE ANOTHER MASSIVE TAX BREAK TO THE WEALTHIEST CITIZENS IN THEIR COUNTRY.

IF WE WERE READING ABOUT THESE EVENTS OCCURRING IN ANY COUNTRY, U.S. CITIZENS WOULD SHAKE THEIR HEADS IN DISBELIEF THAT A NATION WOULD TOLERATE SUCH CONDITIONS.

BUT, THESE ARE BUT A FEW EXAMPLES OF CONDITIONS THAT EXIST IN OUR COUNTRY TODAY, AND YET, U.S. CITIZENS ARE BEING TOLD TO "STAY THE COURSE", HANG-N THERE, HOLD ON...

BUT, WE ASK --HOLD ON TO WHAT, HANG-IN WHERE? AN ALLEY, UNDER A BRIDGE, IN AN ABANDONED CAR? STAYING THE COURSE AT THIS POINT SOUNDS LIKE AN ORDER GIVEN BY THE CAPTION OF THE TITANTIC IMMEDIATELY AFTER STRIKING THE ICEBERG.

WE BELIEVE THAT THOSE ELECTED TO SERVE THE PEOPLE OF OUR NATION MUST FACE THE REALITY OF THE CONDITIONS THAT CURRENTLY EXIST IN OUR NATION. IT IS MORE THAN DISGRACEFUL THAT WE, THE RICHEST NATION ON EARTH, ALLOW OUR CITIZENS TO GO IN DESPERATE NEED OF EVEN THE BASIC NECESSITIES OF LIFE-- FOOD, CLOTHING, SHELTER, MEDICAL CARE, AND MEANINGFUL, PRODUCTIVE WORK. WHILE THIS DENIAL OF THE BASIC NEEDS IS SOMEWHAT STANDARD IN SOME DEVELOPING NATIONS, TO HEAR AND SEE REAL HUNGER AGAIN RISING IN THE U.S., MAKES A MOCKERY OF ALL THAT WE, AS A NATION, HAVE STOOD FOR IN THE PAST. WE BELIEVE OUR ELECTED REPRESENTATIVES MUST TAKE IMMEDIATE ACTION TO CORRECT THESE CONDITIONS. ONLY THEN CAN WE CLAIM TO BE REAL LEADERS OF OUR WORLD.

By Richard M. Aldrich
Directing Representative
Machinest Union
IAM & AW
Wichita, Kansas

In 1896 William Jennings Bryan said it best, "Burn down your cities and leave our farms, and your cities will spring up again as if by magic, but destroy our farms and the grass will grow in the streets of every city in the country."

As long as the North American farmer can supply our food at a price that allows us to spend the greatest part of our income for our cars and TVs and recreational items, our high standard of living can continue. But, when our farmers can no longer produce our low-cost food, or when they have no economic incentive or ability to produce this food — truly, again, "the grass will grow in the streets of every city in the country."

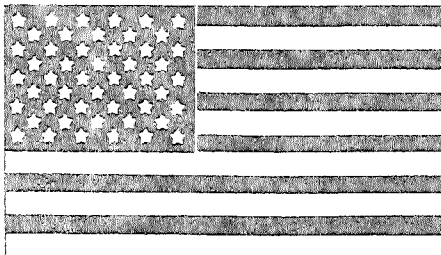
Submitted by Mr. E.T. Evans, Boise, Idaho, in response to a request from Hesston Corporation to the membership of the American National Cattlemen's Association (now the National Cattlemen's Association).

This message was presented on behalf of North American farmers and ranchers during the 1977 telecast of the National Finals Rodeo in Oklahoma City, Oklahoma, sponsored exclusively by Hesston Corporation and participating Hesston Farm Equipment Dealers.

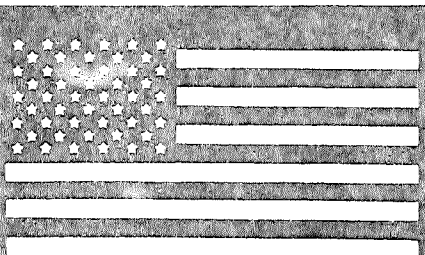


Hesston, Kansas

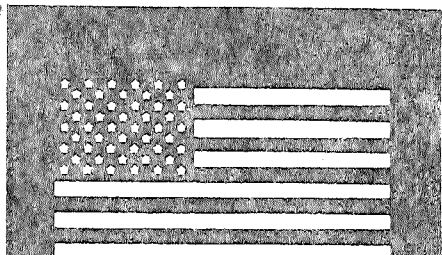
Litho in U.S.A.



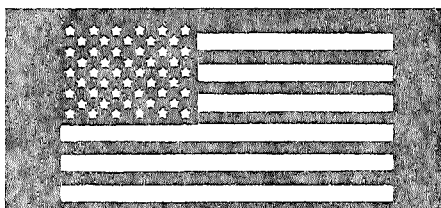
AT 10:00 THIS MORNING PROFITS BECAME ILLEGAL



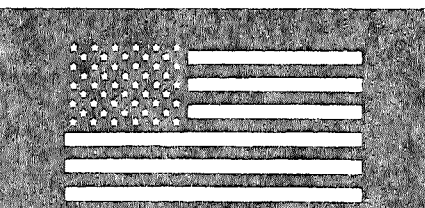
At 11:00, corporations began to cancel all programs involving profit reinvestment. New plant and equipment orders are halted.



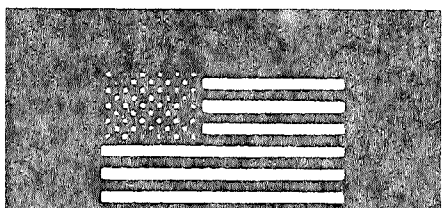
By 1:00 p.m. capital goods manufacturers announce employee layoffs affecting five million workers. Machinery builders close plants throughout the country.



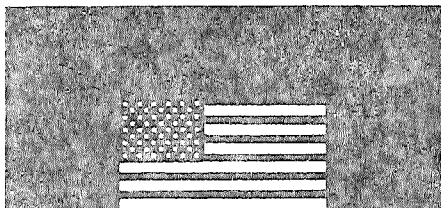
The automotive Big Three discontinues production and sends one million employees home on indefinite layoffs.



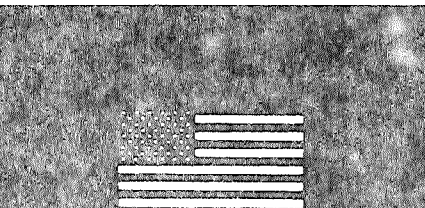
By the end of the trading day, the Dow Jones Industrials have plummeted 750 points, causing a suspension of trading.



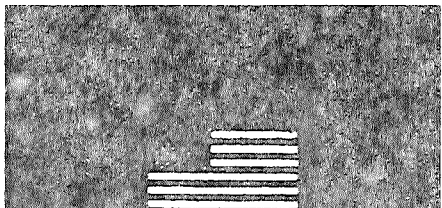
The following morning steel and tire companies around the country announce plant closings and even more layoffs.



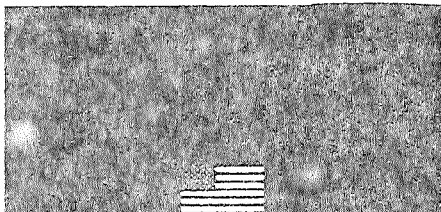
That afternoon, the Labor Department declares national unemployment at a staggering 47%. Retail stores begin to close their doors.



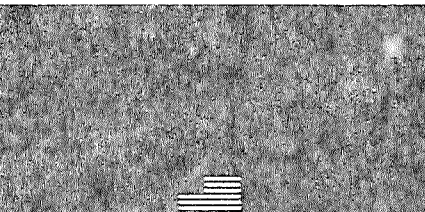
The federal government, facing tremendous losses in tax revenue, is printing money to support swelling public welfare costs.



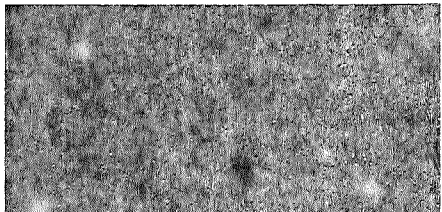
By midweek inflation is running at 100% per day. A dozen eggs cost \$50. Supermarkets with empty shelves turn away angry customers.



By the close of the business week, only a few vital industries are operating. Money has no value. People are rioting, fighting for survival. The economy is ruined.



In Washington, politicians are fleeing the country.



Think about it America! If we're not careful, 10:00 this morning will be sooner than we think.

THE STATE OF AGRICULTURE

Commentary By Kansas Rural Center

The latest figures on the parity ratio for raw farm materials have dropped to the lowest annual level since records were first kept in 1910. Farm prices are the poorest since the depths of the Great Depression. The farm economy is burdened with a private debt of \$200 billion. Increased export sales have accompanied this decline to a high of \$43.5 billion of farm commodities in 1981. Even so, the national trade deficit is deep in the red and huge surpluses weaken grain prices.

The agricultural policy that has stimulated this dreary situation has promoted and encouraged an energy intensive, petro-chemical agriculture and a high cost industrial technology. Adoption of these farming methods have been generously rewarded by provisions in the Internal Revenue Code. These policies have spawned an agricultural system of specialized, large scale, corporate farming operations, with an increasing number of non-operating owners. This system is marked by short term planning, maximization of private profit and a cavalier attitude towards the future.

At the same time, the importance of raw material production to the overall health of the national economy has been flouted by politicians and policymakers, and a good many farmers as well. These raw materials are the food, fiber, minerals, metals, fossil fuels, fish and timber that provide the primary sources for the national wealth. There simply aren't any goods or products made, sold or consumed that don't require a raw material in the production process. Agriculture provides about 70% of these raw materials.

It is generally agreed that each dollar of income generated from the production of raw materials will multiply into another five to seven dollars throughout the national economy. With agriculture composing so much of the raw material production and with farm prices so low, the stagnation of the national economy is not difficult to understand. The income is simply not being generated on the farm to multiply and expand throughout the rest of the economy. This fact is demonstrated in the current all time low parity ratio.

While the national economy suffers from a lack of farm dollars, the total farm income in 1982 will not even pay the interest on the \$200 billion farm debt. This squeeze, which has been experienced in agriculture for many years, is spreading like a contagious disease throughout the remainder of the economy. The only sector of national income to experience growth in the last few years is interest income. With a total public and private debt of \$8,960 billion and a national economy that produces no real growth in new wealth, primarily because of low farm prices, it will not be long before the national income will not pay the interest on the national debt. Such an occurrence will surely mark the complete bankruptcy of the nation.

The cumulative effect of these policies over the years has grossly depleted the fossil fuel, soil and water resources of the nation. It has driven millions of farm families off the farm to stand in urban unemployment lines. Rural communities have been decimated with a loss of people, businesses and opportunities. Political power and economic security have been swept away from a majority of rural people. Elected representatives have all too often conceded policy making powers to the monopolized conglomerates and the international banking houses who reap great profits from debt-ridden economies.

The depression being experienced in rural America is a direct result of 50 years of policy making formulated at the highest echelons of industry and government. The policies generated by these elite few have utterly destroyed the rural economy, and have brought the whole nation to the brink of economic chaos.

It is to the credit of farmers throughout the

country who recognize the need for structural changes in agriculture as well as permanent price protection. The collective bargaining efforts of the NFO, the grass roots organizing of the AAM for support of parity prices, farmers supporting each other to prevent farm sales and foreclosures and the growing movement away from petro-chemical farming practices are all intended to strengthen the power of farmers and secure prosperity for everyone. These efforts should be supported by everyone.

There are those who dispute the urgency of the times. Defenders of the status quo like things the way they are. Apologists for the system marvel at how technology has improved the quality of rural life and has freed millions of people from the drudgery of that life. Both positions conveniently ignore the reality of current conditions. These people should be identified and isolated from the main stream of farmers who recognize the need for change now!

Implementation Plans For Minimum Pricing

The American Agriculture Movement and the National Organization for Raw Materials (NORM) have been the primary proponents for adoption of minimum pricing legislation for agricultural raw materials. NORM has proposed a National Economic Stability Act, which spells out the specifics of implementing this legislation.

1. Prices for regulated commodities will be set monthly for each farm credit district by the USDA under the supervision of a national board of producers. Prices will be not less than 90% nor more than 110% of the parity price.

2. The producers board will determine the national need for domestic consumption and foreign trade. Marketing certificates will be issued to farmers allocating quotas based on past production records. Any surplus production will be stored at the farmers expense to provide a national reserve.

3. To ensure compliance with the law, sellers and buyers must report first-entry-to-market transactions to the county ASCS office. A commodity tax will be levied to pay for the cost of administering the program.

4. The minimum wage will be expanded to cover all workers in order to guarantee mass purchasing of production supply at the new market prices. The minimum wage will equal the parity price for a bushel of corn.

NORM maintains this program will decrease the size of government and will result in only slight rises in consumer prices. NORM insists that the multiplying effect of raw materials income will increase business and personal income, provide additional revenue for the federal government, create more jobs and bring true prosperity to the nation.

The Kansas Legislature

The Kansas legislature has convened for the 1983 session with a little less fanfare than usual. Most of the lawmaker's attentions are riveted on shoring up the state's financial position, which has dipped to a precariously low balance. The need for new state money has almost guaranteed the passage of a severance tax on oil and gas and other minerals. There will be a strong challenge to state banking laws by large Kansas banks who seek the power and authority of bank holding companies, which is currently denied by statute. We will be reporting on these issues and others that affect the interests of rural people, as they develop during the session.

We will pay particular attention to the Agriculture and Livestock Committees and report on the actions they take. These committees have long ago forfeited to the federal government a major role in agricultural policy making. The state has been a housekeeper of sorts to insure the orderly administration of laws and research funds. The State Board of Agriculture is the administrative body which performs many of these tasks. There is little doubt that the legislature and the Board of Agriculture could be more aggressive in promoting and developing a more sustainable agricultural system for Kansas. To stimulate discussion and action on this issue, the Rural Center has developed a platform for legislative action.

Legislative Platform

* Property taxes should be progressive under a system of classification where large landholders pay a larger tax burden than smaller farmers.

* The corporate reporting law should be strengthened to determine classifications of filing corporations and the status of non-corporate operators according to legal definitions.

* The state conservation commission should be funded adequately to insure cost sharing money for soil and water conservation projects.

* Severance taxes on excessive soil and water usage should be written into the tax laws.

* Food purchases from state agencies, institutions and school districts should be obtained from Kansas producers when the quantity, quality and availability of food products are reasonably similar to interstate markets.

* An organic standards act should be enacted to define standards for organically grown farm produce.

* Agricultural research at land grant universities should become more accountable to the needs of family farmers and small scale farmers.

* Demonstration projects on low cost energy systems for farmers should be funded by the legislature and implemented by the Energy Extension of Kansas State University.

* A state administered loan program at discounted rates of interest should be enacted to help beginning farmers who are unable to secure credit from other sources.

* Tax credits or financial incentives should be written into the tax laws to encourage people to sell their land to beginning farmers.

Grain Elevator Legislation

Several bills have been introduced into the legislative process which are aimed at altering some of the laws governing grain warehouses. The legislation is the recommendations of a special interim committee which studied grain elevator bankruptcies. Although many of the changes are cosmetic in nature, some of them are important:

SB1) Operators of grain warehouses will be required to submit a detailed financial statement to the state grain inspection department when applying for or renewing a license. The operators will also need greater assets to qualify for a license.

SB2) Every public warehouseman must present each depositor of grain with a verified annual statement of grain stored in the elevator. The statement must include the type of grain deposited, the total bushels or pounds stored and the year storage began.

SB3) Gives the state grain inspection director more power in cases of grain elevator insolvencies. The director is allowed to maintain the records, property and commodities during the period of time the warehouseman is insolvent. The settlement of receiverships must be resolved within six months rather than the current 18 month period. Also, the state grain director may be named as temporary receiver of an insolvent elevator.

SB5) The state Attorney General is designated as the primary prosecutor in grain elevator cases. County and district attorneys currently have this role.

SB6) The director of the grain inspection department will serve at the pleasure of the governor, rather than a two year term of service as is now provided.



FARMERS, RANCHERS, LABORERS & MANAGEMENT

HERE IS THE ANSWER TO OUR ECONOMIC PROBLEMS!!

YOU CAN MAKE IT HAPPEN!!

We, the National Organization of Raw Materials and the American Agriculture Movement, knew YOU WOULD WANT TO KNOW all about HR 7111. It is legislation NOW being considered in the House of Representatives in Washington, D. C.

PLEASE take time to read this material which explains the background and basis upon which HR 7111 was written. Then continue to read and you will discover a TRIED and TRUE SOLUTION TO THE ECONOMIC PROBLEMS OF FARMERS, LABOR, MANAGEMENT AND OUR FEDERAL GOVERNMENT!

ALL TRUE WEALTH COMES FROM THE LAND - AGRICULTURE. It is the largest industry in the nation and because the agriculture dollar flows through so many hands, it holds the KEY to national economic prosperity. Most economists recognize that economic DEPRESSIONS are FARM LED and FARM FED.

HR 7111 incorporates a program that includes the following criteria: The program must be acceptable to the PRODUCER, the CONSUMER and to the CONGRESS.

The program must stabilize commodity prices at a level which will return a fair and reasonable price to the PRODUCER, must have as little governmental interference in producer decisions as possible, must be fair to all producers - large or small, should allow as much freedom for the producer as possible and must be simple.

The program, for the CONSUMER, must have little effect on FOOD PRICES, must stabilize food prices, must assure an abundant supply of food, must not require any subsidy to the producer and must be simple.

The program, for CONGRESS, must have no budgetary exposure, must be cost effective, must require no subsidies to the producers, must be acceptable to consumers and producers, must incorporate supply management provisions and must be simple.

Basically, the minimum price concept, HR 7111, would require that Congress would legislate a minimum price on all basic storable commodities equal to 90% parity as determined by the USDA under present parity criteria. (The 1938 law) The law would simply state that it would be illegal to buy or sell any of these commodities at prices less than those established by the law. It would work very similar to the minimum wage law which requires that no one may be employed for less than a minimum hourly wage as established by law.

The minimum wage law does not require that employers must hire every available worker regardless of need. It does require that he pay at least a minimum price which is established by law of "any" labor which he does hire. The minimum price which is established by law would not require buyers of agriculture commodities to purchase "every" available bushel or pound of a commodity; only that if they buy "one" bushel or "one" pound, they will be required to pay "at least" the minimum price as established by law. Violation of the minimum wage law is punishable by a stiff fine. Violation of the minimum price law would also be punishable by a stiff fine.

The planners of this program were not so naive to think that, given the proper incentive, farmers would not Over Produce. To compensate for this ability, the law would require that a National Production Base for each commodity be established. The national production base would be determined by totaling the average domestic utilization, the average export utilization and a national emergency reserve. Each individual producer would be issued his share of the national production base in the form of Marketing Certificates, based on his farm's past acreage and production history. The national production would be established each year, based on the previous years utilization. If the stocks on hand drop below the national production base, the producers share of the marketing certificates would be increased by that incremental percentage.

It should be understood that the producer could produce all he wants to produce, however, he could "only market" that amount which equals to his share of the marketing certificates. What happens if he Overproduces? He must bear the expense and responsibility of storing that overproduction, isolating it from the market until the next year, or, when he does have marketing certificates available. For instance, a producer has certificates for 50,000 bushels of wheat. He plants with the intention of harvesting 50,000 bushels but the weather is good and he harvests 60,000 bushels of wheat. He must store 10,000 bushels until the following year when he could cut his production back by 10,000 bushels and market that which he was so fortunate to produce the previous year.

The producer would also have the option to continue to produce more than what he can market as insurance against a bad year or crop failure. At some time in the future, theoretically he could get an entire year's production ahead, idle his entire farm and market his over production, thus taking needed Conservation Measures to conserve our dwindling farm lands. The expense of storing and preserving his over-production would be his responsibility; thus releasing the federal government from that responsibility. The important thing to remember is that he makes the decision of what he wants to do based on his share of the marketing certificates and that he will receive a FAIR PRICE for that product which he sells.

The certificates would be negotiable, allowing a person who had a crop failure to transfer the certificates to a person who had an over production. This ability would prevent a shortage from developing, keeping the supply adequate for the buyers and stabilize prices.

The role of the GOVERNMENT in this program would be to establish the national production base (information is already available), establish individual producer quotas (which is already available from the ASCS records) and to investigate complaints of violations of the minimum price law, HR 7111.

The CONSUMER would be protected with an abundant supply of food while the producer's prices would not be destroyed by having more supply available than the market would bear. The National Food Reserve would be a program the entire nation would share in, removing that burden from the shoulders of the individual farmers. Any supply needed by the nation for this reserve would be purchased from the producers at the average market price.

Research has indicated that FOOD PRICES would rise approximately 1.5% of the average take home pay the first year because farm prices are so depressed, however, the costs would stabilize after three years when the initial adjustment has been made. The effect on the NATIONAL ECONOMY would more than offset any minor adjustments in food cost. DEMAND for all MANUFACTURED items would INCREASE immediately, generating hundreds of thousands MORE JOBS for our UNEMPLOYED. Government REVENUES would increase reflecting less demand for BORROWED MONEY by the government and LESS INFLATION as a result EARNED INCOME would REPLACE BORROWED INCOME thus LOWERING INTEREST RATES.

The COST of administering this PROGRAM would be a fraction of the amount which is required to administer the present farm program. A CONGRESS which is truly sincere in cutting government spending should be receptive to such a program.

Until such a time that world market prices could readjust to the U. S. level, it would be necessary to restrict the flow of additional foreign produced commodities into the U. S. market, by implementation of a tariff program similar to those used by all other industrialized nations of the world.

In the final analysis, this approach to solving the ECONOMIC PROBLEMS of our nation's FARMERS would be EFFECTIVE in SOLVING THE ECONOMIC PROBLEMS OF LABOR, INDUSTRY AND THE FEDERAL GOVERNMENT.

AGAIN. YOU CAN MAKE IT HAPPEN!!!! Go to your friends in LABOR and MANAGEMENT and contact your LEGISLATIVE SERVANTS. -HR 7111 IS THE ANSWER! It is so SIMPLE and it WILL WORK!!! (Gerald McCathern Editor)

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