

Report of the

**Jackson
County
Agricultural
Conference**

Conducted In

MEDFORD, OREGON

FEBRUARY 20 AND 21, 1936

AGRICULTURAL ECONOMIC CONFERENCE
JACKSON COUNTY
1936

COMMITTEES

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Fred Homes, Ashland
 Arnold Bohnert, Central Point
 Ernest Neidermeyer, Rt. 2, Medford
 John Hueners, Rt. 2, Medford
 Rafael Benson, Rt. 2, Medford

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 E. B. Poyer, Ashland
 W. J. Warner, Medford
 Dick Straus, Gold Hill
 Chester Wendt, Rt. 2, Medford
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Verne Brophy, Medford
 Claus Charley, Brownsboro
 Dr. G. A. Gitzen, Medford
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Poultry

Watt Beebe, Central Point
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 Buford Clark, Eagle Point
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FOREWORD

This bulletin contains the report prepared by committees at the Agricultural Economic Conference held at Medford, February 20 and 21, 1936, at which time farmers from all sections of Jackson county gathered to study a future program of agricultural projects for the county.

Recommendations included in this report represent the best opinions of committees made up of representative farmers and are the result of careful analysis and thought.

This bulletin is published through the cooperation of the Jackson County Court, which feels that the information gathered herein will be of valuable assistance to new farmers and a basis for the agricultural development of the county.

H. E. CONGER, General Chairman.

R. G. FOWLER, Secretary and County Agent.

REPORT OF HORTICULTURAL COMMITTEE

Commercial fruit production in the United States has undergone several very marked changes during the past 20 years. Improved methods of transportation have made possible a concentration of production in high yielding districts far removed from the centers of consumption. These areas have forced out of production many orchards located close to the markets, but where soil and climatic conditions are such that heavy yields are impossible.

In the case of apples the readjustment has brought about a reduction of the number of trees, since 1910, from 216,800,000 to 96,000,000, a decrease of 56%. In spite of the decrease in the number of trees, however, commercial apple production has remained about the same. The number of pear trees has increased approximately 6% but production has increased over 100%.

Apparently, the commercial production of many fruits has reached a peak but the acreage not in full bearing probably will maintain the present total production, even though no new plantings are made for the present. In the case of apples it appears that commercial production will not increase, but pears, especially some varieties, will probably show a substantial increase during the next ten years.

The past five depression years have been more difficult for the western growers than they have for the eastern grower. This has been due largely to differences in the cost of transportation. In years of high prices the difference in the cost of freight is more than offset by heavy yields, and superior pack and quality. In low price years, however, the greater cost of freight may be the difference between profit and loss.

In view of the general situation and in view of the conditions that prevail in the Rogue River valley, the following rec-

ommendations regarding tree fruits are submitted:

Future Planting of Fruit Trees

Missing trees in present orchards, where the orchard is situated on suitable soil, should be replaced with trees of the present varieties.

Planting of new blocks of pears is not recommended for the present, except where planting is needed to complete an economic unit or where the owner feels sure that no other crop is as well adapted to his particular soil. Pear trees should be dipped in Bordeaux mixture prior to planting.

There seems to be an opportunity for limited planting, on favorable soil and in favorable situations, of late peaches for shipment to California and other nearby markets. Before making new plantings of this fruit, however, growers should thoroughly investigate the market possibilities. The present market can easily be overdone.

Cherries do well in the higher, well-drained, lighter soils of the valley, but until a practical method of controlling bacterial gummosis is developed, growers should be cautious about making new plantings of this fruit. It is urged that further experimental work be done on the gummosis problem.

Although a sufficient acreage of apricots should be maintained to supply local markets, production for outside markets does not appear feasible.

The apple acreage should not be extended at this time, due chiefly to the severe competition of other apple districts. There seems to be some opportunity for the red strains of Delicious but the present plantings and trees recently grafted to these varieties appear to be ample for present needs.

Due to the fact that commercial fruit production in the Rogue River valley is now largely con-

fined to a single commodity, the district should experiment with and consider the possibilities of additional horticultural crops. It is recommended that the Southern Oregon Experiment Station conduct trials of new and promising fruits, and that a permanent committee be appointed to investigate the market possibility of such fruits. There is reason to believe that certain varieties of plums for fresh fruit shipment might be profitable if properly exploited and there is also reason to believe that a market for late peaches might be developed in the Middle West and other distant points.

Recommendations Regarding Orchard Practices

Cover crops for all tree fruits are strongly recommended. The use of nitrogenous fertilizers is recommended when non-leguminous cover crops are grown and in many cases these fertilizers are beneficial even where leguminous cover crops are used.

The older the orchard the greater the need for soil fertility, particularly on the lighter soils. In the case of pears it is highly desirable that ample nitrogen be available during the time of bloom.

Since there is a wide variation in the price received for pears of different sizes, growers should seek to produce more fruit of the desirable market sizes, through orchard practices such as appropriate pruning and thinning.

Pear growers sustain serious losses each year because of too high a percentage of culls. Damage from diseases and insect pests contributes heavily to the cull pile. There is but little doubt that the cull situation can be improved by timely and efficient spraying. The final test is—do you obtain thorough coverage with your present methods and equipment and do you apply your sprays at the right time?

Recommendations Regarding the Elimination of Infected Orchards

Neglected orchards that are in-

fectured with diseases or insect pests continue to be a menace to many of the orchardists of this district. It is urged that the inspection service carry out an active campaign for the removal of infected orchards and it is further urged that the county court make funds available to accomplish this purpose.

Grading and Packing

The Rogue River valley has gained world-wide recognition because of the high quality of its pears. Its reputation on the market is one of its greatest assets and it is highly essential that the district maintain its reputation by continuing to packing a high grade product.

It is believed that a high grade pack can best be assured by continuance and extension of the present methods, i.e. by continuance of large centralized packing units under capable supervision.

It is believed, further, that to insure a satisfactory product, the most modern packing house equipment and cold storage facilities should be used. It is most important for the grower as well as for the packer to avoid bruising of the fruit and to minimize as much as possible any delay in handling from the orchard to cold storage or iced cars.

Printed wraps should be used and these should bear handling instructions as well as recipes for the use of pears.

Federal inspection is recommended for shipments in most cases.

Individual growers' brands are recommended only in case the grower has sufficient tonnage to make a satisfactory market unit.

The industry should strive to have each box of pears properly packed and graded, properly handled, well labeled, and neatly stamped so that each box is an advertisement to the trade of Medford quality.

Advertising

The winter pear is still unknown in many of the areas of the United States and foreign

countries. In fact, it is one of the few major fruits that offer opportunity for exploitation through advertising and education.

It is urged that the Medford Winter Pear committee continue work similar to that done in Detroit and Pittsburg a few years ago.

It is urged that the Oregon Washington Pear Bureau be supported.

It is further urged that full support be given to the work of Prof. Henry Hartman at eastern markets, which includes the determination of the best methods of shipping, proper methods of ripening, surveys of retail establishments to check on the condition of the fruit and such other factors as relate to the delivery of a satisfactory product to the consumer.

Marketing of Bartlett Pears

Due to the continually increasing supply of Bartlett pears it is necessary that steps be taken to improve the processing and marketing of this variety. It is recommended that efforts be made to join other districts in an advertising campaign for Bartlett pears.

It appears that a cooperative cannery, properly operated and managed might be a desirable asset so far as Bartlett pears are concerned and it is recommended that the present committee, or a similar committee, continue investigation into the feasibility and possibility of such a cannery.

It appears that there is need for the simplification and liberation of the canners' grading rules as they apply to Bartlett pears.

Marketing Bosc Pears

It is urged that facilities for the ripening of Bosc pears be developed in such primary markets as Chicago, Boston, Detroit and Philadelphia.

Development of By-Products

It is recommended that the Oregon State College continue in its efforts to devise ways and

means of utilizing cull or off grade pears.

It is urged that the Medford Chamber of Commerce make an attempt to interest capital in the promotion of pear by-products.

Foreign Competition in Domestic Markets

It appears that pear importations, particularly from Argentine, may offer serious competition to Medford pears in American markets. It is urged that the committee appointed to investigate this matter continue its search and make recommendations regarding a proper course of procedure.

Transportation

It is recommended that the pear industry make an attempt to secure a reduction of icing charges.

It is urged that the industry continue its efforts to secure improvements in refrigerator car construction and greater efficiency in transportation.

The pear industry should continue its efforts in cooperation with other districts to obtain a reduction in freight rates to eastern markets. It is urged that a committee of growers be formed to work with the Rogue River Traffic association in gaining this end.

General Recommendations

The fruit growers league, a growers organization formed for the purpose of furthering the interest of horticulture in the Rogue River valley, in the past has handled the spray residue problem, legal problems, and many other problems effecting the industry as a whole. It is recommended that all growers urge their shippers to make the annual contribution of one mill per box so that there may be a more equal distribution of the burdens assumed by this organization.

REPORT OF LIVESTOCK COMMITTEE

It is doubtful whether there will be the shortage of cattle in the next several years there was at the beginning of 1935. In some of the states of the great plains area, there were less cattle at the beginning of 1935 than in 1928, while in other states cattle had been reduced two-thirds.

The drouth of 1934 was responsible for some reduction throughout the drouth areas. As conditions improve it is likely cattle will be increased, nearer the normal supply. In the south, cattle were reduced very little during 1934. Where numbers now are unusually large there would be little reason to expect any increase under normal conditions but if the acreage of land devoted to cotton and other cash crops is kept at a permanent low level and the land retired from production should go into grass, there would be a possibility of a further increase in cattle in this area. Likewise, if corn acreage in the eastern corn belt should be maintained below the average of recent years and the acreage of hay and pasture crops are correspondingly increased cattle production may be stimulated further. In the North Atlantic states and in other states where cattle are almost exclusive of dairy type any change will be influenced largely by conditions in the dairy industry.

Oregon Shows Marked Increase

The number of cattle in Oregon increased from 702,669 in 1930 to 928,000 on January 1, 1935. This is an increase of more than 200,000 head.

Horses have decreased throughout the country since 1920 from 20,000,000 to 12,000,000 head. This has been responsible in a large measure for the surplus of feed in the United States. The number of horses in Oregon decreased during that period 110,000 head and the proportionate

decrease prevails in Jackson county.

Oregon Has Decrease in Hog Crop

The number of hogs in Oregon has decreased nearly 100,000 head during the last few years.

The present situation regarding hogs throughout the nation is that the production is the smallest that it has been in 50 years, due to the drouth and the production control program. With removal of the production program and though prices for pork are high, it is logical to expect there will be a rather rapid increase, especially in the corn belt. For the next two or three years, production in the western states likely will not increase as rapidly because of the shortage of breeding stock.

The general tendency at this time is toward increased production in the United States. This upward trend, however, may be somewhat restrained and actually may be stopped temporarily by the grazing policies that are being inaugurated by the grazing administration of the department of interior under the Taylor Grazing Act, and in the national forests. At the present time there are enough sheep in the United States to take care of the needs.

Sheep in Oregon have decreased during the five year period, 1930-1935, but there still are nearly one-half million more than in 1925.

Jackson county affords opportunity for the production of the present number of beef cattle, the balance between range and the number of cattle and winter feed considered adequate. In certain sections of this county, because of shortage of range due to over-stocking, there likely will be a slight decrease during the next few years, or until such time as pasture and range conditions can be improved.

It is recognized that the range for livestock in Jackson county is of lower carrying capacity than formerly, due to the fact that

brush has crowded out much of the grass. Much of this brush land does not support timber of commercial value, but the present law regulating the burning of brush land is so strict, making it practically impossible for a land owner to improve his grass lands by burning these brushy acres without a prohibitive cost. This

condition throughout the county is making it necessary for land owners to abandon such lands for grazing purposes, and as the lands are suitable for no other purpose, there is a danger that they will be turned back to the county and thereby be taken off the tax rolls.

TREND IN LIVESTOCK NUMBERS FOR OREGON AND THE UNITED STATES

	Sheep			
	1920	1925	1930	1935
Oregon	2,002,378	1,775,093	2,533,000	2,209,898
United States	39,025,000	39,134,000	49,913,000	49,766,000
Jackson County	20,267	12,939	20,917	13,178
	Hogs			
	1920	1925	1930	1935
Oregon	266,778	216,065	193,000	168,580
United States	59,244,000	54,234,000	52,600,000	37,007,000
Jackson County	11,827	9,034	5,080	4,277
	Beef Cattle			
	1920	1925	1930	1935
Oregon	570,697	483,813	412,000	
United States	43,398,000	39,609,000	31,091,000	
Jackson County	25,661	26,331	21,895	About same
	Horses			
	1920	1925	1930	1935
Oregon	271,559	223,848	179,750	161,279
United States	19,766,000	16,489,000	13,440,000	11,827,000
Jackson County	5,248	4,868	3,943	4,066

It is recommended that the state fire patrol association and the state forestry department be requested to liberalize their regulations regarding the burning of such areas. In view of the expense to the land owner of burning such areas under present regulation, the state fire patrol association and state forestry department should be requested to furnish men to aid the farmer and stockmen in burning brush from the land. Civilian Conservation corps men could be of assistance in such a program.

The government should be requested to provide seed for the seeding of these lands following burning of brush. It is the belief such a plan is justified as a means of retaining these lands on the tax rolls, as well as reducing the fire hazards. The Oregon delegation in Congress should receive copies of this resolution regarding seeding of

burned over lands.

Due to the fact that liver fluke is a problem in Jackson county for cattle and sheep, the government should be asked for a supply of blue stone to be scattered on the infected ground for the destruction of snails. The forest service should be asked to cooperate in the control of liver fluke through the use of blue-stone in the national forests affecting this area.

In view of the fact that cattle lice are a problem in many sections of the county, it is recommended that the works progress administration be asked to establish labor projects for the construction of three or four properly located dipping vats. These would be used to dip cattle and in establishing the location for these vats the existing livestock organizations should be consulted.

One of the sources of loss to the cattle men of Jackson coun-

ty is from theft. Conviction of cattle thieves has been somewhat difficult in the past and closer cooperation on the part of the courts is urged. It also is recommended that existing livestock organizations of the county work in close cooperation with the animal industries division of the state department of agriculture and the Oregon Cattle and Horse Raisers' association in obtaining more efficient enforcement in Jackson county through the aid of the state police and other officers. Cooperation with the cattlemen of Siskiyou county, California, livestock associations is urged, thus permitting a closer check on the movement of cattle near the California line. Livestock associations in Jackson county could take united action in asking the forest service to establish checking stations on important highways in the forests to determine the right of any person to move dressed meat over such highways.

A large number of cattle brands in Jackson county have not been recorded with the state department of agriculture. In the recording of such brands there is a protection to the livestock owners from all losses from theft and straying. All livestock associations in the county should urge their members to record their brands.

The present brand inspector is commended for his assistance in the inspection of brands in Jackson county. In view of the fact that he is only on a part-time basis, it is believed that a more careful inspection would be profitable to the cattle owners of the county if the brand inspector was placed on a full time basis. Such a plan should be investigated.

It is recommended that the Oregon delegation in Congress be notified of opposition to the inclusion of O. and C. lands under the forest service. Due to the fact that the land as now owned by the government contributes a large amount of tax money which would not be available if the lands were placed under the Na-

tional Forest.

In view of the fact that at present there is a move underway to remove the embargo on beef from the Argentine, allowing it to be shipped into the United States, and that such action would greatly endanger all livestock through the introduction of foot and mouth disease, it is recommended that a protest against such action be sent the Oregon delegation in Congress.

It is a good policy for Jackson county farmers to market their livestock in a finished condition, either off grass or through finishing with grain and hay. Due to the quarantine against the shipping of hay from the county, it is believed that feeding enterprises should be developed to take care of all hay produced and not cared for by dairy or other classes of livestock. It is believed that the raising of livestock as a means of maintaining soil fertility on the farms of the county is a sound enterprise.

Improved Breeding Stock Suggested

The use of the best quality of breeding stock, particularly good sires in the herds, is recommended, and Jackson county cattlemen should encourage the use of young bulls on the range not to exceed six years of age and to supply ample bulls for breeding service.

Due to the fact that the present regulations under the law regarding the handling of strays is very complicated, there is a great deal of expense and trouble in establishing ownership. Oftentimes the expense of such action is more than the animal is worth. Livestock associations of the county are urged to petition the state department of agriculture to make changes in the law that will simplify the handling of strays at a lower cost.

Young people who are interested in livestock on the farms should be encouraged to feed out a steer for market in 4-H Club work as a means of interesting them in livestock production.

Horses Are Problem

There is a considerable number of horses on the range in Jackson county, many of the horses not taken care of and becoming a means of depleting the feed for cattle. Livestock associations of the county are urged to determine that all horses turned out are properly branded and receive at least three months care during the winter.

There are many scrub stallions that are a source of annoyance and through them the number of horses on the range is being increased. It is recommended that the livestock organizations send resolutions to the animal industry division of the state department of agriculture requesting that where such stallions are not taken up before they are two years old, the proper officials be permitted to destroy them or at least remove them from the range.

There is a shortage of horses for farm labor in Jackson county as well as throughout the state. It is suggested that farmers who are depending on horse labor recognize this shortage and attempt, insofar as possible, to produce enough colts for their own needs on the farm.

No Increase in Hogs

Hogs are important on Jackson county farms as a means of utilizing farm wastes and by-products such as skim milk. It is believed, however, that in view of the shortage of grain and the surplus of forage that the use of such grain should be taken up in finishing beef cattle rather than for the feeding of hogs.

It is recommended that only good quality hogs be kept as a means of getting the greatest return from them and that the present system of marketing hogs through cooperative effort be continued.

Farm Flock Plan General

Sheep in Jackson county are limited largely to the farm flocks, although there are a few range outfits in certain parts of the county. It is believed that the present numbers should be maintained and that there is ample feed to take care of them.

Jackson county conditions afford an opportunity on some farms for finishing lambs on pastures such as clover and alfalfa. Winter Bluegrass also affords excellent pasture in the county. It is recommended that those engaged in the sheep business pay particular attention to the control of disease, especially internal parasites.

REPORT OF DAIRY COMMITTEE

About 10 per cent of the annual agricultural income for Jackson county is derived from the sale of dairy products. There has been a gradual increase in the number of dairy cows in the county, 1910 figures showing cows two years old or over while on January 1, 1935, it was estimated there were 8,600 cows in Jackson county. The increase in

the number of dairy cows in the county has been somewhat more rapid than the increase in the number of cows in the United States. This condition is not alarming in view of the fact that the population in the Western states has increased more rapidly than has the population of the entire country.

NUMBER OF MILK COWS ON HAND

Over a 25 Year Period in the United States, 11 Western States, State of Oregon, and Jackson County.

Year	United States	11 West. States	Oregon	Jackson Co.
1910	20,625,000 (2)	1,341,000 (2)	132,000 (2)	3,824
1920	19,675,000 (3)	1,541,000 (3)	200,000 (3)	3,765
1925	17,645,000 (3)	1,623,000 (3)	217,000 (3)	5,456
1930	22,910,000 (2)	1,814,000 (2)	229,000 (3)	7,086
1935 (4)	25,100,000 (3)	2,177,000 (3)	270,000 (3)	8,600 (est.)

- (1) June 1
- (2) April 15
- (3) January 1
- (4) Estimates by B.A.E.

Source: U.S., U.S. Census Reports.
11 Western
Oregon, 1920-1930, Livestock,
Meat and Wool Market Statistics.

(Tabulated by Oregon State Agricultural College Extension Service.)

The demands of human population of the United States kept ahead of the supply of dairy products until 1933 when, due to increased number of cows, increased production, and a lowered consumer demand, a definite and clear cut surplus of dairy products was accumulated. Because of the rapid increase in the number of cows in the United States from the period beginning 1929, it is probable that even if normal consumer demand had prevailed, there would have been a definite drop in the prices of dairy products.

The 11 Western states market their dairy products at home, thus maintaining a higher price level in these states. On the Pacific coast markets where the products are consumed, this usually has resulted in a freight differential between Chicago and West coast points. The following table shows the price relationship for 92 score butter between Chi-

cago, Portland, and San Francisco.

AVERAGE WHOLESALE PRICE OF BUTTER—92 SCORE (cents per pound)

Year	Portland	San Fran.	Chicago
1933	29.2	30.12	28.78
1934	24.3	25.05	24.78
1933	20.4*	21.11	20.79
1932	23.5**	21.98	20.07
1931	29.4**	28.13	27.05
1930	35.5**	36.31	35.28

* 10 month average (no price for July and August).

** Jobbing quotation, 92-93 score prints (source: Northwest Daily Produce News).

Source: (San Francisco and Chicago) 1930-34, U.S.D.A. Yearbook, 1935. 1935—Monthly Review of Domestic Dairy Markets, B.A.E.

These quotations are all at wholesale except the Portland prices for 1930, 1931, and 1932 which are jobbing for 92-93 score points.

In the case of Oregon, however, a definite surplus is produced, and producers of the state must bear the cost of freight to California and Seattle markets. If the 11 Western states should increase production above the demand within the area, the surplus would be shipped east. The price level would drop to absorb the freight to the point of delivery, and the producers would have to reduce production costs to compensate for the lower prices received.

POPULATION OF THE U. S.,
11 WESTERN STATES, AND
STATE OF OREGON OVER A
44 YEAR PERIOD

Year	U. S.	11 West. States	Ore.
1890	62,947,714	3,102,269	317,704
1900	75,994,575	4,091,349	413,536
1910	91,972,266	6,825,821	672,765
1920	105,710,620	8,902,972	783,389
1925*	113,493,720	10,152,261	846,061
1930	122,775,046	11,896,222	953,786
1934	125,693,000	12,530,606	983,000

* Estimated.

1890-1920-1934—Statistical abstract.

1925—World Almanac for 1926.

1934—World Almanac for 1935.

(Tabulated by the Oregon Agricultural Extension Service.)

Increase Forecast in Two Years

According to the Agricultural Outlook Report for 1936, there is no prospect of a rapid increase in dairy cattle coming in the next year or two. There are indications, however, that throughout the country there may be a definite increase after the end of two years. Present prices for dairy products still are relatively low as compared with the prices of veal, beef, pork, and feed grains. If there should be an unusually large supply of feed grains available, and the price of these grains drop, the dairyman probably would feed their cows more heavily and increase production from the same number of cows now being milked.

This increase might be off-set by increased consumer demand brought about through an increase in industrial pay rolls, as there appears to be a direct correlation between pay rolls and the price of butter, this commodity controlling the price of

dairy products.

The present number of cows in the United States is but little different from the number that existed in 1933 when there was an accumulation of 100,000,000 pounds of butter in storage above normal amounts. It would appear from these figures that the dairy industry throughout the county and in the 11 Western states, seems to be fairly well balanced at the present time. It must be recognized, however, that any too rapid increase in the number of cows, liberal feeding, or a slackening of consumer demand might possibly disturb this balance by creating more products than the market could handle.

Expansion in Jackson County Moderate

There does not appear to have been any too rapid expansion of the dairy business in Jackson county. It is believed that dairymen of the county have done an efficient job in their dairy business. The county is accredited free from tuberculosis and has made rapid progress in testing for Bang's disease. The average production per cow has been raised during the last 10 years, this is believed to have been brought about by a combination of selection, better feeding, and management practices. There has been marked interest in the improvement of the quality of hay and in the development of better pastures both through irrigation and otherwise.

The manufacturing facilities located in the county are more than adequate to take care of all the production for years to come. The price paid by local manufacturing plants has usually correlated closely with the Portland market quotations.

Dairying has been a sound and profitable farm enterprise for Jackson county and its continued growth is inevitable. It appears to be fairly certain that there will be an increase in the feed supply of the county, particularly in the production of alfalfa hay. It is more than likely that most

of this hay will be fed to dairy cows. It seems therefore, logical to direct attention to those dairy practices which are known to be sound, and if followed will be reasonably certain of assuring success when intelligently applied.

The expansion and growth of the dairy industry should be based upon the fact that the dairy enterprise is considered a large portion of the farm business. Development of the dairy industry as a side line business is discouraged.

Under ordinary circumstances high production per cow goes hand in hand with a lower cost of production. To be successful a dairyman must maintain herds of high producing ability, for it is much more desirable to milk a relatively small herd of high producing cows than a large herd with small production. The dairyman who desires to develop a herd of high producing cows must constantly cull the low producers on the basis of production records. This may be done through a herd improvement association or by individual effort. The dairy herd improvement association should be expanded to at least a full month of work and a special committee should be selected to assist the county agent in this enterprise.

There may have been undue emphasis placed upon high production per cow without sufficient emphasis being given to economical production. While it is a general rule that low cost of production goes with high production per cow, higher production among cows with low inheritance may be attained at excessive cost. Close attention, therefore, should be given the cost of producing a pound of butter fat or 100 pounds of milk. Each farm presents a different problem and the successful dairyman must study carefully his own dairy herd operation.

High type sires should be developed in the herd improvement association, a program that will result in proving at least five sires each year being advisable.

Many small operators find it difficult to own a good sire because of relative high cost per cow. It is suggested that partnership ownership or individual ownership by a group of two or three, each to exchange every two years, are two methods by which the owners of small herds may secure the service of good sires. The second suggestion also permits the "proving" of sires.

The organization of a limited number of 4-H calf clubs is to be encouraged, the plan being to develop youngsters who later will assume leadership in Jackson county dairying.

Adequate Feed Supply Necessary

The development of the industry must be based upon the production of adequate supply of cheaply grown foods, hay being the base. There already is a surplus supply of alfalfa hay and under normal conditions it unquestionably will be increased. It is recognized that increased production of alfalfa hay will be the limiting factor in the future development of the industry. Careful attention should be given the problem of producing a liberal supply of this variety of hay, special attention should be given to the problem of curing the hay in order that maximum production can be obtained.

Approximately 4,000 acres of irrigated pasture may be found in Jackson county at present. This acreage can be expanded and the carrying capacity of the present pastures increased through better management practice. Careful rotation of pastures and fertilization are suggested as means whereby carrying capacity may be increased. Development of pasture resources in this county is second in importance to hay as a basis for dairy progress.

There are some areas for which water is not available and on these the use of Sudan grass, sweet clover, and rye grass are all suggested. Cooperation with the county agent is advised to develop pasture trials in an effort to find other grasses which may prove valuable on the non-irri-

gated land.

The use of more succulence as a means of lowering production costs is suggested. Attention is directed to the use of root crops, particularly sugar mangels, and carrots. Both of these crops are grown successfully and it is believed that their use can be expanded.

Management Practices Are Important

The cost of producing milk and butter fat is lower in large herds than it is in smaller herds and it is believed that the expansion of the dairy business should not be encouraged except to those operators who are in a position to maintain herds of a minimum size of 10 cows of milking age. Unless a dairyman is in the business to this extent he probably will operate as a side line dairyman.

The result is usually less attention given to the cost of production, to the quality of the product produced. The combined result of these two influences usually is an unhealthy one from the standpoint of the development of a sound industry.

There is a growing tendency for many dairymen to raise surplus animals for sale to out-of-state buyers. There is no reason to believe that there will be an overwhelming demand for surplus stock, during the next few years and it may be less. The raising of too many animals for replacements for which there is no sale may result in too rapid an expansion of the industry.

The cost of raising heifers as revealed by the study of the Agricultural Experiment Station indicates that at no time during the four years of the study, did the average price received meet the average cost of raising the heifers. At the present time it costs an average of \$65 to bring a heifer into milk production.

Those who wish to raise heifers for the market should be certain that their production costs are below the average. Dairymen should study Station Bulletin 324 for detailed facts on this subject.

Heifers should be raised only from the best cows in the herds.

Much of the valuable soil fertilizer in manure is lost in leaching or through improper handling. Use of loafing sheds where bedding is available in sufficient quantities to make their use satisfactory is suggested. Liquid manure tanks conserve that part of the manure which is most frequently lost and is especially valuable on pastures.

Investigations at the Oregon Agricultural Experiment Station indicate that minerals most commonly deficient in Oregon feed stuffs are calcium and phosphorous, and that these can be supplied cheaply through the use of sterilized bone flour. For those who desire additional information on mineral feeding, attention is directed to Station Bulletin 309, available in the office of the county agent.

Disease Control Programs

Jackson county is on the modified tuberculosis accredited free list. During the last year, however, a few reactors were discovered although there is no particular alarm because of this development. It must be recognized by the dairymen and other cattle owners that when cattle are mixed on the range from various sources there always is the possibility of the spread of disease. Careful attention should be given to the prevention of the spreading of tuberculosis throughout Jackson county because of the intermingling of cattle from areas that are not free from this disease.

Ten thousand head of cattle have been tested for Bang's (abortion) disease with only 6 per cent reacting. This is gratifying to cattle owners of the county and particularly to the dairymen. Dairymen are urged to take full advantage of the federal cattle disease program and continue testing for Bang's disease until abortion has been eradicated from the county. At this time there is no assurance that the testing at the cost of the federal government with the indemnity

will be continued beyond June 30, 1936, thus emphasizing the importance of everyone taking advantage of this federal program.

At the conclusion of the federal program the recently enacted state law for the control of Bang's disease should be made effective in Jackson county.

Any program for the expansion of the dairy industry must include a program for high quality in the products produced. The surplus products of Jackson county must be sold in competition with those of the United States and there can be no sound development of the industry unless it is based upon the production of quality products.

The producer is willing to take his full share of responsibility in such a program for he recognizes that it is his obligation to turn over to the manufacturing plant a good, clean product. He also is fully aware of the fact that some

manufacturing plants do not discriminate in the purchase of raw materials, some paying the same price for low grade cream as for high grade cream.

To develop the dairy industry on the proper basis there should be close cooperation between the manufacturers and the producers. The manufacturers should recognize quality in the raw products by buying strictly on grade, and by paying a definite differential between the different grades. This must be done so that the producer of low grade raw produce will not receive the same price as the producer of the higher grade produce.

Frequent meetings of dairymen interested in discussing problems will be an important feature in development of the dairy industry in Jackson county. A county-wide educational dairymen's organization should be formed, meetings to be held quarterly.

REPORT OF SOILS COMMITTEE

Full utilization of the soil and water resources is the greatest problem confronting Jackson county agriculture. Since 1890 the available area of improved land per farm has been reduced from 169 acres to 34 acres. This means that if the Jackson county farm population is to maintain a satisfactory standard of living, the production per acre on this smaller acreage must be maintained at a much higher level than was necessary 50 years ago.

40,000 Acres Under Irrigation

At the present time there are approximately 40,000 acres of land under irrigation in Jackson county and there is little room for expansion of this acreage because of the limited water supply. Any material expansion of the irrigated acreage is dependent upon increasing the water supply through storage. The present supply is so limited that in some low water years, production

is materially hampered in some sections.

Additional supplies of irrigation water would permit the irrigation of a considerable area of good land for which irrigation water is not now available, and also aid the formation of more secure operations under some of the existing projects. There are storage sites available where reservoirs could be constructed that would supply the additional water. At the present time, the construction of these reservoirs cannot be financed locally and their construction is dependent upon obtaining government aid. Construction of needed reservoirs for increasing the supply of irrigation water is desirable.

In most of the irrigated districts, the water supply is the limiting factor in the expansion of land under cultivation. It may also be the limiting factor in the further subdivision of lands now already irrigated for the purpose

of intensifying farming operations, due to the fact that farms with only a small acreage devoted to intensively cultivated crops demand more water than larger farms, thus increasing the waste of irrigation water. Until further supplies of water are secured wide spread subdivision and intensifying of farming operations should be discouraged.

In order that best possible use can be made of irrigation water, efficient methods of irrigation should be followed on each individual farm. The distribution system of the farm should be carefully designed to distribute the water over land to be irrigated without waste and without damage to soil. The land should be prepared carefully for irrigation prior to seeding or prior to setting out trees.

In established orchards it is, of course, impossible to prepare the land for irrigation and here the method of irrigation should be carefully designed to fit the natural condition of soil and topography. Because of the steepness of most of the land in this section, some adaptation of the furrow or corrugation method of irrigation generally is recommended. The distance between the furrows will depend upon the individual soil type. They should be close enough together to permit the whole area of soil between the furrows to become wet from the irrigation water.

More general use should be made of spring run-off water for the purpose of saturating the soil in the early spring. This will result in the conservation of some of the storage water and is especially important in those years when it is evident that there will be a low water supply. If the winter rains have been sufficient to saturate the soil, of course, there is no advantage in using this run-off water.

Work carried on at the Medford Branch Experiment Station indicates that it may be profitable in the future to govern the irrigation of orchards by the moisture content in the soil as

determined by soil moisture tests. It is recommended that orchardists watch the development of this project to determine if the same methods could be followed profitably in their own orchards.

Most of the irrigation water supply of the Medford area is derived from that great reservoir of frozen water which nature annually deposits as snow on the slopes of the Cascade, Siskiyou, and Umpqua mountain ranges. It is believed that an intimate knowledge of the occurrence and disposition of this snow cover, together with information on factors contributing to the rate of melting, and consequent surface and underground run-off will permit accurate prediction of the net annual flow available to irrigated lands of Southern Oregon.

Within the last several years there have been seasons when precipitation and the resulting irrigation water supply have been so limited as to result in serious economic losses in this district. Irrigation experiments under way at the Medford Branch Experiment Station were initiated in part to determine the best utilization in pear orchards of a limited water supply. Information is now becoming available along these lines. In order that this information may be best adapted to seasonal conditions and that sound economic recommendations on the utilization of a limited water supply may be made to fruit growers, it becomes most important to determine the valley's water resources each year as far in advance of the main growing season as possible. Information upon which predictions of water supply may be based can, of course, be of no assistance in reservoirs in lean years, but such information can be most useful in guiding orchard operations in such years.

For instance, if it should be definitely forecast by early spring that only a limited supply of irrigation water might be available for later use, orchardists would be able to plan accordingly for their thinning, early spring irri-

gation with "flood" waters, and cultivation operations. By early control of soil moisture through spring and early cultivation, water resources of the soil may be conserved and the date of first withdrawal of storage water delayed.

The importance of evaluating the water resources of southern Oregon stresses the importance of snow surveys.

Drainage Problem Present

A drainage problem appears to have always existed in the Medford area. Weather bureau records show that in 1904 there was a recorded precipitation of 42 inches in Jacksonville. The average precipitation for the four years 1901-1904 inclusive was 34.3 inches, nearly 10 inches in excess of a 33 year mean at the station. Such rainfall, occurring chiefly in the winter and spring months must have taxed the natural drainage capacity of this area to the utmost. No doubt it was the occurrence of such wet years that led to the early draining of some tracts.

The advent of irrigation on a large scale has not only greatly magnified the general aspect of the old problem but has changed many features altogether. Studies made by the bureau of agricultural engineering of the United States department of agriculture in cooperation with the Oregon Agricultural Experiment Station at the request of fruit growers of Jackson county during 1929 and 1930 have indicated the nature of the drainage problem in this area, and have resulted in the development of methods designed to correct the problem. Quoting from Station Circular 100, issued in 1931: "In the main, the problem in the Medford area is one of underground drainage. There are instances, however, where surface drainage would be highly beneficial. In parts of the valley it has been customary to dump prunings and other rubbish into the natural drainage channels, with the result that the channels are almost

completely filled. This practice is especially detrimental in those areas where the water table is close to the surface and the soils are porous enough so that the natural drainage channels would, if left in their natural deep state, furnish satisfactory drainage. It would be highly desirable to clean these channels out to at least their original depth.

"On the very tight, sticky soils it is advantageous to supply sufficient surface drainage so that the winter rainfall is carried off before it has an opportunity to soak into the soil. This practice is now carried on by some orchardists and might profitably be extended to other areas.

"Deep drainage may be effected by means of either tile or open ditches. In the Medford area open ditches should be used only as outlets for comparatively large areas. The objections to open ditches are that they take up valuable land and are difficult to maintain. Moreover, in addition to the expense and difficulty of maintaining open ditches is the still more important fact that such maintenance is almost always neglected. It is very exceptional to see a deep, open drain that is properly maintained over a period of years. The drainage problem in the Medford area is thus seen to be chiefly one of the use of tile drains."

The authors describe the various methods of drainage that will prove suitable to the Rogue River valley conditions. No general rules for drainage of orchard lands in the Rogue River valley can be laid down, since it would be difficult to find anywhere in the Western States a valley having more diverse conditions of surface and sub-surface topography. The drainage system, therefore, that will best solve the problems will vary materially from place to place and must be designed in accordance with local conditions.

In the winter of 1930, 3,000 acres of orchard had a water-table less than five feet of the surface, 2,300 acres had a water-

table from five to 10 feet of the surface, and the balance of the orchards mapped, some 3,500 acres, had a depth to ground water more than 10 feet. About 5,700 acres of tree fruits were unmapped.

These figures show that 20 per cent of all the tree fruits in Jackson county were in a position to expect damage from a high water-table at that time. As far as general agricultural lands are concerned, including the orchards, the winter water-table of 1929-30 was less than five feet from the surface over an average of 23,300 acres, making a total acreage of land under which the water-table was close enough to bear watching of approximately 37,000 acres.

A large number of observation posts on the water-table were established during the survey and officials of the Medford, Talent, and Rogue River irrigation districts have made efforts to keep a record on a portion of these wells. However, with receding water levels during the past few dry seasons, these efforts have been largely abandoned. However, with the re-entering of this valley into a normal or wet cycle of years and with the establishment of more adequate water supplies this aspect of the problem will be changed. The conditions favorable to the creation of a damaging high water table are present in many valley orchards and await only the coming of years of increased precipitation to cause damage of noticeable importance.

Soils Should Be Studied

A sound agricultural program is dependent upon growing crops only on soil types suited to their growth. This is especially important when considering long-time crops such as orchards. A soil survey of Jackson county is available for consultation in the office of the county agricultural agent and this report should be consulted before setting out orchards or seeding other crops that should occupy the land for

any length of time.

Careful consideration of the soil report should be given by newcomers in the county so that they may purchase farms having a soil type suitable to that type of farming that they wish to follow.

It is recommended that the Oregon State Agricultural College print an additional supply of Station Bulletin 164, "The Soils of Jackson County."

Rotation Aids Fertility Maintenance

In order to maintain the productivity of the soil, it is necessary that farming operations be followed that maintain a good supply of organic matter within the soil. On the general farm, this may be accomplished best by including some legume in a crop rotation. This legume crop not only would build the organic matter supply but also would add a valuable supply of nitrogen to the soil. The type of legume to grow will be determined largely by the soil type on the individual farm.

On farms having livestock the rotation of a permanent pasture over the area of tillable land on the farm is recommended. It is suggested that this rotation be worked out so that each field on the farm would be placed in pasture once every 10 to 20 years. This should prove of distinct value from the standpoint of maintaining soil fertility.

Cultivated Lands Need Protection

Orchards or other land devoted continuously to cultivated crops should be protected by a growing cover crop every winter. This cover crop is necessary to conserve plant food, maintain the supply of organic matter in the soil, and protect the soil from washing. Wherever legume crops such as vetch or peas may be grown, their use is suggested because of the additional nitrogen supply which they may add to the soil.

Use of some nitrogenous fertilizer or cover crops in order to secure an adequate growth also

is recommended.

Produce Depletes Plant Food

No permanent agricultural program can ever be conducted unless provision is made for the replacement of plant food sold from the farm in the form of farm produce. If Jackson county agriculture is to have a permanent basis some day it will be necessary to add commercial fertilizers having an equivalent amount of plant food to that contained by the products sold from the farm.

At the present time the soils here have not been depleted to the point where the use of commercial fertilizers are generally profitable. Nevertheless, there are many places where they are being used and undoubtedly their wider use would be of distinct benefit to the agriculture of this county. It is impossible to make any general recommendations concerning the fertilizer to use because of the great number of soil types encountered within this area. The use of nitrogen fertilizer on cover crops and the use of some form of sulphur, generally land plaster, has proven profitable on legume crops. When considering

the use of other fertilizers, it probably would be well to consult the office of the county agent about the possibility of securing profitable returns.

As determined on the basis of the present cost of commercial fertilizers, the manure produced by the dairy cattle alone in Jackson county has a value in excess of \$240,000. It is believed this manure is handled in such a manner that a greater percentage of this value is lost and that a similar loss is incurred through the waste of manure from other farm animals.

Methods of handling manure should be adopted that will prevent losses of plant food by leaching and fermentation. This may be accomplished by the use of a loafing shed on farms where straw is available or the use of liquid manure tanks. Greater value may be secured per ton of manure where lighter applications are used, generally not in excess of 10 tons per acre. Manure should be applied to the land at a time when a growing crop will assimilate the available plant food, early spring applications being best.

REPORT OF FARM CROPS COMMITTEE

The acreage of wheat fluctuates in Jackson county, 35 years ago the acreage exceeded 25,000 and in 1919 it was only 3,962. Under the stimulus of war conditions it jumped to 16,263 and back to 11,687 in 1923.

The winter wheat acreage has remained rather stationary for the last 10 years, ranging from 8,000 to 9,000 acres. Local markets are now on a wheat importing basis due to increased consumption by chickens and turkeys. Local farm outlets were responsible for a small increase in acreage in 1935 and it is recommended that any increase in acreage should be in line with local market demands.

Planting wheat in the spring is not recommended except in

emergencies.

Federation wheat is the variety grown on about 80 per cent of the acreage and probably is the best variety under general conditions, and doing well on the richer soils. Jenkins Club is one of the older standard varieties and it is recommended that the Hood strain of Jenkins Club be given a trial. Galgalos for seeding late in the fall or in the spring is good in the Ashland area.

There is an opportunity for a few growers in Jackson county to grow seed wheat for sale to other farmers. There also is a need for further information on varieties and it is recommended that variety trials of both fall and spring wheat be conducted.

Seed for all grain planting

should be treated for smut. The use of New Improved Ceresan dust is recommended since it is cheaper, more efficient, and is suitable for wheat, oats, and barley. Growers can construct cheaply a home-made treating machine, plans of which are available at the county agent's office.

The recommended increase in oat acreage mentioned in the 1924 economic conference report has been accomplished, the acreage increasing from approximately 300 acres in 1924 to 2,600 acres in 1934. Oats are in better demand on local markets and experience less competition from outside sources. Low quality barley is imported in rather large amounts from California points.

Fall seeded oats give better yields than spring seeded. For threshing the Kanota variety is best. This variety seems to suit local conditions much better than any other, maturing early. Some farmers find Kanota oats do well for hay purposes also, others preferring Gray Winter oats for hay.

The county now imports oats and it is recommended that only sufficient oats be grown to supply local markets.

Slight Barley Increase

The trend in barley acreage is slightly downward, although barley as a rule yields more pounds of grain per acre than other grains. Production seems to be limited by the fact that low grade barley is brought into the county and is used to reduce prices on local grown crops.

It is recommended that for fall sowing, White Winter barley be used. For spring planting particularly under irrigation, Hannchen is recommended. Trials of Success barley also are recommended, as the variety that seems to have done especially well for some farmers. It is suggested that a few farmers might make variety trials of barley to determine those best suited to Jackson county conditions.

The 1924 agricultural conference recommended a 100 per cent increase in corn acreage, but this

has not been accomplished, according to the following census figures:

1924—	3410 acres
1930—	3822 acres
1934—	2167 acres of grain
	521 acres for other purposes

Acreage yields as shown by census figures are much lower than they should be, the 1934 production being 39,211 bushels on 2,167 acres, 18.1 bushels per acre. This would indicate a field for improved varieties and growing practices as climatic factors are believed favorable to higher yields.

It is recommended that growers increase their acreage due to some of the following favorable conditions:

Local markets have increased due to increase in chickens and turkeys.

Corn fits well into a good farming system, good rotation of crops, and cultivation controls weeds.

Corn provides a good crop to grow after breaking alfalfa sod, making good use of available fertility.

Corn requires less specialized machinery than other grains, and can be harvested with less hired labor.

Corn fits well into irrigation farming, requiring less water than alfalfa, thus allowing additional water supplies for alfalfa and pasture.

It also is recommended that seed treating be used on all seed.

It is recommended that where maturity is a factor, trials be made of Alberta Yellow Dent, seed being available locally.

On heavy soils, where securing a stand is a problem due to cold ground, pheasants and other factors, planting should be delayed slightly, allowing the soil to be worked and warmed up. Faster germination will cut down some of the hazard from pheasant damage.

Additional attention can be given by farmers to results of farmers who have been growing corn for a number of years.

There is a need and demand for improved sources of locally grown seed corn, and this possibility is indicated to a limited number of farmers who will follow this as a business from year to year.

Seed corn growers should pay particular attention to development seed by the crossed inbred method.

Commercial producers of corn for grain uses should give serious consideration to the support of the seed corn industry by purchasing their seed supplies annually from seed corn specialists. This procedure is being rapidly adopted in many of the larger seed corn producing states.

Corn growers may make trial uses of superphosphate as fertilizer on corn crops at the rate of 250 pounds per acre. More attention should be given to corn storage, and plans for a corn crib may be obtained through the county agent's office.

Jackson County Produces Own Alfalfa Seed

Alfalfa acreage has shown little change during the last 10 years, according to the census acreage given as follows:

1909—	11,168 acres
1919—	9,714 acres
1924—	21,438 acres
1929—	19,573 acres
1934—	19,651 acres

The alfalfa acreage should see little increase, which is in line with the local livestock requirement, as export markets are not available due to the alfalfa weevil quarantine. One of the principle problems of alfalfa producers in Jackson county is the control of this weevil and it is urged that state and federal experiment stations do specific work on a variety of practical control problems.

Many strains of alfalfa have been tried but none have equaled the so-called Jackson county common, seed being produced locally, and it is recommended that plantings in the future be of this

strain regardless of the price of competitive seed.

Attention of a good many Jackson county growers has been called to a new variety of alfalfa known as Ladak. Ladak alfalfa is a new variety and has been recommended for use on soils where sufficient moisture is not available for common alfalfa. It might be adapted for use on upland soils now producing grain hay but it is not recommended for use on the better alfalfa lands of Jackson county.

Oat and Vetch Hay Popular

As an annual crop for lands where alfalfa production is limited due to alfalfa weevil, and also on the wetter soil, the use of gray winter oats and common vetch is recommended. Plantings should be in the fall at the rate of 50 pounds of oats and 30 pounds of vetch per acre.

It is recommended that where vetch is planted for the first time the seed be inoculated and that fertilization with superphosphate—100 to 150 pounds per acre be used. For cover crop purposes common vetch at the rate of 50 pounds per acre or hairy vetch at 40 pounds per acre are recommended.

Trial Plantings Suggested

It is recommended that trial fall plantings be made of gray winter oats 50 pounds and Austrian winter peas 60 pounds.

Successful livestock production depends more upon good pastures than any other thing, no county ever progressing in livestock production without good pastures. Increases in livestock and general decrease in size of farms as shown by figures from the census indicate a demand for improved pastures with greater carrying capacity.

Under irrigation it is possible to have the best pastures, those that will carry two cows per acre for seven months probably bringing greater returns than any other general farm crop.

JACKSON COUNTY ACREAGE PERCENTAGE OF FARM LAND IN PASTURES

	1930		1935	
	Acres	% of Total	Acres	% of Total
Total land in county	1,788,160	100	1,788,160	100
All land in farms	288,371	16.1	303,493	17
Pasture land in farms ..	143,199	7.9	177,878	10
Plowable pasture land	15,924	0.9	16,548	0.8

Where irrigation is available every 10 days it is recommended that pasture plantings be made of Ladino clover 2 pounds, English rye grass 4 pounds, domestic rye grass 4 pounds, meadow fescue 2 pounds, and orchard grass 4 pounds per acre.

In cases where drainage is poor the use of meadow foxtail, 2 pounds in place of orchard grass is recommended.

For best yields pastures should be divided into two, and preferably three, fields and grazed in rotation, irrigating if possible after each grazing. Greatly increased yields are possible through rotation.

On lands that produce alfalfa without irrigation or on irrigated lands where irrigation water is scarce, the use of sweet clover for pasture is recommended. Seeding yellow sweet clover at the rate of six to eight pounds per acre will give excellent pasture returns. Sweet clover pastures should not be allowed to make a rank growth, and if livestock cannot keep it down, slipping it about six inches above the ground is advised. Rotation of sweet clover pastures also is advised.

Maintenance of Fertility Needed

It is recommended that higher producing pastures be fertilized annually with superphosphate at the rate of 250 pounds per acre. Top dressings with manure also are recommended at the time of seeding.

Hill Land Pastures Are Available

With but 17 per cent of the total area of the county in farms, and only 73,641 acres of land under cultivation, immense areas are now used for pasture. Other large areas of public domain also

are suited only for pasture. The use of winter blue grass on many of these hill lands has been proved a success, practical seedings made a number of years ago furnished this information. Other trial plantings made on a practical basis on nearby areas also have proven successful. Winter blue grass has excellent food value as shown by the following analysis: Hay—crude protein, 8.26; fat, 2.08. Seed—crude protein, 9.70; fat, 3.13.

This crop grows well in shade and has not hindered profitable timber reproduction when sown on burned areas. It is a perennial, reseeding itself excellently and also propagates from the bulblets.

Definite Program Is Suggested

These conclusions should be placed before the regional director of the soil conservation service of the department of agriculture and he should be asked that qualified representatives be sent to Jackson county to examine and study plantings already made. Serious fire hazards on privately owned property and public domain in Jackson county can be materially reduced by a proper brush control and grazing program. The securing of proper grass coverage on the hills conserves the moisture supply which would result in extending the availability of irrigation water. Proper cover also will prevent soil erosion. Proper brush control and grass development will materially improve conditions for wild life and stimulate the general recreational program now being so favorably considered as additional state resources.

Further trial plantings of winter blue grass and burr clover should be made on hill lands

in this area. The soil conservation service should be urged to extend these plantings into other sections of the Northwest as a soil conservation measure. The soil conservation service should be requested to consider the advisability of expanding plantings of winter blue grass in connection with any new program of soil conservation that might be adopted.

Seed Production Is Important

Alfalfa seed has been produced locally for many years and practical field tests over a period of years indicate that the so-called Jackson county common is well adapted to this and nearby counties.

Production is estimated as 35,000 pounds in 1934 and 15,000 pounds in 1935. The estimated average is about 20,000 pounds. Most of this seed is marketed locally and in nearby counties of southern Oregon and northern California.

Ladino clover seed might be produced on some of the irrigated lands of Jackson county where the crop is well adapted. Markets for this seed are expanding with favorable prices and it grows well under Jackson county climatic conditions.

Small amounts of Ladino clover seed have been produced for several years and production can well be expanded. Successful seed production is obtained on well drained land with good water supply for irrigation. Sixty days are required to produce a good crop, the balance of the production being used for pasture or hay.

Since Ladino clover planted alone will cause serious cases of bloat where pastured, it is recommended that plantings for seed include some grass seed which later can be cleaned out. For this purpose the use of such grasses as English rye grass, meadow fescue, meadow foxtail, and orchard grass is recommended, depending upon the type of soil and drainage. The use of timothy in mixtures for harvest-

ing as seed is discouraged because the seed is very difficult to remove from Ladino clover.

Winter blue grass seed production seems well adapted to Jackson county as it yields heavily. Because it is not so well known, it is recommended that seed production be expanded only as markets are established.

Many grasses and clover seeds are imported annually into the United States. It is urged that a study be made of these through nurseries to be established by the Oregon Agricultural Experiment Station and the county agent. Small trial plantings by growers to determine which strains may be adapted also can be helpful.

Potato Acreage Shows Decline

Potato acreage has steadily declined during the last 25 years until it is now only about 50 percent of what it was 25 years ago. Competition from larger potato producing sections has made it inadvisable to produce late potatoes for local markets.

It is recommended that only early potatoes for the local markets be grown for harvest from June 1 to October 1, producing them only on sandy river bottom soil. The recommended variety is Bliss Triumph, new varieties placed only on a trial basis.

Automobiles Aid Spread of Disease

In view of the fact that increases in automobile and truck travel have brought about distribution of many serious plant diseases and insects, and because producers of the State of Oregon are not amply protected from this menace, it is recommended that steps be taken by the department of agriculture of the State of Oregon to establish a system of quarantine inspection stations at the various entrances into the state. Senators and representatives going to the state legislature from Jackson county are urged to work for such a program. Farmers in other sections of Oregon now confronted with the same menace are asked

to assist in securing adoption of legislation by the 1937 legislature.

The grading of various horticultural and agricultural products has been of material benefit to the producers of Oregon and the state department of agriculture is commended for the work it has done along this line. Further expansion of grading regulations is suggested to cover various agricultural commodities, thus preventing the importation of low grade articles into the state that seriously compete with and interfere with the production of similar high grade articles produced in Oregon and Jackson county.

Weed Control Vital

Attention of the state department of agriculture is asked in studying the menace to the farm-

ers of Oregon by the introduction of serious weeds, not now known to this state, through the importation of low grade and improperly cleaned grains from nearby areas. The department is urged to take steps to immediately prevent the introduction of such weeds as star thistle and others by strict inspection.

There is a possibility of the introduction of puncture vine from California both by automobile and rail. Wild morning glory is becoming established on some of the farms in Jackson county and it should be eradicated before it gains a serious foothold. It may be controlled by spraying with sodium chlorate at the rate of three pounds per square rod. Special instructions for use of this chemical should be secured from the county agent.

REPORT OF TURKEY COMMITTEE

Oregon produces approximately 700,000 turkeys, about two thirds of all turkeys raised being exported to markets outside the state. The gross return for market turkeys raised in Oregon for 1935 was in excess of \$2,000,000.

Turkey growers have in recent years adopted modern methods of incubation, brooding, and rearing in semi-confinement. Turkeys from hatching to market age are fed balanced, growth promoting, and finishing feeds, the adoption of these practices making mass production a common farm practice. The trend is toward large commercial flocks in the hands of fewer operators and a decline in number of range reared birds.

The ready sale of day-old poults has stimulated the expansion of commercial hatcheries and the demand for hatching eggs has resulted in many farms maintaining mated flocks for egg production.

Disease factors drove the turkey industry westward in search of new and clean range land, the far western states under natural methods of rearing, for years

holding a distinct advantage. As other states also have adopted artificial methods of mass production, Oregon's turkey industry must prepare to face increased competition from those areas closer to the terminal markets.

Turkey breeding houses, artificial lights, selecting breeders for early maturity, and northern and eastern hatcheries contracting southern winter hatching eggs for early poults are factors which result in an increasing number of early turkeys being marketed each summer and fall. These birds come on the market before a price has been established and before the cold storage holdings have been consumed. The industry rapidly is losing its speculative possibilities and is becoming a marginal business of narrower profit per pound of meat.

The turkey crop of 1935 had a most favorable ratio between feed cost and turkey meat prices and as a result of this favorable year, the general trend toward expansion indicates the possibility that the number raised soon may exceed that which the per capita

rate of consumption will absorb at fair prices to the growers. The United States turkey crop increased from 14,800,000 birds in 1927 to 18,740,000 in 1934 and a decided trend toward further expansion exists for 1936.

Oregon turkey growers have the advantages of experience, reasonably priced feeds, climate and green feeds, foundation breeding flocks, and both independent and cooperative outlets for their product. During this period of general expansion, growers of the state must recognize the fact that they are engaged in a highly competitive business in which a survival of the fittest, individuals or districts, ultimately will adjust the industry.

Turkey Industry Expands in Jackson

During the past few years the turkey industry of Jackson county has expanded. In addition to the production of market turkeys, hatcheries and breeding farms have been established which supply poult, hatching eggs, and breeding stock to many parts of the nation. A surplus is produced of approximately 60,000 market turkeys which must be marketed outside of the county and state as a part of the export crop of the state. Turkeys return a gross income to the producers of Jackson county of about a quarter of a million dollars.

The depression aided by the great drouth in the midwest reduced the number of chickens and turkeys. The same causes, aided by agricultural adjustment, resulted in reduced supplies of pork and other meats. Turkey growers who plan great expansion for 1936 must recognize the fact that their product will have to compete against an increased supply of chickens, turkeys and other meats. Only an improved consumers' demand can prevent a depressing effect on prices in 1936 if growers throughout the nation even partly carry out their plans for expansion.

Turkey production is an agri-

cultural crop for which this county is well adapted and in keeping with general economic conditions should be encouraged; but not exploited.

Numerous Market Outlets

Growers have a choice of marketing their turkeys through established produce firms or established cooperative marketing associations.

Producers also may purchase feeds either from established feed companies or through local and state cooperatives.

The existence of both methods of marketing and purchasing of feeds is a great factor in stabilizing the industry in the county, protecting the investments of all growers.

The turkey business is a short term business, during periods of good prices many rushing into it, and during periods of low prices there is the general exodus of marginal operators. The cycle of both high and low prices is short and the business adjusts itself more quickly than many long term agricultural enterprises.

In addition to a careful study of economic conditions affecting the industry, the successful grower must fortify his business with proven management practices; knowledge of disease control, overcoming known hazards, studying his cost of producing a pound of turkey meat, and establishing ample credit. The grower who can keep his poult losses low and his feed costs also low will be able to remain in the turkey business over a period of low prices.

Care Needed in Selecting Stock

Breeding stock should be selected early in the fall and kept separated from the market flock during the fattening periods, roughed through the winter on bulky feeds. The breeding stock should be given a breeders' mash and grain from early January throughout the breeding season. As a safeguard against blackhead and intestinal parasite losses turkeys should not be reared or ranged with chickens or on ground recently used as a chicken

range. Turkey eggs should not be incubated in same incubator with chicken eggs.

The cost of producing turkeys can be materially reduced by providing succulent green feed during the growing period. Turkeys are great consumers of roughage in this form. In addition to rape, alfalfa, and clover, row crops such as corn or sun flowers should be provided for both green feed and shade on farms where natural shade is not available. Cull pears do not provide a profitable source of succulent feed.

Market prices on turkeys are depressed each year through poorly finished birds. No turkeys should be killed for market until they are properly finished in both flesh and feathering. It is recommended that growers sell to cash buyers or local cooperations rather than ship on commission.

Ample credit is necessary to properly grow out a band of quality turkeys, beginners too often thinking in terms of profit rather than costs. Growers should provide finances or credit to the extent of the cost of one sack of feed for each turkey to be marketed.

Credit when extended by commercial concerns to the extent of furnishing brooder houses, brooders, fuel, poult, feed and supplies to new beginners is unfair competition against established growers and results in exploiting an industry to the detriment of all. It is urged that a general credit policy be established of extending credit only to growers who can finance their turkeys to eight weeks of age or older.

There are disease hazards which growers must consider. The most common ones are fowl-pox, roup, pullorum, mycosis and coccidiosis. Each of these hazards can be controlled with a minimum of loss to the grower. Growers are urged to protect their investments by having an authentic diagnosis made of disease outbreaks as early as possible.

Turkey stealing is a growing hazard against which producers must protect themselves. A movement is now under way by the growers to do the following:

Make turkey stealing a felony.

Require all dealers to display a record of brands registered in the state. The present law requires a dealer to record the number of each brand of turkeys purchased. If enforced, this should aid the grower in tracing and claiming stolen fowls.

Publish annually a booklet of all registered poultry brands and distribute to every peace officer in the state.

Growers purchasing branded birds from breeders would get from each breeder a bill of sale so he could later present it when selling turkeys having a different brand number than his own.

The use of the semi-scalding method of dressing turkeys as an individual farm enterprise, except for immediate consumption, is not advised because of the danger of developing a rancid flavor when proper cold storage facilities are not available.

A small number of growers have threatened the security of the turkey industry by carelessly feeding large quantities of cod liver oil and low grade fish products in fattening their turkeys. Turkeys, thus fed, naturally carry an objectionable fishy flavor when served by the consumer. Such methods of feeding should be discontinued a month before turkeys are marketed.

It is recommended that the present law relating to the disposition of the dog tax license money be amended to provide indemnity for turkeys destroyed by killer dogs.

It is recommended that all turkeys be government graded to improve quality and to standardize packed birds.

A greater use of home grown grains and locally mixed feeds in accordance with a reliable formula for turkey feeding is recommended.

REPORT OF POULTRY COMMITTEE

Oregon produces a surplus of eggs above the needs of state consumption, the surplus being exported to distant markets, principally on the Atlantic seaboard and California. The major part of the commercial egg industry lies in the counties west of the Cascades, and surplus eggs of Oregon must be of high quality to meet competition from other districts and to justify transportation costs to distant markets.

Southern Oregon is well adapted to commercial egg farming, the extent to which the industry will increase depending upon the progress farmers make in shaping their production to meet requirements of outside markets.

The industry has weathered the storm of depression in a creditable manner, expanding in Oregon as well as other parts of the country. Oregon eggs are meeting keen competition from sections near its eastern market centers and if the state preserves its present market outlets, or develops a real industry for which many districts are particularly well adapted, many small farm flocks must be changed into better business units.

Jackson County Poultry Production Fluctuates

The poultry industry of Jackson county cannot be considered a unit in itself but in relation to the status of the entire industry. The county produces a surplus of eggs part of the year which as a contribution to a state surplus must be marketed outside of the county and state.

The 1930 census for the county shows 2214 farms; 1676 or 76 percent of these farms keeping poultry. There were 1167 farms or 69 percent that kept home table flocks of less than 50 hens from which few eggs entered trade channels; 437 farms or 26 percent kept flocks that varied from 50 hens to 200. These units were too large for home needs

and too small for profitable commercial management. Seventy-two farms, or 5 percent of all farms keeping poultry had hens in production to meet market demands. There is a need for adjustment of farm units and poultry will form a part of many of these new farm programs if the farmers shape their production to meet market demands.

The 1930 census credits Jackson county with producing \$397,128 in chickens and eggs. The 1935 census shows an increase of 687 farms over the 1930 census figures for a total of 2901.

Producers of commercial eggs in Jackson county can best sell to local retailers and independent produce dealers, the small volume of commercial eggs and large number of small flocks not justifying operation of a local cooperative egg association. Low and fluctuating price levels locally would be improved if sufficient volume of quality eggs were produced to justify a tie-up with the Pacific Cooperative Poultry Producers' Association, the nearest plant being located at Roseburg.

The large cooperatives of Oregon, Washington, and California maintain, as one unit, their own sales headquarters in eastern cities and stabilize the industry in the sections served. The poultry industry in Jackson county has fluctuated for several years, lacking a stabilizing influence, and is not a well organized or permanent industry for which the county is well adapted.

In the purchase of feeds and poultry supplies, growers must buy from independent feed dealers as there is no competitive, stabilizing influence of cooperative feed distribution that is found in many sections of the state.

The export demand is for white shelled eggs, resulting in the leg-horn and other white egg breeds dominating the western poultry situation. This should not mean

the exclusion of heavy, brown shelled egg breeds such as Rocks or Reds.

The demand for well managed breeding flocks to supply hatcheries in and outside the state, may be considered an additional market outlet by many farms. The premium paid for good hatching eggs should be higher than the price generally paid throughout the hatchery districts of Oregon. Heavy breeds for the production of capons and dressed poultry also affords an opportunity for a limited number of farms.

Oregon Low Producing State

Oregon produces only 1 per cent of the nation's poultry products so it has little voice in setting prices. Producers in Jackson county operate on a margin between New York prices minus the overhead of delivering eggs of certain grade to outside markets.

The industry here and throughout the nation will expand in all phases throughout 1936 as a result of favorable prices in 1935. The increased number of pullets next likely will have a depressing price effect which may be partly offset by an increased consumer demand. Egg consumption has declined since 1932, but higher prevailing meat prices may tend to place eggs in a more favorable position.

As a result of better egg prices in the United States and a favorable foreign rate of exchange, the imports of dried, frozen and shell eggs increased rapidly during 1935. The tariff on foreign eggs was sufficient during the years of low prices and normal exchange conditions, but efforts to remedy the foreign egg import situation by means of an excise tax law have failed. The imports for 1935 were in excess of 15,000,000 dozen shell egg equivalents.

The poultry production as a planned farm enterprise in Jackson county is sound business. Several of the 687 new farms, rehabilitation, resettlement and subsistence farms will keep poultry.

If local expansion is toward barnyard flocks rather than those large enough to justify commercial care, competition cannot be met successfully. Ninety-five per cent of the farmers who keep chickens in Jackson county have less than 200 hens, these flocks being too small to justify frequent gathering, proper farm storage facilities, frequent deliveries in case lots and other factors necessary to a profitable industry.

The outlook of the industry depends largely upon a basic breeding program for the industry and whether the farmers who keep poultry make a reasonable effort to adjust their poultry units to meet the quality demands that prevail. No dealer or cooperative agency can put quality in an egg after it reaches their candlers.

Size of Flock Is Important

Farms desiring small home table flocks, from which eggs do not enter trade channels should keep two dozen hens or less.

The farm that plans a sideline cash income from poultry, from which eggs will go into trade channels, should keep a flock of not less than 400 to 500 hens.

When the major source of income is from poultry the farmer should develop a business unit of approximately 2,000 hens as soon as experience and capital justified.

For a well rounded, specialized poultry farm program, operated under natural conditions of ranging young stock, an acreage of 10 to 20 acres is recommended. Less acreage is needed for artificial confinement. Rearing under the latter conditions is successful for a few but they are not given general endorsement for all.

It is recommended that 50 to 60 per cent of the laying flock be replaced each year with pullets.

In purchasing day-old chicks caution should be observed to see that they are from pullorum free parent stock when possible; or from accurately blood tested parent stock with all reactors

removed.

Chicks under average farm conditions should be hatched early, February, March, and April being the three months when the majority of Jackson county chicks are purchased.

There are two types of brooder houses in general use by those in the industry, each designed to overcome losses from soil contamination according to farm conditions involved:

The permanent brooder house, equipped with artificial yards such as wire, concrete, or board floor. (See county agent for Extension Bulletin 451.)

The portable brooder house equipped with skids for moving to clean soil. (Extension Bulletin 446.) The permanent brooder house is in general use throughout commercial regions because of less labor overhead.

Shelter houses closed on three sides are recommended for young stock on the range. (Extension Bulletin 442).

Green feed should be provided throughout the growing period and fed liberally until the pullets are in production when it may be reduced in the interests of avoiding too dark yolk color. Kale or alfalfa are the main green feed crops with carrots supplying winter succulence.

The greatest economic loss to the poultry grower is loss in quality of the eggs on the farm after they are laid and before

they reach the grader's candle. "How to Construct an Insulated Egg Room" is found in Extension Bulletin 445.

Extremes of temperature have shown that laying fowls do better in partly insulated houses. Plans for this type of house and others as well will be found in Extension Bulletin 480.

More capital is required to develop a safe poultry enterprise than the amateur anticipates. Exclusive of land and the home, where the laying house is used for brooding, a first year investment of approximately \$2.50 to \$3.00 per pullet before she starts production will be necessary. This expenditure when pro-rated will include cost of brooder, fuel, feed, litter, cost of chicks, mortality losses, houses and equipment. A well defined plan should be followed because of many hazards involved.

The Breeder and Hatchery Code was thrown out when NRA was declared unconstitutional. The provisions of the code which related to false, misleading advertising and unfair trade practices were copied from a poultry trade agreement previously made with the Federal Trade Commission. They still are in force and anyone damaged through false advertising or unfair poultry industry practices is advised to file his complaint with Oregon's forwarding agency, the Oregon Branch of the International Baby Chick Association.

REPORT OF AGRICULTURAL ECONOMICS COMMITTEE

The agricultural economics committee discussed four economic topics which are believed to be of importance to the future welfare of Jackson county agriculture. They are:

Land utilization.

Farm credit.

Farm taxation.

Farm marketing.

Jackson county contains 1,781,031 acres of land of which

only 99,692 acres are used for crops or are plowable pasture lands. Of the remainder 203,801 acres are unimproved land in farms, 544,179 acres are unimproved lands in various public ownerships. Some of these unimproved lands support good stands of timber, but there are many acres of brush land and open range which are sparsely grazed and now of little value for any

purpose. It is believed that the establishment of a grass crop on such areas is a pressing need. It is believed that a good grass cover on these lands would:

Provide needed pasture for livestock.

Increase the wildlife population.

Prevent soil erosion.

Conserve rainfall by reducing runoff and thereby serve to maintain stream flows during the summer.

Add to the scenic values of Jackson county.

Land Needs Clearing

All brushy areas of little potential value for timber production should be burned and seeded to grass as rapidly as possible.

Present open lands which are not now well grassed also might be seeded.

All cut over timber land should be seeded promptly after burning.

It is realized that the above program may conflict with existing fire laws, and it is recommended that state forestry officials be contacted by interested groups in order that the welfare of farm and forestry groups may be more closely correlated.

In connection with these recommendations mention is made of the demonstrated value of winter blue grass for such seeding.

While Jackson county contains large areas of excellent agricultural soils there also is considerable land which is sub-marginal for agricultural purposes. Uninformed settlers or those with limited cash frequently settle on such lands and try to eke out a living. Such settlers usually obtain school and road facilities at the expense of tax payers located in more favorable areas, and not infrequently also require aid from the relief funds. It is believed that settlement in such areas is detrimental to the welfare of the county and is of little or no value to the settler. It is recommended, therefore, that local, state, or federal agencies be requested to classify the lands of

Jackson county and segregate the agricultural from the non-agricultural lands. Following this classification it is further recommended that the state legislature grant the county court authority to zone non-agricultural areas against further settlement for agricultural purposes.

During the past 15 years there has been a decided tendency toward increasing the number of small farms in Jackson county. The largest increase has occurred in farms containing less than 10 acres. Except under very unusual circumstances is a minimum full time farm unit 10 acres of improved land with adequate irrigation water. Such a unit is suitable only where intensive production such as fruit, vegetables, berries or commercial poultry is followed. If dairying or other more extensive types of farming are followed, additional land will be needed to provide an adequate income. The acreage requirements for a part-time farm will vary with the amount of off farm employment available. Usually these part-time farms should contain only such land as can be adequately worked in connection with the outside employment. Also care should be taken to avoid extension expenditure for tools and equipment. Sometimes part-time farmers have an equipment investment adequate for a full time farm.

In connection with the further subdivision of Jackson county farm lands, such subdivision increases the amount of irrigation water required. It is believed that the present water supplies are likely to control the feasibility of extending this present trend. Prospective buyers and those planning subdivision should consider carefully the water supply available on small tracts and make sure that it is adequate for the type of farming which must be followed if such farms are to be successful.

Complete agricultural development of this portion of the Rogue River valley is directly dependent on additional water supplies and

it is recommended that all agencies concerned with the welfare of the county consider carefully the possibilities of securing this needed water, and actively prosecute such plans as they believe to be best.

After considering the present and possible areas of farm land in Jackson county, together with factors which are likely to promote or retard their uses, the opinion has been reached whereby it is believed the following trends are likely to take place during the next few years.

On the shallower and heavier soils that are subject to moderate water costs an increase in irrigated pasture and dairying is probable. This increase will be controlled largely by the availability of local supplies of hay and grain feed.

Little or no change is expected in the pear acreage located on the better soil areas, but some orchards on the shallower soils may be replaced by vegetables, bulbs, tomatoes, onions or similar crops if demand for these products continues, and if sufficient irrigation water is available.

Owing to the tendency toward subdivision of present farms into smaller units, some increase in bulbs, berries, vegetables, tomatoes, and onions occur. This production is likely even if demand is weak and prices are comparatively low. Availability of water probably will be the chief controlling factor.

Some increase in the production of grass and legume seeds may occur on irrigated and non-irrigated lands now devoted to hay and grain, but no pronounced shift in this direction is likely owing to the prospective demand for feed for dairy cows.

Present Farm Credit Believed Adequate

Jackson county farmers have adequate credit facilities available. Long term mortgage credit is available from the Farm Credit Administration, with offices at Spokane, Washington. Short term credit is available from local

banks, the Medford Production Credit Association, and the rehabilitation division of the resettlement administration. The latter agency loans only to farmers who cannot obtain commercial credit, but who can provide a repayment plan showing a feasible plan of liquidation for all funds advanced. Interest rates are now the most favorable in the history of agricultural credit, and it does not appear likely that they will return to former high levels for some time.

Prices during 1935 were somewhat higher than during 1934, and it appears that this upward trend is likely to continue during 1936. It is believed that farmers in Jackson county are now liquidating their past indebtedness and it is recommended that this be continued as rapidly as income will permit. Further expansion at this time is not recommended unless such expansion will promote better land use, or develop the farm into a sound economic unit.

In many instances the selling price of farm property is not closely related to its value as a producing unit. In all instances where loans are sought on such property, and where payments must be made from farm income, it is urged that these loans be made only on the productive capacity of the farm. Moreover it is recommended that payments be amortized over a sufficient period of time so that payment will not require an unduly high proportion of the normal annual income.

It is believed that short time credit payable within the year should never exceed half of the anticipated gross income, and preferably should be much less in order that cash costs of production and living expense will remain after paying the loan.

After this information is obtained the prospective purchaser is in a position to measure the selling price in relation to productive capacity and to measure the credit carrying capacity of the land. Purchasers of part-

time farms should consider not only the productive capacity of the farm they intend to buy but should also carefully appraise the permanency of the supplemental employment on which they will be largely dependent for cash income.

Real Property Tax Heavy

The present system of real estate taxation is entirely too burdensome to the farmer and as a

general condition a greater portion of the farmers' net income is taken for taxes than for any other large group of citizens. The State legislature is urged to cooperate with farmers to the extent of setting up a commission of informed persons to study farm tax problems and develop an equitable system of taxation that will relieve real property of its present excessive burden.

REPORT OF TRUCK CROPS AND SMALL FRUITS COMMITTEE

The truck crops and small fruits committee submitted the following recommendations for these enterprises in Jackson county.

Maintain enough strawberry acreage to supply the local markets. Expansion to provide surplus for shipment is not warranted.

While Youngberries and other similar small fruits do well here, sufficient quantity is grown to supply local demand and no further expansion is desirable.

A limited acreage of new berries, such as Boysenberry, should be planted to determine their adaptability to local conditions. Expansion of the raspberry and gooseberry acreage is not recommended.

Some state wide form of control program for the truck crop industry.

The practice of stores cutting the price to consumers below the price paid the growers is ruinous to market stability. The merchants should agree not to use agricultural produce as "leaders" and to refuse to sell produce below the cost of production. An association of growers should be organized to combat this practice.

An additional inspector to be stationed in Jackson county is requested. Produce on the market should be more closely inspected as to grade and quality.

Several growers should be appointed to determine the acreage of the leading vegetable crops in

their districts. This should be done soon after spring planting, and the figures turned in to the county agent who in turn would compile them and send to all growers interested.

A few small lots of onions should be shipped in crates to eastern markets to test shipping qualities of Jackson county onions.

A small amount of excellent onion seed already has been produced here, it seems logical that at least enough onion seed could be produced to supply the local needs. If this proves successful, other outlets may be developed.

For the successful production of truck crops, heavy fertilization is essential. Barnyard manure is unsurpassed but cannot always be obtained. Sulphate of ammonia and phosphate are the most commonly needed commercial fertilizers. Each grower must determine by experience, which fertilizer his particular soil requires.

Enough root crops, cabbage and other miscellaneous vegetables should be produced to supply local markets. Their production for outside markets is a gamble.

Tomato production for canning purposes should be limited to Indiana Canner and Bonney Best. Limited amounts of other promising varieties should be tried to determine their adaptability to local conditions. Production for shipping purposes is not recommended.