

LIVESTOCK

An Appraisal of the Problems and
a Statement of Recommendations

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One of 12 committee reports prepared by representative producers in cooperation with staff members of Oregon State College and other agencies. Adopted at the statewide agricultural conference March 27-29, 1952.

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August 1952

Federal Cooperative Extension Service
Oregon State College
Corvallis

Foreword

A State Agricultural Conference was held at Oregon State College on March 27, 28, and 29, 1952, at which reports of 12 major committees were discussed and approved at public forum sessions. This publication contains the report of one of those 12 committees. Reports of the 12 committees are to be issued in the following publications :

Agricultural Relations	Oregon Agriculture 10
Dairy	Oregon Agriculture 11
Farm Crops	Oregon Agriculture 12
Farm Forestry	Oregon Agriculture 13
Fur Farming	Oregon Agriculture 14
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The purpose of this state-wide conference was to take stock of the present situation in the agriculture and rural life of the state and to indicate probable trends and desirable developments over a period of years ahead. Members of the 12 committees were private citizens who were invited by the Extension Service to participate in this activity and who willingly donated their time and paid their own expenses to take part in a series of committee meetings during the year preceding the conference. It is felt that these reports contain the considered judgment of a representative group of citizens who carefully studied available facts in arriving at the recommendations presented. They are being published by Oregon State College as a public service for use by individuals and groups who may wish to consider these facts in planning their own future activities.

Statistical data have been checked by Extension Specialists in Agricultural Economics Information and are based on the most recent available reports of the U. S. Department of Agriculture, U. S. Department of Commerce and other sources deemed reliable.

F. L. BALLARD
Associate Director

Summary

The Livestock Committee divided into four subcommittees for the purpose of preparing this report. The four subcommittees and chairman of each were: Beef Cattle, Larry Williams, Canyon City; Sheep and Angora Goats, Claude Steusloff, Salem; Swine, Glen Hawkins, Shedd; and Rabbits, Ernest Rudisill, Corvallis. These committees considered livestock production since the 1924 conference. They also gave consideration to the changes that have taken place and the things that have been accomplished during that period.

Several important changes have occurred. First was the increase in total cattle numbers in the state. Another change was the establishment of the Taylor Grazing Service, now the Bureau of Land Management, to administer the unappropriated lands of eastern Oregon. This placed these lands under control and has improved grazing conditions for range livestock. Another significant change has been the increase in the acreage of improved pastures which has increased carrying capacities.

Sheep numbers in the state decreased about 60 per cent from 1923-29 to 1950. Swine production has decreased during the same period. Oregon produces at present about 50 per cent of the pork consumed in the state.

Better livestock management practices have been inaugurated in all sections of the state.

The introduction of more beef cattle in western Oregon has been rather outstanding. Sheep numbers in that part of the state have mostly held their own while numbers in eastern Oregon have decreased. At the present time there are approximately as many sheep in western Oregon as in eastern Oregon.

Following are some of the recommendations made by the livestock committee:

1. Stronger emphasis by research and extension on the development and demonstration of new grasses which would include costs and the varieties suited to the various types of soil.
2. Research in winter feeding rations for pregnant animals under eastern Oregon conditions.
3. The gathering of information on production costs in connection with the different classes of livestock operation.
4. That each branch experiment station in the state be serviced by a committee of producers to work with the department heads and branch station personnel in outlining research work needed to serve the best interests of production in the area.

5. That more experimental work be carried on and information extended regarding the use of byproducts, such as cannery wastes, with particular emphasis on feeding methods and costs.
6. Further experimental work on livestock disease control and prevention including such diseases as anaplasmosis, white muscling, urinary calculi, round worms, and cattle grub.
7. The continuation of adequate and workable progeny testing programs for all classes of livestock.
8. Inasmuch as Oregon produces a large amount of offgrade wool there is an opportunity for research and education to improve production and marketing methods.
9. That Oregon State College organize short courses to be held regularly for producers of the state.
10. That the college study the possibility of marketing livestock on grade and yield basis.
11. That increased emphasis be placed on swine management, and methods for more economical production.
12. In view of the importance of rabbits as a meat-producing animal and the possibility of its expansion as a "backyard" enterprise, more attention should be given to this source of meat supply. A doe weighing 10 pounds should produce approximately 100 pounds of live rabbit or 50 pounds of meat per year.
13. A study of market outlets, breeding program, costs of production and the use of rabbits on the "part-time" farms in the Willamette Valley.

Livestock Committee Report

1952 Agricultural Conference

March 27, 28, and 29, Corvallis, Oregon

Introduction

The livestock report covers statements and recommendations regarding production in Oregon. Changes in production practices and suggestions made as to the thinking on future plans are submitted.

A significant change since 1924 is the reduction in sheep and swine and increase in beef cattle in the state. Also of importance has been the improvement in pasture and forage production. Perhaps the most outstanding phase is the strengthening of markets on the Pacific Coast for livestock products due to the increase in human population.

Since 1924 the vast public domain has been placed under control grazing. This and the reduction of grazing permits on the U. S. Forests has reduced the number of animal units allowed on these lands. To partially offset this reduction there has been an increase in carrying capacity on the crop lands through the improvement in forage production.

Better management practices put into effect since 1924 have resulted in increased percentage of calves and lambs saved on farms and ranches of the state. These and other changes have been considered by the committee in the preparation of this report.

History

Total livestock in Oregon during the 1923-29 period averaged 759,000 cattle, 2,151,000 sheep, and 245,000 swine. Since that time the number of cattle has increased steadily, the number of sheep has decreased, and the number of swine has fluctuated until we now have 1,228,000 cattle, 686,000 sheep, and 180,000 swine.

From a feed consumption standpoint, total animal units in the state have decreased from 1,157,000 in 1920 to 1,073,000 in 1950. In addition to the decreases in sheep and swine the draft horses have almost been removed from the picture. Part of the unused range due to this reduction has been utilized by beef cattle. Higher return for beef as well as other factors has been responsible for the

increase in beef cattle numbers. Beef cattle consumed 43.3 per cent of feed consumed in 1950 compared to 27.3 per cent in 1920. More than 80 per cent of the beef cattle in Oregon at present are produced east of the Cascades.

Range

Only 42 per cent of Oregon's total land area is in private ownership. Thirty-eight per cent of the private land is used for grazing. The public domain which includes Department of Interior land and revested lands make up 25.8 per cent of the state's total acreage. The National Forest and other federal reservations account for an additional 25 per cent. State and county lands account for about 4 per cent of the state's total acreage. Approximately three-fourths of the land in the state is suited only for livestock grazing. During the past 25 years grazing allotments on both U. S. Forest lands and public domain have been greatly reduced. In the case of the Forest lands this has been for several reasons. Range sheep have decreased, because of economic factors. In a few instances, perhaps, the cuts might have been unjust. There has been increasing pressure from other multiple use agents, the most irrefutable of which is watershed protection; some cuts were made by the administrators to bring cattle and sheep numbers in line with carrying capacity because of burning and encroachment of brush. An important factor has been the administrative procedure set up by statute in which the funds received from grazing fees are turned into the general fund of the U. S. Treasury instead of being used to improve or at least maintain the vital natural resource of grass.

Twenty-five years ago, grazing on the public domain was not under control and was free to stockmen from within or without the state for unlimited grazing use. Because of this situation there was misuse of these grazing lands, and in places much of the desirable forage cover was impaired or destroyed through overgrazing. These lands have since been placed under control—first under the Taylor Grazing Service and later under the Bureau of Land Management. Through the organization of grazing allotments and improved management practices, reseeding, water development, fencing, blocking for better management, and so forth, grazing conditions have improved on these lands. In this transition there has been an attempt to balance the numbers of cattle and sheep permitted on these lands with the actual carrying capacity.

Improved pastures on farms

In 1920-24 most of the pastures on crop land acres were native grasses with a comparatively low carrying capacity. Since then

newer grasses have been introduced and old grasses improved on both irrigated and nonirrigated lands. It is estimated that the carrying capacity on these acres has been doubled. Irrigated cropland pastures have increased greatly during this period.

Hay production

The hay acreage in Oregon has been reduced in the past 30 years. In 1919 the census reported 1,229,404 acres harvested. In 1950 harvested acreage totaled 1,026,000, according to estimates. There is at present a heavy movement of eastern Oregon alfalfa hay to western Oregon markets. This is due to the shortage of legume hay for dairy cows and sheep in western Oregon. During certain seasons this situation creates keen competition for hay for eastern Oregon livestock operations. The making of grass silage as a means of preserving food nutrients is an important development. This offers an opportunity of storing the taller grass that needs to be clipped from the pastures during the flush growth—as well as making a higher quality feed than is possible in trying to cut it for hay during unfavorable weather. Drainage of many acres in eastern Oregon to improve grass species and increase production has helped some.

Deer and elk

Big game animals have increased during the last 25 years to the extent that they offer serious competition with livestock for grass and forage on the ranges of the state especially during the critical periods of spring and winter. This is even more serious when we recognize that upwards of 60 per cent of the big game graze on private land during these periods. In the past when there was no problem there was little or no contact between the game administrators and the livestock operators. As the problems became acute and the situation was new to both groups, there was much misunderstanding, but there is a high degree of cooperation in most instances now between the two groups.

Production program

The eastern Oregon production program has been to operate a home ranch for hay production and for spring and fall grazing. The cattle and sheep have been summered on higher ranges on both private and publicly owned lands.

One ton of hay has been considered the average annual requirement for wintering cattle with some sections needing more and some less. The feed lot picture in the state has seen us utilize cull potatoes, sugar beet byproducts, and feed grains when the price ratio permitted.

It is a credit, among other factors, to the Extension Service and Central Station at Oregon State College that we have improved our management practices remarkably during the past 25 years, having met and passed several goals which have been set up from time to time. An instance of this is the 400 to 500 pound weaner calves that in the past were aimed toward and which have become a reality and in like manner the feeder lamb weights have increased. More care is now used than in the past in the selection of both males and females. In the case of cattle this has been greatly facilitated by the bull and cow grading program which Oregon State College has developed and extended throughout the state. Now, most cattlemen desire quality in their cattle as well as quantity.

The cattlemen have come to follow the practice of calving their heifers as two year olds and some sheepmen are experimenting with breeding ewe lambs. This requires a more intensive feeding program than when cows are calved at an older age, but a higher total meat production during the life of the cow is obtained. Livestock operators have determined the importance of size for age and rate of gain yardstick is being more and more accepted as a necessary factor among the industry.

The production pattern in western Oregon has centered around the purchase of feeder steers to be fattened on grass and marketed in the fall, and with the small farm flock. Another type of operation has been to purchase bred cows during the spring months, calve them out and sell both cow and calf in the fall. These two practices eliminate expensive winter feeding. Under limited conditions, breeding herds have been carried, wintered on aftermath from seed acreages or on grass silage.

Much successful work has been done in the past on the feeding of wheat to livestock, but the government support price has taken it out of the picture at the present. Even without government support the possibility for more profitable outlets such as foreign trade make it an undependable source of livestock feed. This high cost of feed grains is mainly responsible for the present low swine population in the state.

With the increase of canneries throughout the state and the planting of peas in Umatilla County, it is estimated that there are 110,000 tons of cannery waste and 100,000 tons of pea vines available.

Disease

Some diseases rampant 25 years ago have come under almost complete control, while others almost unheard of in Oregon at that time are now a threat because of large interstate shipments of cattle

and a more concentrated cattle population. Still others were with us then to a degree and still are here to a lesser or greater extent. Much has been accomplished by the College, among other agencies, in determining how to cope with such diseases as lumpy-jaw, coccidiosis, scours, bloat, pink-eye, and hoof rot and while the industry suffers losses from these diseases, the Extension Service has taught how to keep them to a minimum. External and internal parasites in all types of livestock have been a severe problem.

Blackleg, shipping fever, and malignant edema have caused severe losses, but first one and then the other has come under practical control through vaccination until at the present time it is possible to vaccinate for all three with one dose. Liver fluke has been an uncontrolled problem throughout the entire period. Anthrax and red water are two very serious diseases which have made their appearance in Oregon.

Urinary calculi, grubs, and a condition called white muscling have become noticed as causing large losses throughout the state and little or no progress has been made in their control.

Brucellosis was prevalent in Oregon 25 years ago but control work was being done only in a few representative herds. Methods of control were being studied and the herds used were mostly experimental herds. A survey of the disease in one of the most important dairy communities in the state revealed that 50 per cent of the cows in the main dairy communities were infected, and a substantial, but smaller, percentage of the beef cows were undoubtedly infected. Infection has been present in swine to an unknown degree.

Stringent test and slaughter programs in parts of the state, with application of the program where practical throughout the state, made large inroads on the disease. It was found, however, that to make one herd completely clean and leave other herds infected was unworkable because the clean herd soon became reinfected. To clean up the state completely by test and slaughter was impossible because of the type of livestock operation in parts of the range areas, and the lack of veterinarians to do the testing. A practical basis of control for brucellosis in the recent past was deterred by the reluctance, for so long a time, on the part of Oregon State College to recognize the attributes of Strain 19 vaccine, but after being proved by many operators throughout the state as well as at the Squaw Butte Experiment Station, it has been used in increasing amounts in many parts of the state.

At the present time on a statewide basis tests show that less than 2 per cent of the animals tested are reactors.

The situation as regards tuberculosis 25 years ago was somewhat different from brucellosis inasmuch as the public had been pretty well educated as to the danger to public health of this disease and it was recognized as a threat by the livestock industry. The first county in the state was freed of this disease 25 years ago and was soon followed by other counties and to date the state is a relatively free area, having less than one-half of 1 per cent reactors.

Anaplasmosis undoubtedly existed 25 years ago, although reports are not available as to the extent of the disease at that time, and even today there is no yardstick to measure the disease incidence and most certainly it is a serious menace to the industry. Little experimental work has been done with this disease in this state, and therefore, no accomplishments have been made as to its control. The present situation indicates that this disease is still spreading but we do not even know what vectors are responsible for the spread.

One of the biggest advancements in the disease control field in Oregon was the establishment of a diagnostic laboratory through the cooperation of the College and the State Department of Agriculture and which will soon be operating at the College.

Marketing

Beef cattle were marketed in 1925 at much older ages and at much heavier weights than at the present time. In the recent past we have seen the demand for slaughter carcasses shift from one size to another in a very short time. At present the demand in Oregon is mostly for the U. S. Commercial and U. S. Good grades while in California it is for the U. S. Good and U. S. Choice. These have given us considerable latitude in degree of finish.

Through most of the past period the Portland Union Stockyards has been the most important outlet for our finished cattle, but in the last 10 years the livestock auction markets throughout the state have handled a larger number of feeder cattle than the Portland Stockyards. In recent years, the yard at Ontario alone has handled more feeder cattle than Portland. Sales at the auction markets to out-of-state buyers takes a large volume of Oregon feeder cattle. In addition to sales at auction yards, our largest volume of sales of feeder cattle is made direct to buyers at the ranches—many of them going into California. The heavy purchase of Oregon feeder cattle by California buyers has more or less set the price of feeder cattle in eastern Oregon in recent years. Oregon supplies about 7 per cent of the cattle and calves shipped into California, which in itself is a considerable outlet.

A retarding factor in the purchase of feeders by small operators in western Oregon has been the desire of producers in eastern Oregon to sell their total crop in one group. There have been several attempts to overcome this, of which the most successful has been a listing by the local stock association in Grant County of the cattle available for sale so that prospective buyers could pool their requirements.

Future

The committee considers grass as the basic natural resource which the livestock operator markets through the medium of the meat producing animal. The future of our grassland will govern the future of our industry and a productive future requires (1) proper harvesting through prudent pasturing of our existing stands; and (2) an all out research and extension emphasis on development and usage of new grasses, strains of existing grasses, and improved management of ranges (see recommendation number one).

We are told that we can expect an expanding market for our products in California and, more important, in our own state itself, because of an expected increase in population in the future. This simplifies our problems into two groups—production of more pounds of meat, and efficient marketing. Increasing production can be broken into three problems—improving existing sources of feed; making available more sources of feed; and more efficient use of whatever feed is used through efficiency in the animal itself and more efficient management practices.

We see little hope for an increase in the carrying capacity on the federal ranges, because of the multiple use demand by the same increasing population which is going to increase our market. We can only hope through improved grasses, range management, and change in administrative procedure to keep our present numbers on federal lands. Big game will make our problem hard, because here again the same increasing population will try to demand more game which would increase the pressure on our ranges. The game administrators assure us they will at least not allow an increase in the use by big game. It seems that our best hope in the future lies in co-operation with the game administrators in mutually solving the problem areas. It certainly cannot be met by either the livestock industry or the Game Commission alone.

Any increase in carrying capacity of grazing land must, therefore, be done on private land and with full cognizance of the game

problem. Here we must depend on research and improved management practices, and we must proceed with extreme caution in order to maintain and improve our present grass asset which, as we stated before, is the very foundation of our industry. We can look for more increase in carrying capacity of irrigated pastures than in the drier ranges.

To increase beef production, probably, we must, as an industry, change from the relatively simple type of operation we have enjoyed in the past to a more complex manner of producing the animal until slaughter time. We believe that the range grasses should be harvested by the calf-producing cows wherever it is practical since the management of the cow over her lifetime is more efficiently handled here than elsewhere. Along this line, we need much help in determining just what is the practical ration for the pregnant cow in the winter time. The present authorities give us minimum requirements but do not give us any idea as to what is the economically desirable ration considering costs of feeds, especially supplements, and prices of cattle. Many operators have determined to their own satisfaction that it is desirable to feed many times more than the recommended requirements, but as an industry we need to know more about it (see recommendation number two).

To determine just when and where to go with the beef animal after it is weaned is going to take research and trial and error on the part of the industry.

- Utilization of any western Oregon cropland and pasture not being used by more profitable harvesting;
- Utilization of the pea vine ensilage in Umatilla County coupled with the hay production of the Umapine area which is usually exported (see recommendation number five);
- Use of cannery wastes in feed lot operations;
- Increasing the grass and crop residue ensilage tonnage in the western Oregon area;
- Sugar beet byproduct, wheat chaff at harvest time, cull or surplus potatoes, and grass seed byproduct;
- Use of all available grains when price ratio permits;
- Utilization of feeds available at certain times of the year in such areas as under the Madras Irrigation Project;
- Possible grass production from logged over lands;
- Development of synthetic processes to stimulate growth;
- Other sources of feed that could be pointed out and uses determined by the College.

We point out the need for research to determine harvesting practices, feed lot technique, management patterns and time of marketing, with cost figures in each case, to use the above feeds for feed lot livestock, increase swine production and carry our farm flocks over the dry period in the Willamette Valley.

Cash crop farmers and feed lot operators should be encouraged to keep hogs on the farm to further enable them to maintain the fertility and organic matter of the soil and utilize available feeds. As a possible source of hogs we recommend the use of pig hatcheries as a potential supply and these operated only by our informed hog men.

We recognize that some animals use their feed more efficiently than others, and it is probable that the pounds of beef marketed will be increased more by improving the efficiency measured by rate of gain, than by improving our feed resources. We can acquire this efficiency without sacrificing our standards of quality by being careful in choosing either males or females, to keep a proper emphasis in both quality and size for age, and considering wool for sheep. The livestock operators can build up efficient herds or flocks by procuring the better gaining breeding animals from herds or flocks on reliable efficiency testing programs. In all this process, no animals should be chosen that are below the acceptable standard of quality (see recommendation number seven).

Total income of the average Oregon sheep production unit is derived about three-fourths from sale of meat animals and one-fourth from sale of wool and the committee feels this proportion should be reflected in all assistance including future research and educational programs.

Inasmuch as areas not doing predatory animal control work serve as a reservoir of infection to surrounding areas, the committee feels that a statewide control program is needed to cope with this situation. We also ask that the experimental laboratory of the Fish and Wildlife Service expend energies in western Oregon. The uncontrolled dogs are a serious menace to loose livestock.

To efficiently use our feeds, we must cut down our losses from diseases and parasites as much as possible. The College, through both its Extension Service and Branch Stations, must continue its work in cooperation with resident veterinarians, where available, in controlling those diseases for which we already have more or less workable control.

We request literal application of regulations and stringent controls by the U. S. Bureau of Animal Industry and State Department of Agriculture on such diseases as scabies, cholera, tuberculosis, hoof and mouth, anthrax, and red water.

Anaplasmosis is causing such increasingly severe losses in our cattle that research work must be done to indicate means of control (see recommendation number six).

We must have more research work, especially on urinary calculi and white muscling, together with round worms in hogs, in order to have some ideas as how to manage our herds to lessen losses from these sources.

A practical control of brucellosis is possible from an enlargement of our present program providing both the beef cattle operators and the dairymen are cognizant of the problems and possible means of control which face both groups, and both the College and the State of Oregon Department of Agriculture must use every means to bring this about. To facilitate this we recommend the formation of a Brucellosis Advisory Council to be made up of at least the following agencies: U. S. B. A. I., State of Oregon Department of Agriculture, Oregon State College, the dairy producers, the beef producers, the swine producers, the milk goat producers, Public Health Service, the State Association of Veterinarians, and the consuming public.

Dwarfism in calves may well be a serious threat to beef production in the future and the College should make every effort to protect the commercial operator from losses in this respect.

We recommend a broader extension program to demonstrate to the hog producer more economic means of increasing pork production. This is especially important with our present small margin of profit in pork production. This would include demonstration farms, swine tours, and other education.

Hogs can be used very successfully on small part-time farm operation.

The committee points out the extreme importance of maintaining the milk producing ability in breeding stock of both the commercial and purebred herds.

To produce meat at a profit requires the most efficient marketing of the product, which in return requires the production of a product which is popular with the consuming public. It may well mean the marketing several times of an animal before slaughter time if we are to efficiently utilize the feeds throughout the state and to do this without loss to the "middle man." Each time the animal is moved will require a system of direct marketing. The College should direct considerable effort in this respect.

Estimates in California are that production of cattle and sheep will not increase faster than the state's population percentage-wise. Therefore, if consumption per capita continues at the high level of

recent years, the deficit would grow at about the same rate as population. In this respect Oregon produces only about half of the pork consumed in the state. This is generally regarded as a conservative view of the meat demand outlook. Obviously, the Northwest's opportunity to market meat animals and meat animal products in California is wide open. The only question is how much. Relative costs, qualities, and marketing practices as compared with many other states from which these products also arrive in California and Oregon enters into this consideration.

With this picture of demand for feeders from California, it is natural for the producer of feeder cattle to sell into California if that is his highest market. If Oregon is going to efficiently utilize its feed supplies, however, the feeding processes throughout the state are going to have to develop an operation by which they can compete with this market. Most definitely this will be necessary if Oregon producers and feeders are going to supply the increasing population in Oregon.

The sheep committee recommends that lamb shows be continued, feeling that they have done an excellent job in early lamb sections of the state in stimulating sheepmen to produce and fatten early lambs to take advantage of early grass and market conditions usually prevailing at the time.

A carcass show should be held at the State Fair and open to all exhibitors showing representative animals in the carcass from each lot as well as showing the other animals in the pen, this being tied into one exhibit.

To produce carcasses popular to the public, we must keep striving for higher degree of quality when we choose our breeding stock. An emphasis should be made to produce a heavier weight of hind quarter compared to fore quarter. In this respect we request slaughterers to make available information upon request as to relative dressing percentages of hind and fore quarters in the case of cattle and sheep and primal cuts in hogs.

We have been told by representatives of the packing industry that we can expect the public demand for carcasses to continue to change regarding size. Therefore we recommend that the producer choose a type of animal that can be efficiently marketed at any carcass size at the desired degree of finish and while doing this bear in mind our former statement to keep a proper emphasis on both quality and size for age.

We must not forget the possibility in the future of upgrading carcasses at time of slaughter by intravenous injections of hot tallow, or meat processing and prepackaging where there is separation of

the more tender parts and assembly of them into artificial steaks, etc., together with canning of the less tender portions. These possibilities would of course put a further emphasis on size for age.

We feel that the College in considering the problems of the purebred industry should bear in mind that the purpose of the purebred industry is to perform a service to the basic meat producing industry—the service of producing breeding stock which will contribute to the advancement of the industry along the lines determined to be to the advantage of the producer. We recommend that the College consider the wishes and requirements of the industry only as it pertains to the requirements and goals of the producer, and that in like manner the College should bear in mind that to influence and help the producer in the right direction will probably help more in the advancement of the livestock industry than in any other way. Also, we request that the purebred operator continue to recognize the goals of the commercial producer which we have outlined when he sets upon his task of production.

In this respect it was recommended by the committee that livestock shows give consideration to a standard of efficiency of production along with conformation in making awards.

Our discussion to this point has all dwelt with the physical phases of our future. Our future lies in the hands of youths of today, and the most important factor in our future lies in our youth education.

Coupled with this is the need for proper public relations so that the livestock industry can enjoy a sincere and accurate understanding of its problems by the rest of society.

In summing up our future we see this picture: a segment of our population producing meat for a profit, and producing it so that each step is efficiently done so that it will show a profit in itself. We see this being done by using efficient livestock to harvest our feeds; by using the producing cow and ewe to harvest our basic natural resource—range grass; the feeder stock, insofar as is possible, using the cropland pasture, the nonlivestock agricultural byproducts, and cannery wastes; and marketing the livestock in the most efficient manner.

Recommendations

1. We recommend a strong emphasis on research and extension in the development and demonstration of new grasses, strains of existing grasses, and improved management of ranges. This must include development of reseeding practices on a

- practical basis with cost figures and relative feasibility recommendations in respect to labor costs, seed costs, productivity of land, cost of removing plant competition, etc.
2. We request research in the winter feed ration of pregnant animals under eastern Oregon management conditions. Satisfactory work is being done at Squaw Butte in regard to this problem in the high desert areas, but little work is being done relative to the more productive type areas. Many operators have determined to their own satisfaction that it is desirable to feed many times more than the recommended requirements according to existing information, and factual data should be determined by our Branch Stations. As this information is made available it would be stressed by the Extension Service and resident staff. The information sought should include: use of supplements, especially on first offspring females and perhaps the second; cost of feeds used; types of management required to do supplemental feeding; returns by way of decreased mortality of young at birth; increase in milk supply of mother; stepping up conception date after birth; the size of the offspring at marketing time in the fall; and perhaps the pounds of beef marketed over the life of the brood animal.
 3. We request information on costs in connection with the different phases of our operation. This will be extremely important if we are to move parts of our operations throughout the state. It should include economic factors in respect to rentals, cost of producing hay under different local conditions, cost of feed lot, and specifically the cost of each operation in the different localities.
 4. We suggest that each branch experiment station in the state be serviced by a committee of producers who would advise with the director, department heads, and branch station personnel regarding the kind of research work needed to serve the best interest of production in the area represented by the producer. We request a representative of the Agricultural Economics Department to be present at each meeting.
 5. We request experimental work to determine proper handling and usage for livestock of byproducts from nonlivestock crops and from cannery wastes. This should specifically include pea vines and should, in all instances, cover such points as relative feed value compared with other feeds both in cost and available nutrients, feeding methods, procedures to make the feeds suitable for livestock, with proper emphasis on possible detrimental effects from using them for livestock feed.

6. We request experimental work on anaplasmosis in any way that will determine an approach to the problem. Work must also be done on white muscling, urinary calculi, and round worm. There also must be research to determine methods and time of application in relation to the life cycle of the grub in our livestock management program.
7. The committee feels that the furtherance of an adequate and workable progeny testing program through the Extension Service, breed associations, and breeders of the state, coupled with further studies to determine practical methods of introducing efficiency into commercial herds is vital to the industry.
8. Inasmuch as corrals, chutes, feeders, large scale mechanical feed lot equipment, and other miscellaneous equipment are vitally important to the industry and since no plans are available on many items and because many of the plans that are available are "white elephants," the committee recommends that Oregon State College undertake to develop adequate and satisfactory building and equipment plans.
9. Inasmuch as Oregon produces a large amount of "off-grade" wool (approximately $9\frac{1}{2}$ per cent), the committee feels that there is an opportunity for research and education to improve the presentation of wool following shearing, also in shearing feed lot lambs. We request that additional research be done on the results of shearing lambs on feed in the state to determine the economics of the practice.
10. The committee recommends that short courses be held regularly for livestock producers of the state.
11. We recommend that the college livestock be marketed on a grade and yield basis with proper recognition being given to the return which would have been received from those animals if they had been marketed in the regular manner.
12. We recommend that the county agents and Extension specialists be instructed, in addition to their regular annual report to file a one page summary of the acute problems of which they are aware, that these problems be divided according to the department under which they would fall at the College; when they are received in the Director's office that they be immediately transmitted to the Dean's office for dissemination to the appropriate office.
13. If this Agricultural Planning Conference serves any appreciable purpose to either the College or the industry, it should be repeated oftener than every 25 years because it is impossible for the mere human being to anticipate goals or problems that far in advance.

Rabbits

Subcommittee Report

The number of breeding rabbits increased steadily from 57 thousand in 1939 to 76 thousand in 1943. There was a sudden and marked increase in number during the war when 103 thousand was reached as the peak in 1945. This might be expected because of rationing and scarcity of other meats. Rabbits could be raised in the backyard and butchered for home consumption, whereas few other animals, except poultry, could be produced in this way. The number of rabbits in 1946 had dropped to 92 thousand breeding animals.

More than half the rabbits raised in Oregon are in district 1. Very few rabbits are along the coast or in eastern Oregon. District 1 includes Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington, and Yamhill counties.

There is some indication that rabbit numbers have increased steadily since 1946 in keeping with the increase in total population and with the increase in part-time or "small farm" farming operations. The number of breeding rabbits in 1950 was estimated at 119 thousand. Assuming a ratio of 1 male to 6 females, there would be about 100 thousand breeding does in 1950. If these produced an average of 4 litters per year with 6 young per litter and they were raised to a weight of 4 pounds each, it would mean the production of 2,400,000 rabbits or of 9,600,000 pounds of live rabbit that year.

Rabbits have generally been raised in backyards by people who have them to supplement their income rather than as a total source of income. There are only a few rabbitries in the state with a sufficient number of breeding animals to provide the sole income. There has been little or no change in size of operations, because the increase in number has been brought about largely by backyard producers rather than by large commercial rabbitries. There are several producers who derive a substantial portion of their income from rabbits.

There is a greater turnover in the persons producing rabbits than with any other livestock group. Many people who raised rabbits last year or the year before are no longer raising rabbits and many who are now producing rabbits were not doing so a year ago. This great turnover in producers creates a greater need for available information on how to produce rabbits than exists for any other class of livestock.

The unfortunate situation at the present time is the price rela-

tionships. Rabbits are now very cheap in relation to feed and labor prices. Also, rabbit meat is cheap in relation to prices for other animal products except pork and poultry. The reasons rabbits can now compete for food with other animals are that rabbits are good converters of roughage into meat, they can be kept in a small space, they can be raised in backyards and cared for by unemployed members of the family. Maintenance costs are low in relation to productivity in that a doe weighing 10 pounds should produce 96 pounds of live rabbit per year.

Recent studies in California indicate that the production of live rabbit per doe per year has increased from 65 pounds for the period 1930-1939 to 101 pounds for the period 1946-1948. The pounds of feed per pound of rabbit raised has dropped from 6.2 pounds in 1930-1939 to 4.7 pounds in 1948 and there are indications that further improvements have been made since 1948. Also, by use of modern facilities, the hours of labor per doe per year have dropped from 16 to 12. However, the labor, feed, and hutch costs have gone up during this same period. For example, it cost \$15 to \$18 per doe for hutch and equipment construction in 1948 and the figure would be higher now. Labor is about three times now what it averaged from 1930-1939 and feed costs per pound are now four times the 1930-1939 average. This is contrasted with selling price of live rabbits now of only 2.3 times the 1930-1939 average. Considering land, equipment, supplies, and breeding stock, the investment per doe would be about \$32.

At present, the bulk of the rabbits grown are for meat but there are a few fancy and fur rabbits. The leading meat producing breeds are the New Zealand White and the Californians. Some cross breeding is practiced.

The production and marketing problems facing rabbit producers may be outlined. Some of these problems are those with which the breeder is constantly faced but some have resulted from pressure due to adverse price relations.

- Hutch construction
 - Reduction in investment costs badly needed.
 - Outlay which will lower labor requirements.
 - Health of animals must be maintained at high level. Increased production rate necessitates consideration.
- Parasite and disease prevention and control
 - Some diseases we know little about.
 - There is likelihood of difficulties with diseases not now important.

This phase is closely tied in with hutch construction, breeding, feeding, and management.

- Feeding and care
 - Maximum production in breeding, growth, and lactation.
 - Reduction in feed costs.
- Breeding
 - Improved fertility.
 - Greater production and feed efficiency.
 - Better quality of meat animal.
- Marketing
 - Packaging a more appealing product.
 - More appetizing recipes.
 - Educating public to value of rabbit meat.
 - Moving surpluses to deficient areas.
 - Holding surpluses to deficient seasons.
 - Market reporting. Need to purchase on grade basis and reports and price predictions on this basis.

The future for the rabbit industry is not easy to predict. At the present, rabbit producers in general do not enjoy good price relations. However, better producers are making money. It would appear that, if rabbits are to compete with other classes of livestock for available feed supplies, we must (1) cut the costs of production by lowering costs of housing, equipment, and labor, (2) increase production through sanitation and disease control, better feeding methods, and improvement through breeding, and (3) create a greater demand for rabbit meat by putting a better product on the market, preventing surpluses, and educating the public to the value of rabbit meat.

Oregon, particularly the Willamette Valley area, is well suited to the raising of rabbits because of a uniform temperature conducive to good rabbit production, abundant available food supply, and a strong potential market. There is a great deal of rabbit meat introduced into the Portland area from other states and the consumers are becoming aware of the desirability of rabbit meat so that the demand in this area can be even greater.

It appears that rabbits will always be important in "backyard" or "small farm" operations. However, there is a place for some commercial rabbitries from which the entire source of income is derived. A unit large enough to provide the sole income for gainful employment of a family would be 250 breeding does. From this operation, a good producer should produce 24 young or 96 to 108 pounds of live rabbit per doe. This should give a gross income

with present prices of about \$7,500. This would leave about \$2,500 for labor returns which is not high. Any level as a side line that is in relation to sound production methods might be considered satisfactory. One or two does would not be making the best use of the buck. Units of 8 or 10 does and a buck or units in multiples of these figures would be sound. It is perhaps not sound in production to have only enough animals to raise what one family would consume.

Recommendations

The committee suggests that the five recommendations listed below be given careful consideration as needs of the rabbit industry.

1. There is a need for marketing reports, forecasts, and information on marketing rabbits and rabbit products. Live animal grades should be set up so that quotations and dealing could be done on a grade basis. Oregon State College should solicit the aid of any organization necessary to provide this service to the rabbit producers.
2. There is a need for research and education on the preparation of rabbit meat in tastier forms and the development of more attractive packaging for frozen rabbit. Oregon State College is asked to work with rabbit producers and processors in this venture.
3. There is a need for a publication by Oregon State College including the following information:
 - Hutch construction
 - Breeding of rabbits
 - Feeding and care
 - Sanitation and the control of diseases and parasites
 - Marketing

Some discussion arose regarding the advisability of publishing five small bulletins which could be sent out as separates if persons were interested in only one phase of rabbit production, with all five sections being sent only to those needing information on all phases of rabbit production. It was decided that this should be decided by the College administration after the manuscripts are prepared. Two points were emphasized; the material to be included should be adaptable to Oregon and it should include the most recent information.

4. The committee feels that there is a need for research by Oregon State College on breeding, feeding, and disease problems. It is recognized that certain phases are too extensive to be done at Oregon State College. There are some pressing problems,

however, that should be solved by researchers at Oregon State College:

Feeding. The use of antibiotics. Cutting feed costs by use of large amounts of roughages, silage, and other cheap roughage such as pea-vines.

Breeding. Improvement of meat rabbits through the application of breeding. Increase in fertility by use of hormones, better feeding, and improved breeding.

Diseases and parasites. The relation of roughages in the feed to enteritis. Studies on the control of intestinal coccidiosis.

5. There is need for cost analysis determinations on rabbits so that one could decide when rabbit production is profitable and how profits from rabbits would compare with what could be made with other ventures.

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