THE MEAT TYPE HOG PROGRAM IN CANADA

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My assignment of reviewing the meat type hog program in Canada has been made much easier by the recent publication of the U. S. D. A. Marketing Research Report number 227. This is the report of a commission of seven live stock specialists including our associates, Dan Brady and Lowell Strong, who came to Canada last year, 1957, to study our swine program. This is an excellent report which will be very useful in the live stock industry. In planning my paper for to-day it seemed appropriate to consider it as a supplement to this Marketing Research Report. I will attempt to cover briefly the mechanics of our swine program, some criticisms and current efforts to improve the program. I hope that any points that I miss may be brought out in the discussion.

Canada owes a great debt to Denmark for getting her started on a carcass improvement program. It was the threat that the high quality Danish bacon imposed on Canada's export market in Britain that resulted in the decision to institute voluntary live grading of Canadian hogs in 1922. This evolved through compulsory live grading to carcass grading which became compulsory in 1940 for all hogs marketed. Canada lost the British export market in 1951 due to currency differences and at present only very small amounts of pork products are exported, some to the United States. Incidentally, the "Canadian Style" back bacon that is sold in U. S. stores has never been to Canada.

The carcass grading system has developed progressively with periodic revisions to keep it in line with modern practice. Criticisms are not uncommon but many of them may be expressions of rebellion against regulation. A brief summary of what happens to a market hog may be useful to explain the carcass grading system.

The ration that a market hog receives in Canada is usually slightly lower in energy and slightly higher in fibre than the majority of rations in the U. S. based on corn. Also, it has been found that restricting the energy intake during the last six to eight weeks before marketing, either by dilution or by restricted feeding will produce a leaner carcass. The question that the producer asks is "will this pay?" This question is not easy to answer since the hog must be fed for a longer period. The producer must decide what is the most desirable market weight and feeding method for his particular strain of swine to produce the most top grade carcasses.

The market hog is marked on its side with the producer's tatoo number for permanent identification of the carcass. Agreement as to the price to be paid, with differentials according to carcass grade, is made in advance with the buyer at the packing plant.

When the hog has been killed, dressed and inspected, the hot carcass is weighed and graded by an official grader. The tatoo number, weight,

grade and criticism of the carcass are recorded on a double ticket attached to the carcass. One half of the ticket remains with the carcass and the other half is separated as the record for payment at the previously agreed price.

The producer receives a check from the packing plant, an official grade certificate and a premium warrant if the carcass was in either of the two top grades. The premium of $2.00 for a grade "A" or $1.00 for a grade "B1" is paid by the Dominion government in addition to the price per pound paid by the packer.

Mimeographs of the grade standards have been distributed. The grade standards are based on weight, length, thickness of back fat at shoulder and loin and a descriptive definition which includes balance, thickness and width of belly, fullness and shape of ham, colour and firmness of fat, smoothness of skin and freedom from dark hair roots or pigment.

Last year, 1957, of the 5½ million hogs marketed, 29% were grade "A", 42% were grade "B 1" and 10% were grade "C". Therefore, the government paid out approximately $3,000,000.00 in $2.00 premiums for grade "A" and $2,000,000.00 in $1.00 premiums for grade "B 1".

The grade standards have always been and probably always will be the subject of argument. It seems, by comparison, that one pound difference in weight may separate two grades. In practice, however, other factors are usually present which would determine the decision between grades at these weight ranges.

The mimeograph of the proposed changes in standards is an indication of the trend toward lighter weight, leaner hogs. The workers involved in the swine program are continually striving to improve the standards. The proposed changes are being applied to a percentage of all hogs graded on a trial basis in order to study their effect on the swine industry.

The proposed changes would extend weight ranges of the grades "A", "B 2" and "B 3" to five pounds lighter weights. The back fat tolerances of the higher grades would be one-quarter inch less. This trend is the result of the preference of the packers for lighter, leaner hogs which they can break down more profitably into trimmed, lean cuts. It is thought that the proposed changes will cause more hogs to be graded "A" and "C" and less "B 1".

The proposed changes will favour the Eastern producer who conserves expensive grain by feeding adequate protein supplements. In the West, fatter hogs are usually the result of feeding cheap surplus grain with a longer feeding period as a substitute for protein supplements.

When we judge and cut hog carcasses at the meat laboratory we often place a "B 1" carcass over an "A" because of lack of firmness of the "A" carcass and its cuts. This is not "soft pork" however, as it is known in the United States. In fact we have difficulty finding really soft carcasses to show our students. This lack of firmness of under-finished grade "A" carcasses is apparently of much less importance to packers than the amount of lean and length of the carcass. But we do see some side bacon that is too thin and lean to be attractive.

The carcass grades are not carried over to the lean cuts. It is said that packer grades are applied to bacon but I have yet to see evidence of it in the stores. My own procedure for the selection of bacon at the retail counter is to attempt to pull back the piece of cardboard that hides the face of the strip of bacon, without breaking the cellophane, in order to see the distribution of fat and lean. This practice was recently facilitated by a government order prohibiting the use of red cellophane.

Most Canadian swine are of the Yorkshire breed due to the severity of the grade standards in regard to dark hair roots and pigment. This makes it unprofitable to keep the dark colored breeds.

A newly developed white breed, the Lacombe and imported Swedish Landrace are being used to a limited extent for crossing with the Yorkshire. At the College we have a herd of Large Whites or English Yorkshires which are eligible for registration as Canadian Yorkshires. The principle of crossing for hybrid vigour has been advocated by some groups in Canada but is not generally accepted for practical application.

A Record of Performance testing program on a national scale has done much for the improvement of breeding stock. This program was begun a number of years before carcass grading of hogs was made compulsory. There are seven test stations across Canada where pigs are fed under uniform conditions.

Purebred sows and boars may be tested by the Record of Performance of their litters and qualified for Advanced Registry under a point system for scoring the carcasses. Four pigs from a minimum of eight in a litter are sent to a test station in order to begin test on the day when the group of four pigs weighs 200 pounds. The standard A. R. ration is listed on the mimeograph.

The hogs are marketed individually at a weight predicted to yield a carcass weight of 150 pounds. The carcass is measured and cut by a standard method and scored on the basis of length of carcass, back fat measurements, balance of ham, middle and shoulder and grade of belly. The score for belly grade is determined by comparison with a series of standard pictures (llustrated). A sow is qualified for Advanced Registry by a score of 75 points. A boar is qualified by three litters which score 75 points.

In addition, pigs submitted for testing must be true to type for the breed. This type requirement and the score for balance may eventually be dropped as they are considered by some people to be unnecessary in the program.

An Annual Report (illustrated) is prepared, listing the detailed score for all sows and boars tested under Record Performance and qualified for Advanced Registry. This information is very useful for planning purchases of breeding stock.

I would like to emphasize that satisfaction with the meat type hog program in Canada is not complete. Recent evidence of this is the formation of a producers' co-operative in one province, Ontario, which now controls the marketing of hogs in this province under the authority of co-operative marketing legislation. This marketing system has not been operating long enough for a factual appraisal of its worth.

At the risk of appearing mercenary, I would like to suggest that Canada might contribute to the meat type hog program in the United States by supplying Yorkshire breeding stock. We see some of our best Yorkshires being shipped South each year and our breeders appreciate the possibilities of this market.

One must concede, however, that it probably would not pay a producer to obtain meat type breeding stock and adopt known methods of feeding and management for the production of very lean hogs under the present methods of pricing hogs in the United States. The first step would seem to be the provision of incentives such as increased price differentials and premiums. It will be necessary to show the packers how lean hogs make more profit and the experience of their Canadian associates may be useful for this purpose.

REFERENCES

1. Marketing Meat Type Hogs - U. S. D. A. Marketing Research Report No. 227, April, 1958.

2. National Bacon Hog Policy, R. O. P. and A. R. for Purebred Swine - Canada Dept. Agr., October, 1954.

3. Maybee, H. J. - Hog Grading in Canada - Canada Dept. Agr. Publ. 961, December, 1955.

PROPOSED CHANGES IN STANDARDS FOR GRADES OF HOG CARCASSES

	Present Grades				Proposed Grades			
	Wt.	Length	Sh.Fat	Loin Fat	Wt.	Length	Sh.Fat	Loin Fat
A	140-170	29	2	$1\frac{1}{2}$	135-170	29	$1\frac{3}{4}$-2	$1\frac{1}{4}$ - $1\frac{1}{2}$
B2	125-134	27	2	$1\frac{1}{2}$	120-134	27	$1\frac{3}{4}$	$1\frac{1}{4}$
B1	135-175	28-	2-$2\frac{3}{4}$	$1\frac{1}{2}$ - 2	135-170	28-29	2-$2\frac{1}{2}$	$1\frac{1}{2}$ - $1\frac{3}{4}$
B3	176-185	30	$2\frac{3}{4}$	$2\frac{1}{4}$	171-180	30	$2\frac{1}{2}$	2
C	120-185	-	$3\frac{1}{4}$	$2\frac{1}{2}$	120-180	Nil		
D	120-185				all wts.	culls		
Lts	Under 120				Under 120			
Hvys	186 & up				181-195			
XHvy	196 & up				196 & up			
P.I.	.....				Place all P.I. in D grade			
R	.....				R			

Standards for Grades of Hog Carcasses

(a) Weight ranges and carcass measurements.

(i)

Grade "A"	Class 1
Weight	140 to 170 pounds
Minimum Length	29 inches
Maximum shoulder fat	2 "
Maximum Loin fat	$1\frac{1}{2}$ "

(ii)

Grade "B"	Class 1	Class 2	Class 3
Weight	135 pounds or over but not over 175 pounds	125 pounds or over but under 135 pounds	Over 175 pounds but not over 185 pounds
Minimum Length	28 to 29 inches acc. to weight	27 inches	30 inches
Maximum Shoulder Fat	2 to $2\frac{3}{4}$ inches acc. to weight	2 inches	$2\frac{3}{4}$ inches
Maximum Loin Fat	$1\frac{1}{2}$ to 2 inches acc. to weight	$1\frac{1}{2}$ inches	$2\frac{1}{4}$ inches

(iii)

Grade "C"	
Weight	120 pounds or over but not over 185 pounds
Maximum Shoulder Fat according to weight	$2\frac{1}{4}$ to $3\frac{1}{4}$ inches
Maximum Loin Fat according to weight	

(iv) Grade "D"
Weight - 120 pounds or over but not over 185 pounds, and under-finished, rough, soft or oily carcasses of any weight.

(v) Lights - weight under 120 pounds.

(vi) Heavies - weight over 185 pounds but not over 195 pounds.

(vii) Extra Heavies - weight over 195 pounds.

(viii) Physical Injury - all weights.

(ix) Ridglings - all weights.

(x) Stags - all weights.

(xi) Sows - Class 1 - all weights.
Sows - Class 2 - all weights.

(xii) Rejected or Condemned Carcasses shall be graded in accordance with the above grades, and in addition shall be shown separated on the Grading Certificate as Rejected or Condemned.

(b) Grade Standards

(i) Grade "A"

Grade "A" carcasses shall be of best quality.
Shoulder - Shall be balanced in weight in relation to the ham.
Belly - Thick and of even width throughout, with full flank.
Ham - Full fleshed, evenly covered with fat of good shape.
Back - Fat firm and of even thickness within variation allowed.
Quality - Fat firm and white with proper balance of fleshing and fat in carcass throughout. Skin shall be smooth and show no marked evidence of dark hair roots or pigment.

(ii) Grade "B"

Grade "B" carcasses may vary from Grade "A" in any weight class as follows:

(a) Class 1 and 3

Shoulder - Slightly heavy or slightly fat.
Belly - Slightly thin or fat or wide.
Ham - A little thin or slightly fat.
Back - Fat slightly uneven on back or slightly deficient, or a little overfat throughout the carcass.
Quality - Fat a little soft or somewhat out of balance between lean or fat.

(b) Class 2

Shoulder - Slightly heavy.
Belly - Thin or uneven.
Ham - A little thin.
Back - Fat slightly uneven on back or slightly deficient.
Quality - Fat a little soft.

(iii) Grade "C"

Grade "C" carcasses shall be well finished and of good quality of fleshing, but may vary from Grade "B" by including a greater degree of fat to lean, softness and unevenness of fat, heaviness of shoulder, and roundness of rib.

(iv) Grade "D"

Grade "D" carcasses may contain overfat, unfinished, rough, soft or oily carcasses.

(v) Lights

The grade Lights shall include all carcasses of reasonable finish and quality within the prescribed weights, but shall not include thin or underfinished carcasses.

(vi) Heavies

The grade Heavies shall include all carcasses of reasonable finish and quality within the prescribed weights, but shall not include thin or underfinished carcasses.

(vii) Extra Heavies

The grade Extra Heavies shall include all carcasses of reasonable finish and quality within the prescribed weights, but shall not include thin or underfinished carcasses.

(viii) Physical Injury

Carcasses that have suffered serious physical damage shall be graded Physical Injury.

(ix) Ridglings

Carcasses from ridgling pigs shall be graded Ridglings.

(x) Stags

Carcasses from boars that have been castrated and healed shall be graded Stags.

(xi) Sows

Carcasses of females that have raised one or more litters shall be graded Sows as follows:

(a) Class 1: Carcasses of good fleshing throughout.
(b) Class 2: Carcasses that are overly fat or very thin.

(xii) Rejected or Condemned

Carcasses that are rejected or condemned by the Veterinary Inspector on account of disease shall be graded Rejected or Condemned.

(c) Method of Measurement

(i) Measurement for the length of the carcass shall be taken from the front edge of the first rib to the inside of the aitch bone.

(ii) Fat measurements shall be taken as follows:

Maximum shoulder - At the point of maximum fat thickness on the shoulder, except for any small fat infiltration into the lean.
Maximum loin - At the point of maximum fat thickness on the loin between the last rib and the tail.

(iii) Carcass weights shall be "Warm Weights", including the head, leaf-lard, the tongue, kidneys, tenderloins, tail, backbone and feet; and

(iv) Whip marks, scratches, and bruises shall not be a factor in determining grade except those graded as serious physical damage.

THE A. R. SWINE RATION

This "pattern" ration is shown in this display because it is being used in the seven (7) Advanced Registry Stations across Canada. The present formula was adopted in 1952 on the recommendation of the Advanced Registry Feed Board. Every attempt is made to standardize the ingredients used by the Test Station suppliers to produce as uniform a ration as possible. The present ration is giving very satisfactory results. The ingredients in the Advanced Registry ration are as follows:

Grower	Basal Grains 85% plus	Supplement 15%
Finisher	Basal Grains 92% plus	Supplement 8%

Basal Grains *		Supplement *	
Barley	50%	Soybean Oil Meal	60%
Oats	30%	Meat Scrap	20%
Wheat	20%	Fishmeal	10%
		Ground Limestone	5%
		Iodized Salt	5%

To each ton of grower is added:

Vitamin A	2,000,000 I.U.
Vitamin D	200,000 I.U.
Vitamin B_{12}	9 Milligrams
Antibiotic ** (in suitable carriers)	9 Grams

There are no additions to the finisher but if this ration is fed to stock intended for breeding the Vitamins A and D should be continued.

* The minimum standards for ingredients are as follows:

Barley No. 2 Feed	Soybean Oil Meal	42% Protein
Oats No. 3 C. W.	Meat Scrap	45% "
Wheat No. 5 Northern	Fishmeal	60% "
	Ground Limestone	95% Calcium Carbonate

** The antibiotic specified is designated as a broad spectrum antibiotic, that is either Aureomycin or Terramycin.

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CHAIRMAN CAHILL: The Chairman is always on the spot. As you see, Woodie just passed the ball across the podium. He gave me the task of introducing a man who really needs no introduction to this group. But I think a few comments can be made which might serve as a challenge to every young person in this audience, and I learned yesterday that there is no one here except young persons.

Your program indicates that this next speaker is Scretary and Manager of the Producers Livestock Association, which tells us immediately that he is quite involved in the marketing of swine. This same organization which he heads is also reaching out into the merchandising phase of our meats program. They have gone beyond getting their feet wet; they are really in the swim and doing a good job of seeing what the retail merchandiser and consumer think of some of this improved pork. In all of this he has not forgotten about production, because he is very definitely involved in producing some hogs.

In addition, he is quite a supporter of groups such as this. As a member of the board of trustees of Ohio State University he has an appreciation of what is involved in meats teaching and research, and he was very instrumental, in fact, the wheel horse in getting the swine evaluation station constructed and the program moving there at Ohio State.

In addition you have seen him in past years and if you attend the meetings of the National Live Stock and Meat Board again this year you will see him sitting as a member of that Board.

I believe we can consider this neither horizontal nor vertical integration, but rather just a well rounded area of appraisal, and in order to make the ability a little more complete, Mr. Brunner, who is in charge of the station at Columbus, made a tour on the European continent this past year and spent several weeks studying the improvement programs in that area. I believe the comment has already been made this afternoon that many of the roads in swine improvement lead back to Denmark; therefore, we have asked Mr. Ketner to come and share some of his ideas with us this afternoon.

Mr. Ketner. (Applause)

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