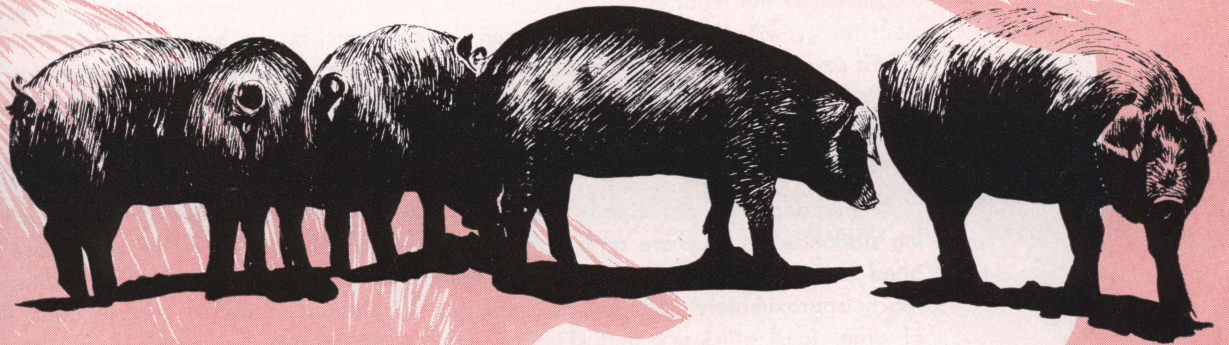


Selecting Meatier Hogs



TEXAS A&M UNIVERSITY
TEXAS AGRICULTURAL EXTENSION SERVICE
J. E. HUTCHISON, DIRECTOR, COLLEGE STATION, TEXAS



● ● Programs that Pay Dividends

FOR THE PUREBRED BREEDER

Purebred breeders should participate in testing programs that give the most information on the economic principles of successful hog production, such as prolificacy, growing ability, feed efficiency and meatiness. These programs include:

● Breed Meat-Type Certification Program

This three-point program based on Production Registry, rate of gain and carcass merit is helping the swine industry to make great improvements in meatiness and efficiency. Details of the program can be obtained by writing your breed association. Extension workers are eager to help you participate in this testing program.

● Breed Association "On-the-Farm" Performance Testing Program

This program measures the feed efficiency of the pigs in addition to the traits measured by the Meat-Type Certification Program. It also includes a more rigid requirement for growing ability. It is conducted "on-the-farm" by the breeder and is designed to test several pigs from one sire at minimum cost. Write your breed association for details on the program. Your local county agent can assist you in conducting this program.

● Litter Testing Programs at Central Stations

Breeders may participate in this program by taking two littermate pigs to a testing station when they are approximately 8-9 weeks old. All pigs at the station are finished to market weight under a uniform feeding and management program. As the pigs reach approximately 210 pounds, they are slaughtered to obtain carcass data. Rate of gain, feed efficiency and detailed carcass information are obtained on the two littermates.

Full information on this program can be obtained from your local county agricultural agent or Extension Swine Specialist at Texas A&M University.

FOR THE COMMERCIAL PRODUCER

1. Choose and follow a breeding plan. Hybrid vigor is of much importance in commercial hog production. Rotation of purebred boars of three breeds is an effective practice for utilizing the principle of hybrid vigor. Choose breeds that provide the best combination of traits in their crosses.

2. Select and use purebred boars from production-tested stock. Insist on rate of gain, feed efficiency and carcass information when buying boars. Purebred breeders participating in one of the testing programs outlined will have boars with this information.

3. Select the most efficient, meatiest gilts for replacements. The "ON-THE-FARM" selection program based on litter records, rate of gain and meatiness as determined by "backfat probing" is outlined in this publication to help select the best gilts.

Selecting Meatier Hogs

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TEXAS SWINE PRODUCERS can produce more muscular hogs with less fat by following a planned selection and breeding program. Such hogs are more valuable on today's market and their lean, tender cuts find favor with American housewives.

This meatier hog can be produced by selecting gilts and boars that have adequate length (30-inch carcass on a 200-pound hog) with thick, muscular conformation, with *just enough fat* at market weight to insure carcass firmness and give quality and flavor to the cuts. This meatier hog must come from sows that farrow and raise large litters of big pigs; he must be fast growing, be able to convert grain and supplement into pounds of pork at an efficient rate and possess other traits that mean profit for the producer.

Any profitable selection program must be based on the ability of an animal to perform. This opinion is reflected in the wider acceptance and use of Production Registry, breed Meat-Type Certification Programs, "On-the-Farm" Performance Test-

ing and Gilt Selection Programs.

No single selection plan fits all breeders and producers, but sound *production information* coupled with competent *visual appraisal* permits the most accurate selection of breeding animals.

The commercial producer, by selecting production-tested boars and mating them to "On-the-Farm" selected gilts, as outlined in this publication, will produce meat-type hogs most efficiently. The commercial producer should buy boars from breeders that have satisfactory litter records, rate-of-gain, feed efficiency and carcass cut-out information on them. Extra time, effort and money spent in selecting boars generally give the greatest return of any investment you make in the hog business. Attempt to buy boars from breeders participating in one of the testing programs described inside the front cover. Always try to evaluate as many of the littermates and close kin of your boar as possible to help get a more dependable estimate of his potential.

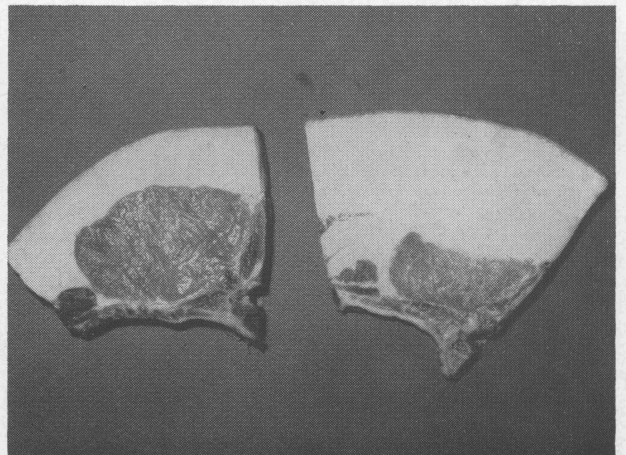
Selecting Gilts

The success of the purebred breeder and commercial producer is greatly influenced by their ability to select and retain the most productive gilts in their breeding herd. The following "On-the-Farm" selection program is one of the most highly effective programs for selecting more muscular, more profitable gilts. This program supplements purebred selection programs and serves as a guide for commercial and purebred swine producers.

The program is based on the basic fundamentals that are of greatest economic importance to swine producers:

1. Sow productivity

Large litters of thrifty pigs raised to weaning are the first essential to a profitable pork program.



Cross sections of the loin at tenth rib of a meat-type hog (left) and a fat-type (right). The meat-type not only has less fat, but more red meat (muscle).

Replacement animals should be selected only from the largest, heaviest litters.

2. *Rapid, efficient growth*

Rapidly growing hogs which reach 200 pounds at 5 to 6 months of age are normally cheaper to produce than slower growing hogs. Therefore, some measure of the pig's ability to gain should be included in the selection program.

3. *"Meatiness"*

Amount of muscling is the most important criterion in determining whether a hog is truly meat-type. Only market hogs with good muscling and with a high lean-to-fat ratio are truly meat-type. Meat-type hogs can be found in all breeds of swine. The breeder must find those strains

within the breeds that are really "meaty" and use them in his breeding program.

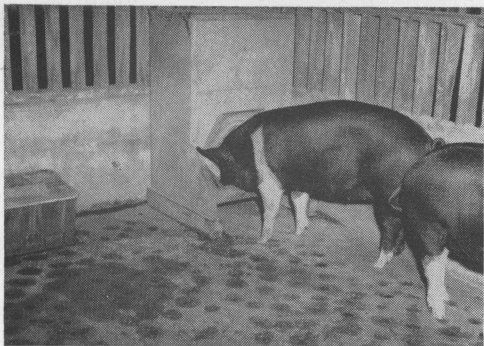
Muscling or "meatiness" is difficult to evaluate on the live hog by visual inspection alone. The *backfat probe* enables the producer to make more accurate selections for meatiness. The average backfat thickness, as determined by the live-probe method, is the best measurement that is presently available for estimating the amount of muscling and meatiness in the live animal. After the average backfat thickness has been measured accurately on the live hog, a producer can appraise meatiness in measured animals *by comparing their relative body thickness and amount of backfat thickness.*

The general plan for carrying out this "*On-the-Farm*" selection program follows:

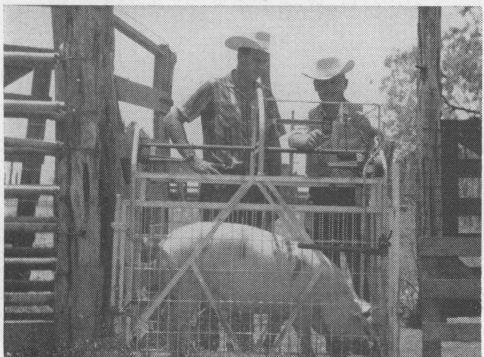
Plan A—For the Commercial Producer



1. Ear-notch the gilt pigs in big litters at birth. (Give each litter a different ear notch. Record ear notch and farrowing date of each litter. See page 8 for simple ear-notching system. To get as much information on each sow as possible, it is advisable to ear-notch all pigs in all litters at birth and weigh all pigs at 35 or 56 days.)



2. Place the gilts on full feed at weaning time. Leave them on a high energy ration until they weigh 180-220 pounds. This practice permits the gilts to display their inherent tendency to be meaty or overfat. (*Some producers may desire to separate the better looking gilts from the rest of the herd at 125-150 pounds and feed them a more bulky ration. This is acceptable as long as gilts are fed and managed alike.*)

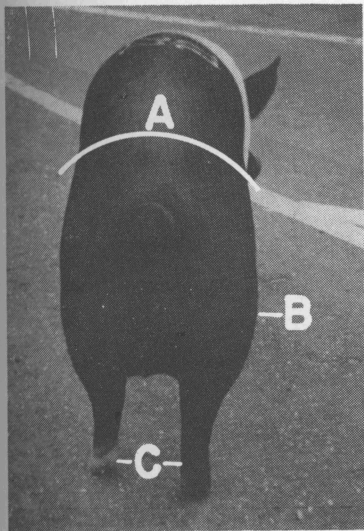
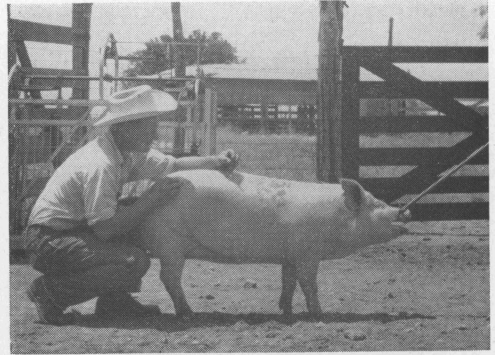


3. When the gilts weigh 180 to 220 pounds and are still on full feed, separate the ear-notched gilts from the rest of the herd. Eliminate off-type or undersized gilts. Weigh the good gilts and adjust their weights to a 154-day age basis, using the chart on page 9.

4. As the gilts come from the scales, probe for backfat thickness, using a small steel ruler. Instructions for probing are on pages 6 and 7. Adjust these probes to a 200-pound basis, using the chart on page 10.

5. Make Final Selection of Gilts on:

- Litter records
- Gaining ability
- Backfat probe
- Visual appraisal
 - Adequate length and depth of body; long, thick hams; strong, clean top-lines; firm, meaty shoulders; and trim, firm underlines
 - Sound feet and legs
 - A minimum of 12 evenly spaced, functional nipples
 - Absence of physical defects



← Rear view of a well-muscled, meaty gilt. Observe the clean topline (nice turn over the top) at (A) and the thick, heavy muscled hams as seen at (B). Also note the width of ham in relation to width of back. The gilt's feet and legs are on the corners and wide apart as shown at (C).

Plan B—For the Purebred Breeder

1. Follow the Production Registry program.
2. Participate in the breed Meat-Type Certification program.
3. Participate in the Breed Association "On-the-Farm" Performance Testing Program and Litter Testing Demonstrations at central stations.
4. Obtain feed conversion data on as many litters as possible.
5. Weigh and probe all boars and gilts at approximately 200 pounds from which replacement and sale animals are to be selected.

6. Select breeding animals using all information available on:

- Litter records
- Gaining ability
- Backfat probe
- Carcass data from littermates
- Feed conversion records
- Visual appraisal

The following are recommended standards to remember when selecting breeding animals:

Litter size—

At least 10 farrowed, eight or more weaned

154-day weight—

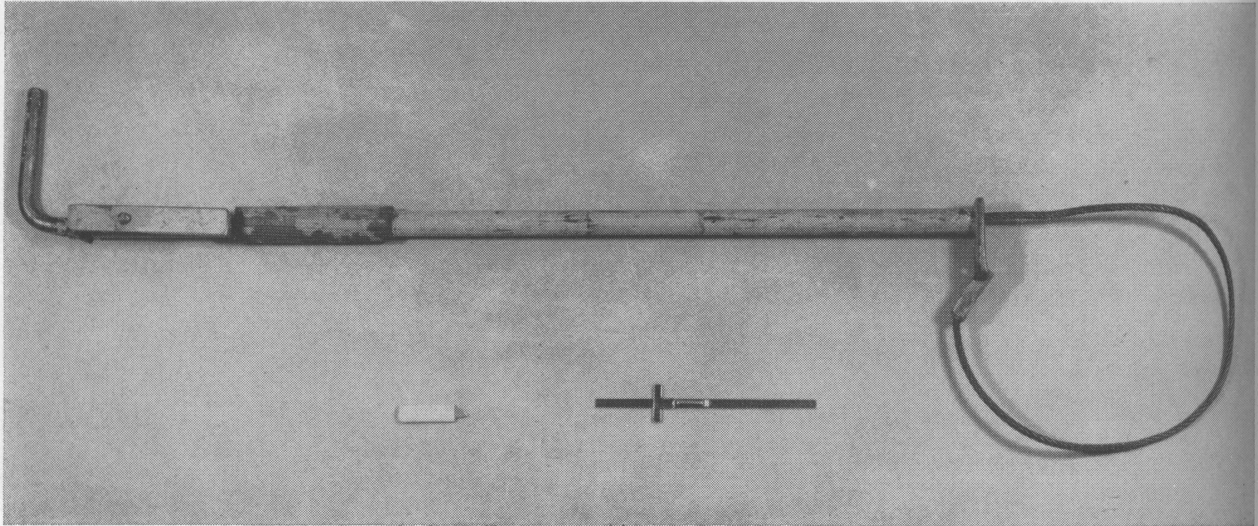
Gilts, at least 200 pounds
Boars, at least 220 pounds

200-pound backfat—

Gilts, 1.2 inches or less
Boars, 1.0 inches or less

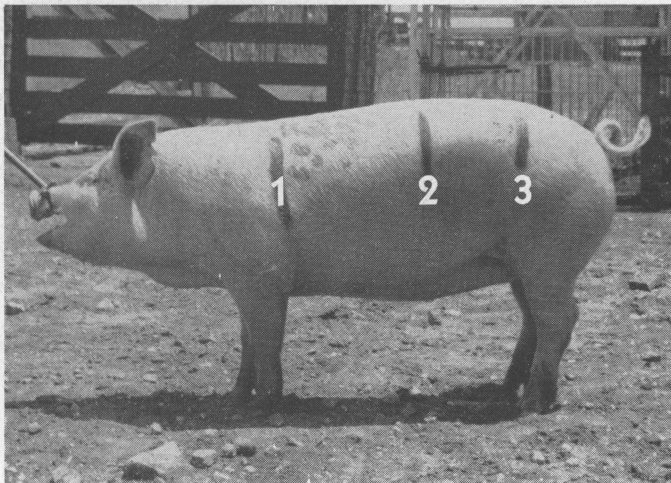
Accurate records are necessary in any swine improvement program. D-525, a *Sow Record Form*, appears on page 11 and D-524, a *Weight and Probe Record Form*, is on page 8. Additional copies of these forms can be obtained from your local county agricultural agent.

Making the Backfat Probe

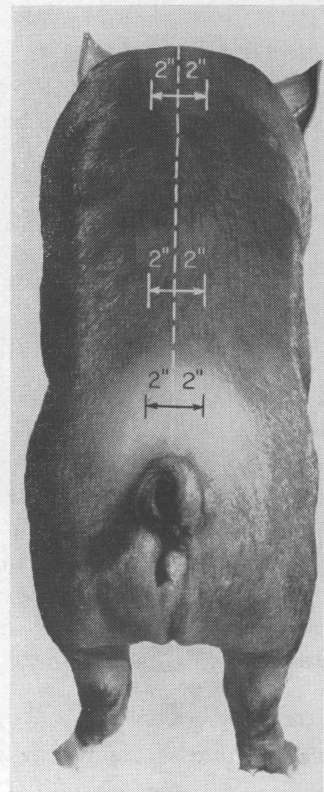


Equipment needed: Hog snare, knife or scalpel blade and metal ruler measured in tenths of inches.

Where to Probe



1. Probe behind the shoulder, straight above the elbow. 2. Probe at the last rib. 3. Probe midway between the last rib and the base of the tail.



All measurements are made approximately 2 inches from the midline of the pig's back. ➡

How to Probe

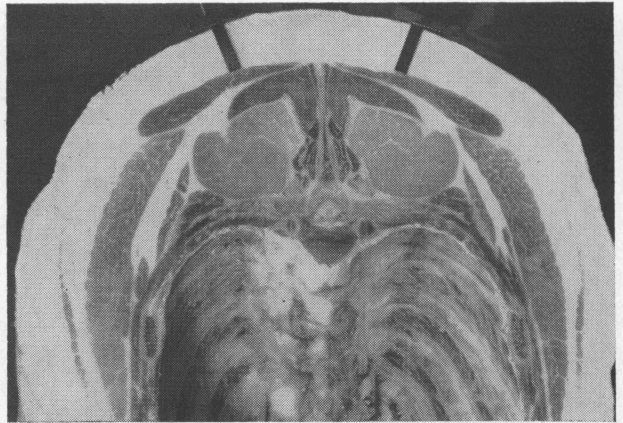
1. Wrap knife blade or scalpel blade with tape about $\frac{3}{8}$ inch from tip. (The tape prevents the blade from going too deep.)
2. Restrain hog with a nose snare.
3. Jab knife sharply through skin at right angle to hog's body.
4. Insert the ruler in the cut, slanting it to make a 90 degree angle to the pig's back.
5. In one decisive push, force the ruler through the fat to the muscle.
6. Push the clip on the ruler down to the skin. Be sure that no downward pressure is being applied to the ruler, but that it is resting firmly against the muscle tissue. Remove ruler and read the measurement.
7. *For most accurate results, make probe measurements at three locations on both sides of the pig or a total of six probes.*

8. Total the six measurements and divide by six to determine the average backfat depth.

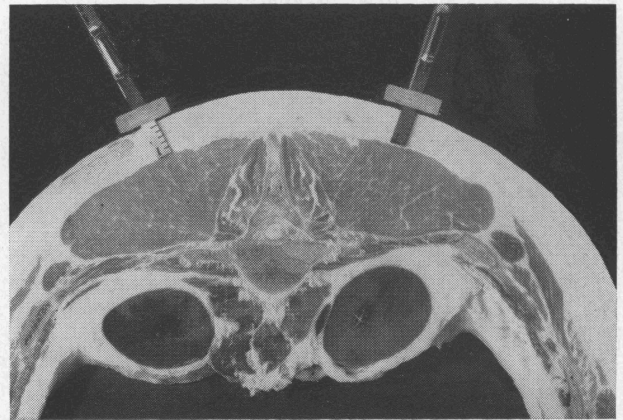
9. The Probe Adjustment Table on page 10 converts the average backfat probe measurements on each hog to a common 200-pound weight.

The cross-section pictures on this page show the muscle and fat relationship at each probe location.

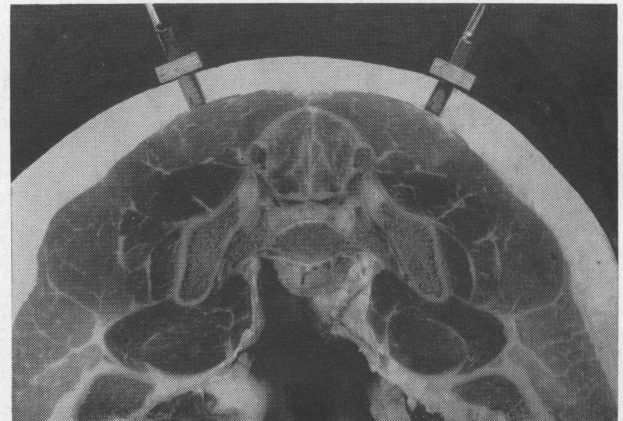
There is little chance for error when making the probes at the last rib and last lumbar region because you are probing down to solid muscle tissue. Because of muscle structure in the shoulder region, however, there is chance for error unless the proper technique is used. The muscle that the end of the steel ruler is touching in the cross section at the seventh rib is called the trapezius muscle. This muscle varies in thickness among individual hogs. One can probe through the trapezius muscle to the second lean muscle, without realizing it. For this reason, most accurate results are obtained by making probe measurements at each of the three locations on both sides of the hog. *If there is as much as .3 of an inch variation between the shoulder probes on either side, probes should be made again to determine the correct fat thickness.*



Seventh rib. (Probe behind the shoulder, straight above the back of the front leg.)



Last rib. (Probe at last rib.)



Last lumbar region. (Probe midway between the last rib and the tail.)

Using the Backfat Probe

- To make a reliable comparison among individual animals, all must have been fed and managed alike.
- To estimate most accurately the meatiness of gilts and boars and to predict their future performance, backfat probes should be made at 180 to 220

pound weights, while the hogs are on a *self-fed* grain and supplement ration.

- Because of sex influence, boars normally probe

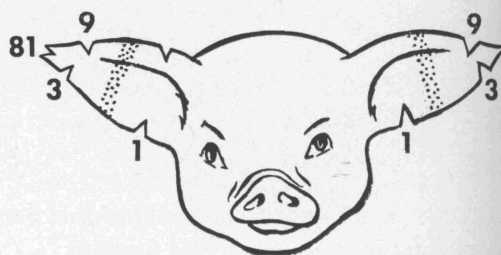
less than gilts, and gilts normally probe less than barrows. Research indicates that the following difference in backfat thickness among littermates may be expected at 200-pound weights:

HOGS WITHIN A LITTER	BACKFAT THICKNESS DUE TO SEX DIFFERENCE, INCH
Boars.....	About .1 less than gilts About .2 less than barrows
Gilts.....	About .1 less than barrows About .1 more than boars
Barrows.....	About .1 more than gilts About .2 more than boars

This means that a boar has to be more than .1 of an inch less than the gilts in backfat probe if progress is to be expected.

Ear-Notching System

- *Litter mark:* Use right ear. All pigs in same litter must have the same ear notches in this ear.
- *Individual pig marks:* Left ear is used to show individual pig within a litter. Each pig will have different notches in this ear.
- Take full notch in baby pig's ear so notch will be clearly visible, and not grow shut.
- Notching pigs as soon as possible after farrowing will prevent errors.
- To avoid mistaking a "3" notch for a "1" notch (or vice versa) do not notch in dark area of ear.



RIGHT

LEFT

Right ear—Litter number

Left ear—Pig number

WEIGHT and PROBE RECORD (Sample)

D-52

Ear Mark	Hog No.	Sex	Age in days	Actual wt. (lb.)	154-day adj. wt. (lb.)	P R O B E (inches)				200-lb. adj. probe	Remarks.
						Shldr.	Last rib	Last lumbar	Av. probe		
	1	F	148	192	203	L—1.3	1.0	1.0	1.10	1.14	No. 1 Sow, 34 lb. at 6 wks
						L—					
						L—					
						L—					

Adjusted Weight for 154 Days of Age

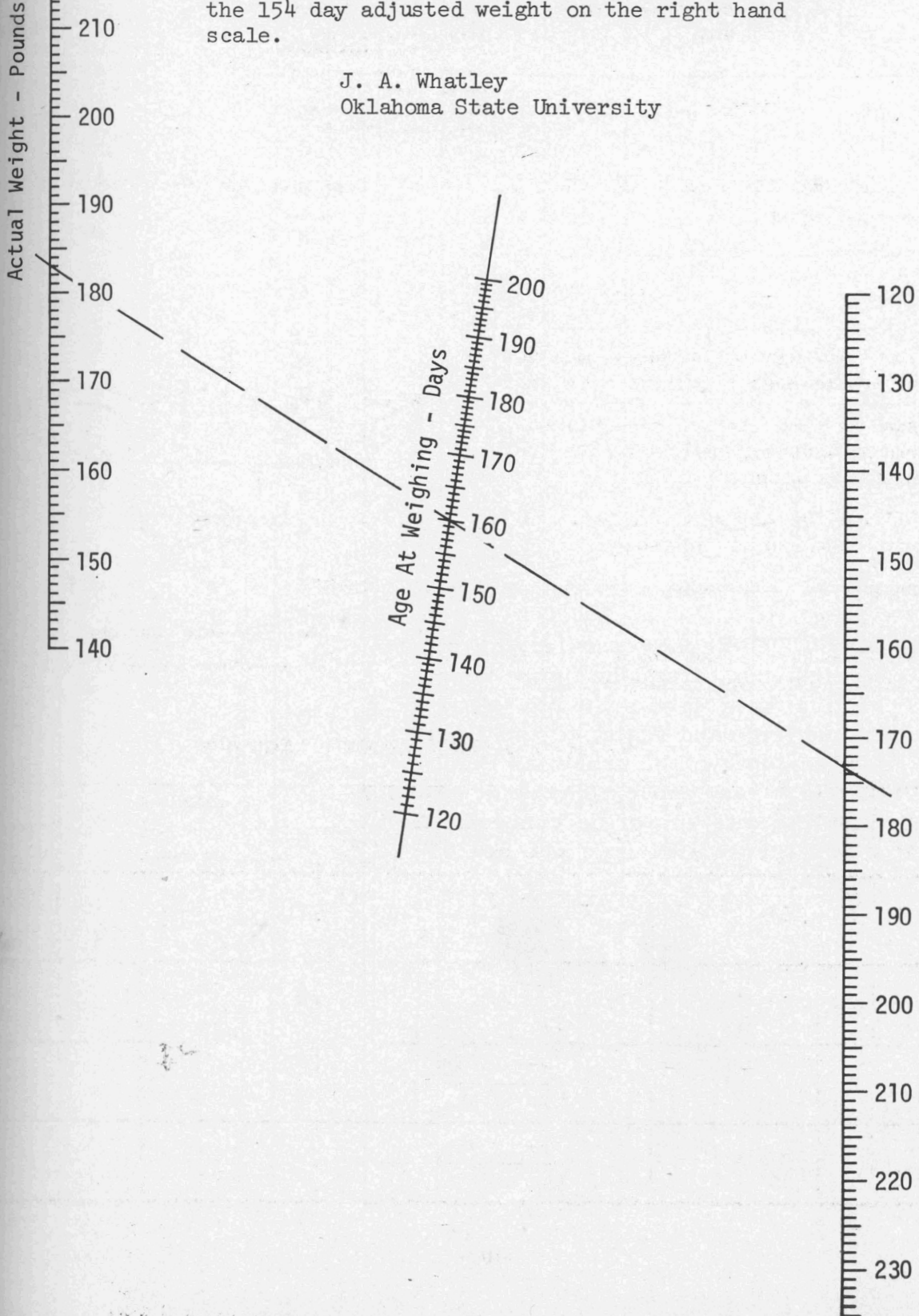
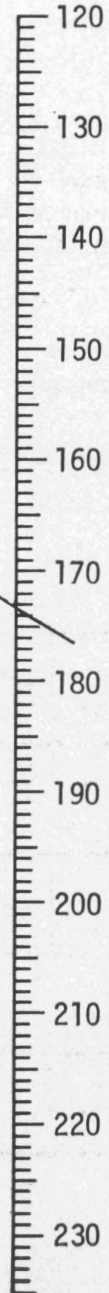
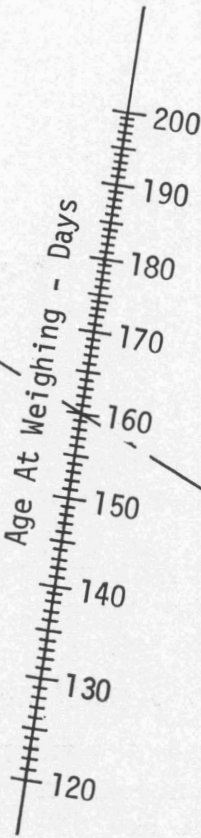
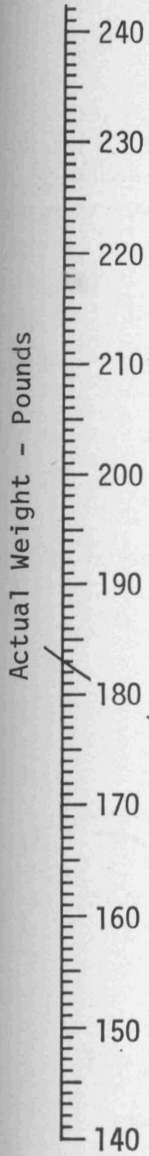
Lay a straightedge from the actual weight as read on the left hand scale to the age at weighing on the center scale. The straightedge will give the 154 day adjusted weight on the right hand scale.

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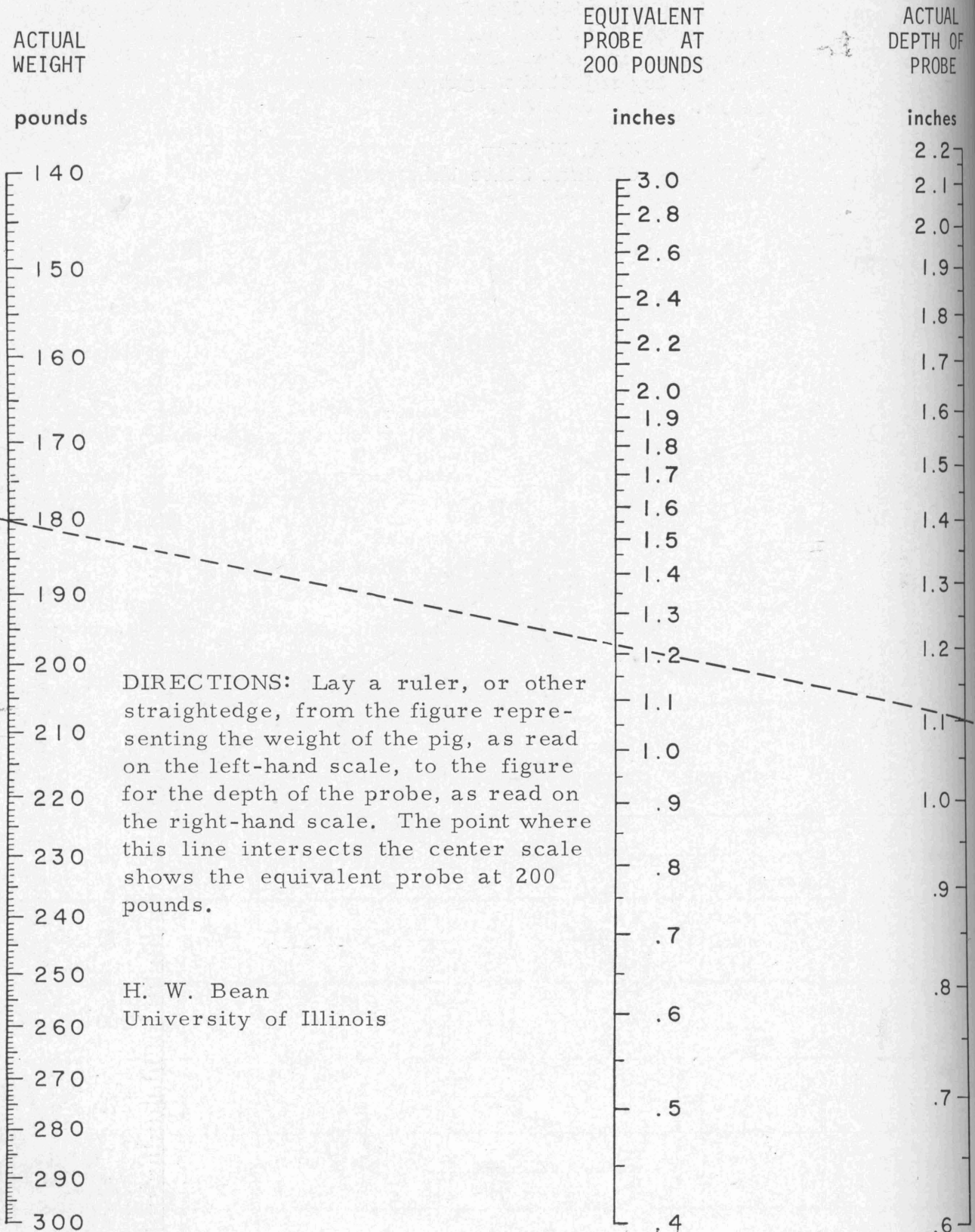
Actual Weight - Pounds

Weight Adjusted To 154 Days - Pounds

Age At Weighing - Days



Adjusting Probe to a 200-Pound Basis



SOW RECORD


D-525

Sow No. _____

Sow's _____ litter
(1, 2, etc.)

Birth date of sow _____

180-day wt. _____ 200 lb. probe _____ Feed/100 lb. gain _____



Ear notches

Farrowing date _____

Total farrowed Male _____ Female _____

Farrowed alive Male _____ Female _____

Total weaned Male _____ Female _____











_____ day litter wt. _____
21, 35, 56, etc.

Name _____ Reg. No. _____

BOAR NO. _____

Breed _____

BREED _____

Ear Notch R L		Pig No.	Sex	Birth Weight (Optional)	Weaning Weight	Age weighed days		Backfat Probe					Remarks
						Actual Wt.	Adj. 154 day wt.	Shldr. In.	Back In.	Loin In.	Av. In.	Adj. to 200 lb.	
													
													
													
													
													
													
													
													
													
													

Av. 154-day Wt. of litter _____

Feed per 100 pounds gain _____

**PRODUCTION TESTED BOARS
MATED TO**



**ON-THE-FARM SELECTED GILTS
GIVE**



**MAXIMUM POUNDS OF DESIRABLE
PORK AT MINIMUM COST**