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EC58-201 More Profit through Systematic... Crossbreeding of Hogs

Paul Q. Guyer

Lavon Sumption

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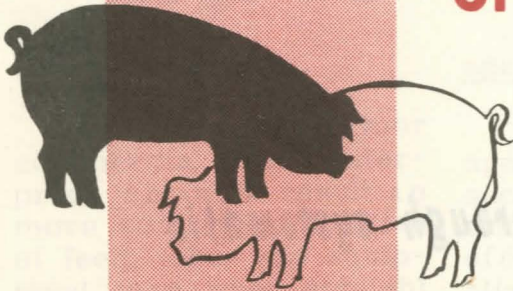
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More Profit

THROUGH SYSTEMATIC. . . .

Crossbreeding

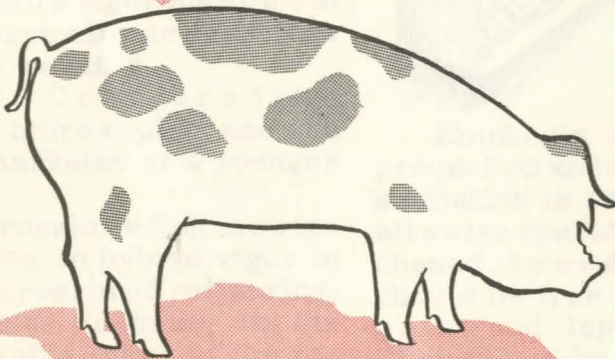


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SYSTEMATIC CROSSBREEDING CAN RESULT IN:

- Larger litters farrowed and weaned
- Faster growth rate of pigs from weaning to market
- More efficient utilization of feed, labor and equipment



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More Profit through systematic

CROSSBREEDING OF HOGS

by

● **PAUL Q. GUYER**

Asst. Ext. Animal Husbandman

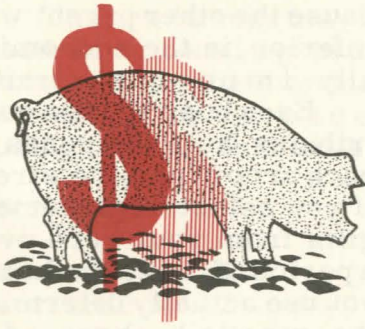
● **LAVON SUMPTION**

Asst. Prof., Animal Husbandry Dept.



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Cautions



Advantages

Crossbreeding in your commercial swine enterprise should result in more efficient utilization of feed, labor and equipment than when straight breeding is used. Compared to raising purebreds for commercial swine production, crossbreeding has the following advantages:

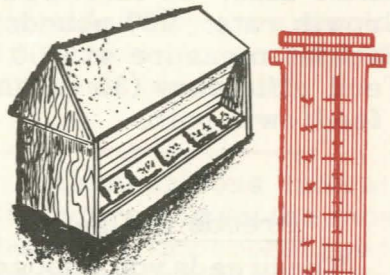
1. Crossbred dams produce larger litters, give more milk and are better mothers.
2. Crossbred litters are more vigorous at birth and have a lower death loss up to weaning.
3. Crossbred pigs grow more rapidly and can be marketed at a younger age.

Crossbreeding in swine results in hybrid vigor in the crossbred offspring. It tends to bring out the favorable traits of the individuals and breeds used and to mask the unfavorable traits.

Crossbreeding swine, in itself, will not make your swine operation successful. Your plans should be carefully made with special attention given to the following:

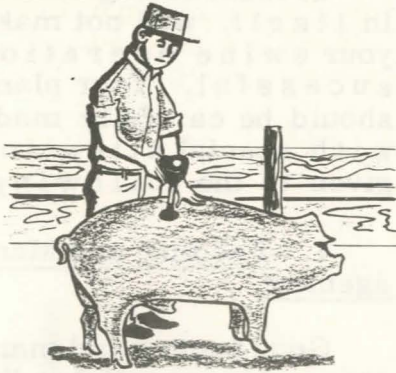
1. Feeding and Management

Good feeding and management is essential to the success of any swine operation. The full advantage of crossbreeding is not realized except under favorable feeding and management even though crossbred pigs may compare favorably with straight bred pigs under poor conditions.



Emphasis on disease prevention and control and sanitation is necessary in all swine operations. Purchased breeding stock should be free of brucellosis and leptospirosis. They should be vaccinated for cholera and free from evidence of other swine diseases.

2. Selection of Breeding Stock



In spite of the advantages of crossbreeding, crossbred pigs may be inferior to one parent be-

cause the other parent was inferior in the economically important traits.

Each boar you use contributes half the genes to each crop of pigs he sires. If you select replacement gilts from your herd over a period of time, the boars you use actually determine the genetic background of the entire herd. Therefore, you should select and pay for boars on the basis of superior records for the economically important traits (litter size, growth rate, carcass quality and feed efficiency).



Desirable records for boars to be used in a sound breeding program are as follows:

Litter size: $\frac{10 \text{ farrowed} - 9 \text{ raised}}$

Growth rate: $\frac{200 \text{ pounds at 5 months}}$

Backfat measure at 200 pounds: Below 1.3 inches

Feed efficiency (35 to 200 lbs.): 300 pounds or less feed/cwt. gain.

Breeds to Use

The breeds you choose should be determined, to a large extent, by the supply of superior performance tested boars available. All of the following standard breeds will cross to advantage:



Berkshire
Chester White
Duroc

Hampshire
Poland China
Landrace

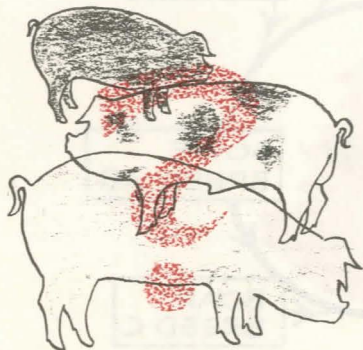
Spotted Poland China
Yorkshire
Tamworth

The new breeds may be used in crossing in the same way as the standard breeds. Wide crosses (using breeds that have a minimum of common parentage) should be made to obtain maximum hybrid vigor. The new breeds and their parentages are:

<u>Breed</u>	<u>Parentage</u>
Beltsville No. 1	Landrace, Poland China
Beltsville No. 2	Yorkshire, Duroc, Hampshire, Landrace
Landrace - Large Black	Landrace, Large Black
Landroc II	Duroc, Landrace, Tamworth
Maryland No. 1	Landrace, Berkshire
Minnesota No. 1	Landrace, Tamworth
Minnesota No. 2	Poland China, Yorkshire
Minnesota No. 3	Welsh, Large White, Gloucester Old Spot, Beltsville No. 2, Minnesota No. 1, Minnesota No. 2, Poland China, San Pierre
Montana No. 1	Landrace, Hampshire
Palouse	Landrace, Chester White
San Pierre	Berkshire, Chester White

Hybrid or crossbred boars (crosses of standard and/or new breeds) can be used in crossbreeding provided they are superior in performance and wide crosses are made.

How Many Breeds to Use



Comparisons indicate that you would get the most benefit from crossbreeding by using 3 or 4 breeds, provided superior breeding stock is available in that many breeds.

Following is a summary of the approximate advantages of using different numbers of breeds compared with raising purebreds.

TABLE 1 - ADVANTAGES OF CROSSBREEDING USING 2 TO 4 BREEDS

Type of Mating	No. Born	No. Weaned	Advantage over Purebreds				Feed effic. of growing pigs
			Wt. at weaning		Wt. at 154 days		
			pig	litter	pig	litter	
Use of 2 Breeds PB. ¹ sows, Br. A x PB. boars, Br. B	2	7	7	20	12	25	5
Use of 3 Breeds CB. ² sows, Br. AB x PB. boars, Br. A or B	12	20	9	35	13	40	5
Use of 3 Breeds CB. sows, Br. AB x PB. boars, Br. C	12	20	10	40	14	45	5
Use of 4 Breeds CB. sows, Br. ABC x PB. boars, Br. D	12	20	11	41	15	47	5

¹PB. = Purebred

²CB. = Crossbred

These data show that the crossbred dam contributes fully half the advantages of crossbreeding.

A Systematic Crossbreeding Plan

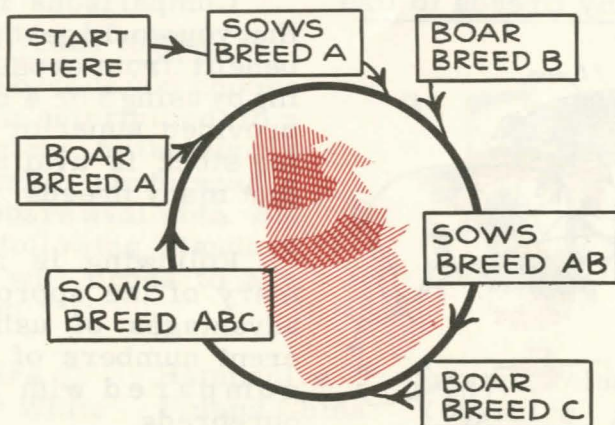
1. Select 3 breeds with superior performance tested boars available.

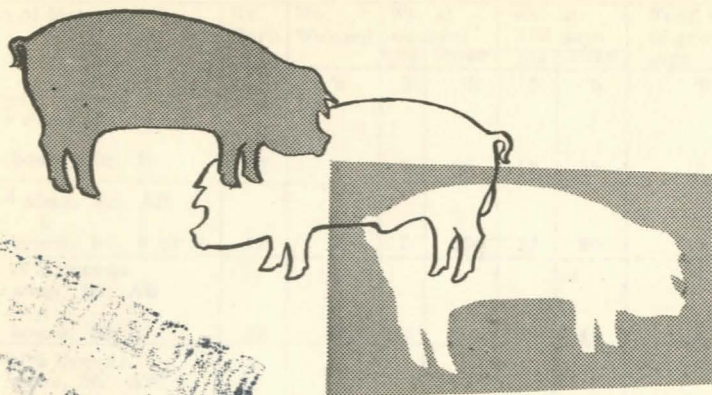
2. Use the best of your present crop of gilts.

3. Mate female stock of Breed A to boars of Breed B. Retain cross-

bred gilts to mate to boars of Breed C. Then retain the 3-way cross gilts to mate to boars of Breed A to start the rotation again.

4. Keep the breeding and management program simple, yet systematic, by marketing crossbred females after two litters and boars each year.





**THE SUCCESS OF YOUR CROSSBREEDING PROGRAM
DEPENDS UPON:**

- Making wide crosses
- Development of a systematic breed rotation
- Using superior performance tested boars
- Using crossbred females with superior performance
- Using a sound feeding and management program