The Importance of a Good Underline

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The very survival of a newborn pig depends on a place to nurse and an adequate supply. And since it's the nature of each pig to claim a nipple and refuse to share it, there is need for one for each survivor. A large, thrifty litter is the first prerequisite to profit in the swine business.

It is gratifying to see progress, and progress is exemplified in Figures 1 and 2.

In Figure 1, we have an early French print from the 18th century, quite a story in itself of a Primitive Female Pig, with an unbelievable underline.

Figure 1. Early French print from the 18th century

In Figure 2, we see how far we have come with seven well-spaced nipples on a side.

Figure 2. An ideal underline with seven well-spaced nipples

The successful swine breeder must be a competent judge; each time he decides on a boar or replacement gilt for his herd, he is judging. Despite the increased usage of records, we have no substitute for direct inspection of the live animal. One of the most desirable characteristics in selecting breeding stock is a sound underline. Profit or loss can hinge on this factor.

Probably productivity on the part of the sows is the most important aspect of an efficient herd.

The inherited traits of sows to breed regularly and produce and raise large litters can be maintained in the herd only by selecting and ruthless culling of those which do not perform.

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Often breeder judges are accused, and sometimes rightfully so, of paying too much attention to a weakness with which their own particular herd is plagued. However, we have a fundamental problem with underlines that can make or break a herd, or for that matter even a breed. What greater reputation can a swine breed have for its sow lines than "They are excellent milkers with good underlines," and good mothers seem to go hand in hand with the latter two qualities.

Both gilts and boars should possess twelve or more prominent, well-spaced nipples, free from defects of any kind. It is almost an accepted fact that the number of pigs a sow weans will never exceed the number of functional nipples she possesses. It is just as important that the boar should possess twelve or more well-spaced normal nipples, since gilts inherit one-half of any characteristics from the sire and one-half from their dam, and some of these gilts will be retained in the breeding herd or sold as breeding stock.

The gilts retained for breeding should be selected from the productive and prolific families. The sows that raise the large litters with heavy weaning weights are excellent milkers and usually are thin and not too good to look at when their pigs are weaned; but this is the kind to look for as replacements in the breeding herd.

Selection

In judging shows, there is the breeder who will see you a year after you placed his favorite gilt down in class. He will describe vividly the reasons you gave over the microphone at that time, and add, "I just thought you should know that when Nellie farrowed, all those teats worked." In this instance he could be 100 percent right. But you must justify your placing, and rightly so, by saying, "In judging, you judge what you see on that day only. Guessing future developments or possibilities in underlines is not your job."

Studies by the University of Missouri have shown that nipple numbers have a heritability of 39 percent. Since nipple number heritability is relatively high, you can see the importance of selection. Nipple numbers can be increased or could decrease in a herd rather rapidly, depending on the owner's selection pressure for this trait.

But now let's discuss the underline in detail.

Ideal Underline

The ideal underline should show quality in each section, with all teats capable of proper functioning. (See Fig. 2). Teat placement should begin close to the foreleg (a good rule is at least three on each side in front of navel), having not less than six well developed, properly spaced teats on a side. Teats should be spaced far enough apart to allow for proper mammary development.

Inverted Teats

![Figure 3. Illustration showing inverted nipples](image)

The inverted teat comes in degrees of prominence (see Fig. 3). The four teats from the front are all inverted, the fourth teat back being the extreme example. In all cases the cord of the teat is up inside the body cavity, turning back into the surrounding tissue rather than protruding outward. However, in some instances a lip or fold of skin will hang down and resemble a functional teat, until on close inspection you see the
shape of the teat is flat. Regardless of degree of prominence, none should be acceptable. There is substantial evidence to indicate that inverted nipples are heritable and can be transmitted from generation to generation with regularity.

Inverted nipples do not function and just decrease the number of functional teats and the total amount of milk production. It has been observed that the center or middle teats are most productive and yet most inclined to be inverted.

**Pin-Nipple**

The Pin-nipple is seen in Figure 4. The fourth teat back from the front is nonfunctional. It does not have a canal or access to the mammary gland. It often is between two functional teats as in Figure 4, or where a normal teat should be. This type of teat is sometimes called a blind teat. Regardless of label, it is to be discriminated against.

**Underdeveloped Underline**

The underdeveloped underline is seen in Figure 5. This underline is on the type of gilt that typically proves to be a poor milker. The teats are small and the mammary gland is underdeveloped. Milk is produced in the mammary gland, and the more productive the gland is, the better. If the gland is partially filled with fatty tissue, the possible secretion will be correspondingly decreased.

**Pendulous Udder**

The Pendulous Udder is shown in Figure 6. A sow with a pendulous udder section.

**Figure 4.** Illustration showing pin-nipples

**Figure 5.** A gilt with an underdeveloped underline

**Figure 6.** A sow with a pendulous udder section

**Figure 7.** A boar showing pendulous udder section
In Figures 6 and 7, we see this particular sow and boar showing a pendulous condition of the rear udder section. When this broken udder section is nursed by this sow's offspring, in nearly every instance it will continue to break down more and hang loose. In some cases after the sow farrows the pendulous section is swollen, hard, and feverish, and it is almost impossible for the baby pig to get hold of and nurse. Further injury many times results to the sow's udder from the hind leg as she gets up and down.

Do let's give praise where praise is due - and note that one of the biggest improvements ever accomplished in the livestock world is illustrated in Figures 1 and 2.