

CAN VISUAL TRAITS
BE RELATED TO PERFORMANCE

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Swine size and scale and its relationship to growth and production are popular and controversial subjects. Visual indicators can be identified with some growth and production traits, but we need to be open-minded when using and discussing them.

Controversy rages over selection for frame size with very little true thought given to its relationship to growth rate. Hog breeders needed to change from the compact stress-prone "kind" and have been able to change because of the wide genetic base and phenotypic differences that we are lucky to have in our industry.

Many breeders vividly remember the 60's when hog men went too far with the trend of making hogs more muscular and earlier maturing. Some think we have gone too far the other way and would like to go back to the 60's. Others never really left. I wonder when breeders will better benefit from past experiences and avoid the time and cost of selection for traits that will not be needed in the future. Some now have picked them so big without paying any attention to soundness or true growth. Others of late have picked them short and fat underneath, calling them "more productive". The sooner we all learn that production and reproduction are separate traits, the more progress we can make in other areas.

Many have felt that we needed to put more emphasis on larger mature size while others strongly disagree and favor pigs for size at logical slaughter end points. I believe that the selection for frame size will increase mature size, BUT unless we also select for growth rate, it may not increase growth. Height at the point of the shoulder and growth rate have some correlation, but that correlation is not perfect. There are strong indications that rate of maturity and growth rate are two entirely different traits. This really means that we can have late maturing hogs that are fast growers and late maturing hogs that are slow growers. This seems to be really hard for judges and breeders not to generalize about one kind all being strong in both these areas.

Really large framed hogs require large framed parents. This extra size, to produce large framed offspring, requires larger replacements, and larger seedstock herds must be maintained. Part of this maintenance cost is paid for by increased salvage value. But the real cost to the producer is when the larger framed animal's reproduction is reduced - a hard fact that has been well documented in several larger cattle breeds. The reduction of reproduction is a cumulative effect of later puberty (that is slower rebreeding, not cycling until a later age, or not cycling at all). As we get these hogs bigger framed, we need to select for other traits with the same pressure.

Whether you agree or disagree with the above philosophy, we should make absolutely no excuses for reproduction failures as we increase size and frame.

Some of the practical visual indicators we see in the showring or at the farm play a big part in selection for bigness, growth, and reproduction. Part of the

controversy really isn't because we don't believe what the other person is saying, but we resent having his philosophy shoved down our throats. Many controversies have arisen the last year or so which are not beneficial to the industry but are somewhat beneficial to certain individuals.

Picking pigs by visual indicators for growth is somewhat dependent on knowing as much about the pig as possible. I'm sure in my own situation where we test 700 boars a year that I can better evaluate ours at home under a constant environment than I could at a show. But on the other hand, what else is there to judge at a show than indicators?

In the last several years, we have fallen into judging "terms" instead of judging the whole pig. There are more terms being tossed around than there are parts of the pig. As I evaluate a pig, a single indicator by itself is not of any real great value, but a number of these visual indicators together convinces me that this individual pig has "better" potential to grow and get bigger, be more efficient, and take the elements of stress that we put pigs through in our modern hog raising systems.

We could pick out several parts of the pig which are indicators. A good starting point would be the head - which I believe should have some dimension between the eyes and ears. The ears that are a little coarser seem to indicate a bigger hog.

Several indicators of potential growth are vital as these are economic traits that should make sense to the commercial and purebred man alike.

Length of Side - I believe is the best indicator of a hog getting bigger with added ability to grow faster. I measure length of side from the back of the front leg to the front of the back leg. Long-sided pigs are not only a good indication of a bigger kind of pig, but a short-sided one is surely going to be limited in his continued growth.

Muscling - or lack of muscling can be a visual growth indicator. The pig that's really tight is going to quit earlier and probably be slower in his later growth pattern. The small-framed fat pig will do likewise mainly because he is limited in frame. The bigger-framed pig tends to grow faster, put on less fat, and for these reasons, requires less feed per pound of gain. A pig that is short, thick, tight, and bunchy muscled is limited in growth after a certain point.

Tall-Fronted - height at the shoulders or withers is a good indicator of an individual having more potential to grow faster. To me, this is the second best indicator of potential to get bigger. Cattle people have used this as a true measurement point instead of guessing at something that only the one talking about it can see.

Structural Soundness - in itself may not be an indicator of growth potential, but structural soundness is a combination of characteristics which makes the bones and muscles move in a natural fashion to enable him to carry out his natural functions. Many unsound animals have their growth rate impaired by their inability to get around. A big exception to this is the test station pig that really grows and isn't sound. I'd recommend all test stations give a soundness score and add it to the information in the catalog. We are particularly in trouble in the hog industry with need to improve upon the set of the hock joint and placement of the scapula which is too far forward.

Chest Capacity and Depth of Rib - are really big indicators of growth rate, especially in confinement. Capacity in that front end usually will carry back into the remainder of the body. Whenever we can get bigger framed pigs that have chest capacity and depth of rib, great improvement will be made in the industry. Many commercial men still pick their boars at our place on chest capacity. I truly believe the hog with the big front end has greater growth potential than those narrow ones that aren't deep or wide in the rib and chest.

Depth of Middle - the old saying "that looks like a good doing pig" usually is used to describe a pig with some middle. Pigs big through their middle show more potential for growth than the gutless ones that are shallow-bodied. One must be cautioned, though, because many of them lately are fatter with the above description. But if we emphasize putting a number of indicators together and the pig is long enough, this fat pattern will not be present.

Bone - some really heavy-boned pigs that are short in their canon bones are sooner to quit in their growth pattern. Likewise, real refined pigs usually are not real fast growers.

Reproduction - visual indicators of good reproduction are simple to identify: a good underline with well-spaced prominent nipples; a vulva that is normal-sized and not tipped; a gilt that cycles normally; a boar that can mount and enter normally; and a gilt or boar with a good disposition when under stress. Many of the above are listed in the N.S.I.F. Handbook.

In summary, we badly need descriptive terms and capable people using them to describe traits we are trying to emphasize and tell people why one animal is being picked over the other. We need to admit that all hogs will not be tested in Stations or at home, and that hog shows will continue to be the show window of breed and industry improvement. Perhaps we need to improve the shows?

Even though the Test Station Managers believe that testing is the ultimate tool, and the Geneticist believes that traits are genetical and can be worked out on a computer, and others have experimented with measurements pertaining to growth, and even though some of these may be less fallible at times than the eyeball, visual evaluation of growth indicators will continue to be our main tool in selection for both the commercial and purebred man, whether it be in the barnyard selection replacement gilts or picking the Champion boar at the N.B.S.

So what's the answer? Let's not create new terms just to say something different. Let's not evaluate all breeds the same. Let's use people with integrity to do the important job of judging. Let's write editorials that are meaningful with positive information before negative things happen. Let's work together as a united body to improve the industry, be innovative but not follow every little fad. Let's be practical - no one breed, judge, or producer has all the answers. And, maybe most of all, let's be open-minded. Let's actually test some of these bigger framed pigs to identify the ones that can grow.

Some of you are going to say that visual indicators for growth and reproduction are worthless; but you'd better be careful, someone might ask you how much progress Test Stations have made over the last 10 years in Growth Rate!