The New Purebred Swine Evaluation System

A. P. Schinckel
T. S. Stewart
D. L. Harris
D. L. Lofgren
Performance Data Collection Analysis, and Output

To participate in STAGES, the purebred producer collects basic performance information and submits it to his breed association for analysis. Only four measurements are required — (1) days to 230 pounds or average daily gain; (2) backfat thickness obtained on boars, gilts, and barrows; (3) litter size; and (4) 21-day litter weight for all purebred sows with either purebred (registered and unregistered) or crossbred litters. The purebred associations are providing the performance data input forms. For registered litters, the forms will be pre-printed with the sire, dam, and pig registration numbers, ear notches, birth date, and sex.

Complete herd testing is very important. Each individual will be more accurately evaluated through the accumulation of additional information on relatives and larger contemporary group sizes.

Once the performance information is submitted, the STAGES computer program adjusts the data for fixed effects (e.g., sex, age, parity, weight), calculates contemporary group averages, identifies data from relatives, and combines each individual's performance data with those from relatives to calculate the EPDs and indexes. The resulting output forms give a complete summary of the performance of each animal, its EPDs, and index values.

How to Get Started

The newly developed Swine Testing and Genetic Evaluation System now makes possible a more thorough and accurate evaluation of purebred swine herds. Selection of superior individuals based on STAGES analyses can accelerate the genetic improvement so important to commercial swine production.

The ability to provide productive, predictable, purebred seedstock is the advantage STAGES participants will have over all other seedstock producers. Early involvement in the program will allow more precise genetic evaluations and more complete performance pedigrees.

For further information about STAGES or to obtain an instruction booklet and performance data input forms, contact your purebred association.

Introducing STAGES
The New Purebred Swine Evaluation System

Purdue University
Cooperative Extension Service
West Lafayette, Indiana

in cooperation with the
Agricultural Research Service
and Extension Service
U.S. Department of Agriculture

Cooperative Extension work in Agriculture and Home Economics state of Indiana, Purdue University, and U.S. Department of Agriculture cooperating. H. A. Weidworth, Director, West Lafayette.

Issued in furtherance of the acts of May 8 and June 30, 1914. The Cooperative Extension Service of Purdue University is an affirmative action/equal opportunity institution.
Introducing STAGES—
the New Purebred Swine Evaluation System
A. P. Schinchel and T. S. Stewart,
Animal Sciences Department,
Purdue University; and
D. L. Harris and D. L. Loegren,
Agricultural Research Service,
U. S. Department of Agriculture

The pork industry continues to undergo dramatic changes. Competition is becoming so intense that only the most efficient commercial producers are likely to survive. For them, efficiency means being able to produce quality pork at the lowest possible cost. In the past, such efficiency could be gained through improvements in housing, health, and nutrition. Today, however, the “efficiency edge” is tied primarily to the animal’s genetic potential for improved feed conversion, increased number of pigs weaned, fewer days to market, and higher market value based on new carcass-value pricing programs. This means commercial producers more and more are looking for reliable sources that will improve their production efficiency.

To meet this demand for superior seedstock, purebred producers need an evaluation system that leads to genetic improvement and documents the increased value of superior individuals. Such a system has been introduced that will fulfill both goals. Called STAGES, this comprehensive nationwide program allows development of consistently superior purebred seedstock, which will give participants a distinct advantage over all other seedstock producers.

What STAGES Is and Does
STAGES, which stands for Swine Testing and Genetic Evaluation System, is a series of computer programs that will analyze performance data provided by participating purebred producers. Developed at Purdue University, this is a cooperative project involving the USDA Agricultural Research Service and Extension Service, the National Association of Swine Records, the National Pork Producers Council, and the individual purebred associations. The data handling and analyses are done on the breed association computers.

STAGES has been implemented in six developmental steps. The system analyzes both reproduction and post-weaning traits, then combines the genetic evaluations for these traits into three alternative indexes — maternal, general, and terminal sire. It will also identify the top sires within each breed through its across-herd sire evaluation.

When all six steps are completed, STAGES will analyze records and evaluate on a national basis all tested individuals, including those in central station, barrow, and on-farm tests.

What STAGES Provides the Participant
STAGES provides the most precise estimate of the genetic effects an animal will transmit to its offspring. Called expected progeny deviations (EPDs), these genetic estimates for sow productivity, growth rate, and backfat thickness will be based upon available individual, sibling, ancestral, and family information.

STAGES provides more accurate genetic evaluations than past performance testing programs. Thus, selection of the highest ranking individuals based on STAGES analyses will allow more rapid, consistent genetic progress and selection based upon individual performance.

STAGES provides the criteria for selecting purebred animals that will best improve the efficiency of commercial swine herds. Three alternative indexes — maternal, general, and terminal sire — are calculated. The maternal index places greater emphasis on reproductive performance than do the other indexes. The terminal sire index emphasizes postweaning performance.

STAGES provides valuable merchandising information by documenting genetic worth. Because the indexes are stated in economic terms, they can be used to group boars and gilts into different price categories. For example, the prebred producer might charge a base price for all boars below average, then raise the price for the higher-indexing boars, which have increased value to the commercial producer.

STAGES provides performance pedigrees, which document consistent genetic heritage thus increasing the value of seedstock from superior ancestors. Identification of the truly superior seedstock within purebred herds is only possible when complete performance pedigrees are available.