Pig Genetics Info

Benefits of using PIGBLUP in pig breeding programs

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Have you considered using PIGBLUP?

Pig breeders routinely record objective information about their pigs including pedigree information, growth rate, backfat and litter size. Faster genetic gain in economically important traits relies on the optimal use of all available data. Since data sets are often very complex, software programs have to be used for the genetic analysis of data.

PIGBLUP is a user-friendly genetic evaluation system specifically designed for genetic improvement of pig performance. Initial settings enable users to get started quickly without knowing all of the fine details of the technology. A windows interface makes it easy for breeders to navigate the system.

PIGBLUP has a number of tools that allow management of all aspects of pig breeding programs. Support for the effective use of these tools is provided to users by the AGBU pig genetics team.

Any pig breeder who has an electronic herd recording system in place and selects replacement stock or sells breeding stock should use PIGBLUP in order to make faster genetic gain through better use of the available information.

PIGBLUP provides Estimated Breeding Values (EBVs)

EBVs are the best predictor of genetic differences between animals since a number of sources of information are used to derive EBVs. PIGBLUP provides EBVs for eight performance, carcase or meat quality traits as well as five reproductive traits of the sow.

PIGBLUP uses information from all recorded animals and information on genetically related traits in order to derive EBVs for individual traits. Therefore, genetic improvement of traits with low heritabilities, like litter size, and traits that cannot be recorded on selected animals, for example meat quality traits, benefits from the use of PIGBLUP.

Selection for increased profitability – the $Index

Profitability of pig production is influenced by a number of traits. The $Index incorporated into PIGBLUP is a tool that combines all economically important traits into one $Index by weighing EBVs for individual traits with their economic importance.

PIGBLUP users are able to use their own performance, economic and marketing information to set up a $Index that is specific to their breeding program. In addition, multiple $Indexes can be set up for different production and market systems or for individual customers of PIGBLUP users.

Maximum genetic gain and minimal increase in inbreeding levels

The Selection and Mate Allocation module allows breeders to optimise both, their selection and mating decisions. The module provides lists of boars and gilts to be selected and lists of which boar to mate with which sow. These lists provided by PIGBLUP make selection and mating decisions straightforward.

Support in data preparation

PIGBLUP is not a herd recording system. However, PIGCHECK has been developed, as part of the PIGBLUP software, in order to aid users in the preparation of data suitable for genetic analyses.

Viewing of EBVs is easy

The windows interface allows display of EBVs and the $Index in numerous ways and makes viewing of this information simple.

Genetic trends demonstrate the rate of genetic improvement

The rate of genetic improvement can easily be monitored via graphs of genetic trends. Genetic trends highlight differences in average EBVs between animals born at different times and are available for all traits as well as each $Index that has been set up.

In order to market their seedstock, PIGBLUP users often use genetic trends to demonstrate to customers the effectiveness of their breeding programme.

Environmental trends are a valuable management tool

PIGBLUP also offers a valuable management tool by displaying environmental trends. These trends are used to monitor the effect of changes in management decisions on performance. Environmental changes may include differences in feeding regimes and housing conditions or changes in health status over time.

Audit of breeding programs

Success in pig breeding relies on continuous monitoring procedures. Key parameters of the breeding program are summarised over years in the Genetic Audit of PIGBLUP allowing users to monitor their breeding program closely.

Development of PIGBLUP continues along with training of PIGBLUP users

Australian Pork Limited is funding further development of PIGBLUP ensuring continuous updates of the software. In addition, the AGBU pig genetics team provides support to PIGBLUP users. Pig genetics workshops are held every 18 months providing users the opportunity to learn about the latest additions to the software as well as to recommend new developments.

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