

## Swine Disease Resistance Assay

Pharmagap Inc, an Ottawa-based biotechnology firm, in conjunction with the Atlantic Swine Research Partnership Inc. (formerly PEI Pork) and the Canadian Centre for Swine Improvement (CCSI), has developed a Disease-Resistance Assay that can measure the general capacity of an animal to resist both bacterial and viral infections. The test only requires a small blood sample. The blood cells are exposed to a number of chemicals that are known to trigger an immune response. The test measures the intensity of the response of various blood cells, which in turn, determines the potential of the animals to resist diseases.

The test is a tool that could be used to select animals for breeding, for herd management purposes, or for the evaluation of the effects of food formulas, nutraceuticals, and other factors which act on the immune system of the animals.

Currently, PharmaGap can perform the test in-house for any type of animal and for the following applications involving relative measures or comparative evaluation:

1. Evaluate the effects of immuno-modulators on animals (food additives or other formulations):
  - a. Test already performed on 22 pigs. The immuno-modulator was effective at boosting the innate immune system and the test was effective at measuring the effects on the different animals and the dosages at which the modulator was most effective.
  - b. A similar test is being performed (Nov. 2003) on chickens comparing the performance of a group of birds with growth hormones and another group with an immune system booster.
2. Individuals within a group may be ranked according to their probable immuno-resistance potential.
3. The effects of the environment on the animals' potential immuno-resistance.
4. A correlation of the immuno-resistance potential can be established between the performance of the animals and factors such as the environment, feed formula, etc.

A study is in progress to establish a standard distribution of the immuno-resistance potential in a population of pigs (N=250) under normal conditions. The study will be conducted in collaboration with CCSI and Atlantic Swine Research Partnership Inc., with the support of IRAP. The same study will be conducted on other animal types (poultry, cattle, companion animals).

Once the reference scale established, one will be able to classify animals based on their capacity to resist to diseases (bacterial or viral). The study shall be completed as early as summer of 2004. At that time, the following applications will be possible:

1. Selection of the animals with the highest potential to resist diseases.
2. Test animals to better manage a herd for disease prevention.

For more information, please contact:

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