Breeding colony now in USA

It is a great pleasure to inform you that a breeding colony of Göttingen Minipigs has now been established at Marshall Farms in United States to supply high quality minipigs for biomedical research in North America. This breeding colony will increase availability of Göttingen Minipigs in both Europe and North America since the Danish breeding colonies now only need to supply the European market.

A representative number of sows and boars was transferred from Denmark to upstate New York on August 28, 2003. This group of Göttingen Minipigs will be the foundation breeding stock for all future production of minipigs at Marshall Farms. The foundation stock was selected based on recommendations from Prof. Dr. Henner Simonian, Institute of Animal Breeding and Genetics, University of Göttingen, Germany in order to ensure a broad genetic base. In the future the American herd of Göttingen Minipigs will be genetically updated on a regular basis from the herds in Denmark to secure uniform genetics in Göttingen Minipigs being used in Europe and North America.

Transportation of the breeding colony was coordinated with all parties involved to take place as safely as possible. The pigs were filter-protected during road and air transport. No other animals were present in the airport cargo areas, and everything was thoroughly disinfected, including the cargo area in the aircraft. Before take-off the captain of the SAS flight inspected the cargo of pigs. In Newark Airport the filtered Marshall Farms trucks awaited the shipment right next to the gate where the aircraft would park.

Due to the high demand for Göttingen Minipigs in United States and Canada, Marshall Farms wished to initiate production as quickly as possible. Therefore many of the sows arrived already pregnant and the first new “American” piglets were born in September. At the end of 2003 the first Göttingen Minipigs were delivered from the new Marshall Farms – state of the art – barrier facility to American research facilities.

Serving the international biomedical research society, we felt it useful for all researchers to know that colleagues in North America now have a better availability of Göttingen Minipigs, and that research in a uniform minipig can be performed on both sides of the Atlantic.

It is our great hope that Marshall Farms will succeed in producing and distributing the microbiologically defined Göttingen Minipigs from their new breeding colony in upstate New York.

Breeding capacity for Göttingen minipigs in Europe

During the past 6 months our breeding capacity has increased by 25% in order to meet growing demands. Barrier 2 is being extended to facilitate a further increase of capacity. By April 1, 2004, the extensions are expected to be completed, giving us a possibility to increase our breeding by further 65%. This will give us room for 200 extra sows, and allow us to have animals in stock, making it possible for us to meet the demands of the next two years.

Our administrative staff is also being increased, to ensure that there will always be a staff member available to receive your orders and take care of the services we offer to our customers.

To improve and expand our ability to arrange courses, we are building new facilities that will give the best conditions for seminars and workshops. We are introducing shower facilities for participants in our courses. And our final extension is the building of a laboratory. We hope you will find the time and opportunity to visit us and see the extensions when they have been completed in the spring of 2004.
New Homepage
Since the last newsletter, Ellegaard Göttingen Minipigs ApS has redesigned its homepage. The address is unchanged: www.minipigs.dk. The design was developed to create good accordance with our other marketing activities. The literature database has not changed: by writing keywords on the front page and then registering with name and e-mail address, it is possible for you to read abstracts of the articles. The database is updated regularly. The homepage contains information on the origin of the minipigs, breeding, feeding and housing, quality management, and background data such as clinical chemical parameters, haematological values and much more. Likewise, there is information about courses and exhibitions. Under News you will find the latest information that can be of interest to users of minipigs, and there is also a file with the latest newsletters in pdf format.

Circovirus
Ellegaard Göttingen Minipigs ApS includes screening for Circovirus in its health monitoring.

Porcine Circovirus type 1 has been described since 1974 as a non-pathogenic agent in pigs. This virus has been a known contaminant in cell cultures.

The so-called Postweaning Multisytemic Wasting Syndrome (PMWS) was described in 1991, and later Porcine Circovirus type 2 (PCV2) was associated with this syndrome. PMWS manifests itself as poor general condition and increased mortality in the pigs. The diagnosis is difficult to establish as the unspecific symptoms are also seen with other diseases. The detection of PCV2 does not necessarily mean the presence of clinical disease, and in many ordinary pig herds antibodies against PCV2 are found without seeming to affect the pigs.

In a herd, PCV2 is therefore only seen as a causal agent when all the following criteria are present: loss of weight and poor general condition in the pigs, lymphoid depletion or monocyte-associated inflammation of various organs as seen in histological examinations of tissue, and the presence of PCV2 in affected tissue.

Various management factors and infections with other agents are also of great importance for the development of the clinical symptoms in a herd affected by PMWS.

PCV2 is also associated with other symptoms. Porcine Dermatitis and Nephropathy Syndrome (PDNS) is thought to be caused by PCV2 Infection. The pigs develop ulcerative skin lesions, 1-2 cm. in diameter, most commonly on the flanks, hind legs and abdomen. A more general distribution is also seen. Black crusts may cover the lesions. Autopsy of pigs affected by PDNS reveals enlarged, pale kidneys, and possibly also small petechial haemorrhages on the surface of the kidneys. It has not been possible to reproduce this syndrome experimentally, but investigations indicate a connection with PCV2 infection.

In USA, Porcine Respiratory Disease Complex (PRDC), where pneumonia is part of the clinical condition, has also been linked with PCV2 infection.

In Denmark an increasing number of cases of PMWS have occurred in farm pigs since 2001 (Danish Veterinary Institute).

Because of increased attention concerning PCV2, Ellegaard Göttingen Minipigs ApS has chosen to include this virus in our bi-annual health monitoring.

References:
DVI; Danish Veterinary Institute, www.vetinst.dk


Stress-Sensitivity Testing
At Ellegaard Göttingen Minipigs ApS (EGM) the minipigs were formerly tested for the presence of the gene mutation that causes Porcine Stress Syndrome (PSS), also called malignant hypothermia. PSS is an autosomal recessive disease, where pigs exposed to stressful influences such as change of housing, transport or fighting develop muscle damage, this condition often resulting in death.

For EGM it is essential, for several reasons, that the pigs do not carry this gene. It is of great importance in our daily operations, as pigs are moved and mixed, which can cause fighting when a natural hierarchy is established among the pigs. Under experimental conditions pigs are also exposed to stressful influences, for instance blood sampling and oral dosage.

The predisposition for stress sensitivity is linked with hypersensitivity to Halothan, which can be important in experiments where Halothan is used as an anaesthetic during surgery.

The illness is caused by a mutation in the Calcium Release Channel (CRC) gene on the pig's sixth chromosome (localization 6p12-q22). Nucleotide C is changed to T at position 1843, and this mutation causes altered membrane characteristics in the skeletal muscle fibres. Thus an increased release of calcium from the sarcoplasmic reticulum is seen under various stressful conditions. This increased release causes hyperactivity in the muscle fibres. The pig develops muscle quivering, dyspnoea and rising body temperature, up to 42°C. Ears and extremities turn blue, the pig develops muscle cramps, and the condition almost always results in the death of the pig.

Stress sensitivity is examined by means of PCR amplification of DNA from blood samples, and the pigs are characterised as PP (stress sensitive), NP (bearers of the gene mutation)
Immune Complex-Associated Thrombocytopenic Purpura Syndrome

Sudden death without any previous illness sometimes occurs in the Göttingen minipig. This syndrome was described by Carrasco, L. et al. (2003) in connection with the examination of 11 pigs that died within a span of 3 1/2 years. Subcutaneous haemorrhagic areas were seen, and histopathological examination of the animals revealed interstitial bleeding in most organs, among others bladder, intestines, lungs and kidneys. Pronounced thrombocytopenia was seen in all animals examined, and in some animals vasculitis was found. Immunohistochemical examination of the kidneys demonstrated complement factor C1q and well as deposits of IgG and IgM. The renal finds together with the demonstration of thrombocytopenia and vasculitis indicate that this syndrome is associated with a hypersensitivity reaction to the blood platelets of the pigs.

Deaths with symptoms that are consistent with this syndrome still occur sporadically in the Göttingen minipig. We see 4-5 deaths out of an annual production of 3500 pigs, corresponding to 0.1 - 0.15 %.

Further information concerning this syndrome can be found in the following reference. You are also welcome to contact Nanna Grand; Phone +45 58185818

Reference:

Staff Education
Since January 2003 it has been compulsory in Denmark for persons working with laboratory animals either to be trained animal technicians or to have completed a theoretical and practical course in laboratory animal science.

At Ellegaard Göttingen Minipigs ApS (EGM) staff who are not trained animal technicians and who will be participating in experimental procedures such as blood and tissue sampling, will take a 30-hour course covering theory and practical training in the care and use of laboratory animals. The course participants will be given a basic knowledge of the various laboratory animals, the commonly used techniques will be practised, and the course will also deal with ethical aspects of animal experimentation.

In 2004 great importance will also be attached to further qualifying our staff. This will be carried out both through external courses and through internal courses at EGM’s own facilities. Subjects relating to the breeding of pigs as well as to animal experimentation in general will be treated.

Blood sampling

Handling courses in 2004
The handling of minipigs in connection with various procedures relating to experiments is extremely important. It is not possible to treat a pig in the same way as e.g. a dog, and expect a satisfactory result. Persons who are to work with minipigs are therefore offered a course in the general handling of these animals.

The handling courses take one day. They are made up of a theoretical and a practical part. The participants learn about the development of the minipig, the theoretical background for the use of the minipig in biomedical research, and the special characteristics of the minipig. In the practical part of the course the most common handling procedures such as approach, oral dosage, fixation in a sling and blood sampling will be demonstrated and practised.

The handling courses are free of charge, and in 2004 the courses will take place on the following dates:

Date of course: March 17, 2004
Deadline for enrolment; February 25, 2004

Date of course: June 7, 2004 - in connection with the surgery course, see below.

Date of course: October 6, 2004
Deadline for enrolment: September 27, 2004

The handling courses take place at Ellegaard Göttingen Minipigs ApS, Dalmose

If there is a need for courses other than those announced above, or for demonstrations at a client’s address, or if a presentation of specific procedures is desired, please contact Nanna Grand, DVM:

Email nanna.grand@minipigs.dk · Phone: +45 58185818
Surgery course 2004

In 2004 Ellegaard Göttingen Minipigs ApS (EGM) will once more give a surgery course in cooperation with The Royal Veterinary and Agricultural University, Copenhagen.

The course will take place on June 8-9, 2004. The course consists of a theoretical and a practical part. The theoretical part comprises e.g. catheterisation of arteries and veins, the use of ultralight scanning, anaesthesia and pain treatment of the minipig, and the use of the minipig in dermal research. In the practical part the most commonly used techniques will be demonstrated. After the demonstrations the participants themselves will practise the various techniques. It is possible to influence the choice of procedures to be demonstrated and practised during the course. Please inform us of your wishes when you enrol for the course.

The course will take place at The Royal Veterinary and Agricultural University, Copenhagen.

For enrolment, please contact
Nanna Grand, DVM:
Email: nanna.grand@minipigs.dk
Phone: +45 58185818

Deadline for enrolment: May 1, 2004.

We draw your attention to the fact that the day before the surgery course there will be a handling course for those who are interested.

Articles:

2002:


2003:


Neck anatomy