DEAR READER,

Training and surgery courses
Two of the big hurdles to overcome when starting up a new animal in a research programme are staff training and the modification of housing equipment. Over the years we have seen an increasing demand by our customers for being trained in how to house and handle Minipigs. We are pleased to offer this start-up service free of charge since it results in satisfied customers. Our staff who perform this training are also satisfied by knowing that they help to make the procedures carried out at our customers’ facilities much easier.

We recently held our first surgery course here at our facility. It was well received, and we are pleased with this new way of training our customers in more sophisticated techniques, which also broadens the use of Minipigs. Please visit our website www.minipigs.dk for more information about the surgery courses.

AAALAC
We are getting closer to our fourth AAALAC site visit that will take place this summer. We are visited by AAALAC representatives every three years. The first visit to our facilities took place in 1998 and was quite a learning experience. Now that we have tried it a few times, we are much more familiar with what an AAALAC site visit entails. We are very pleased with our AAALAC accreditation, which helps us in many ways and stipulates relevant requirements for the way we operate our production.

Legal status of the company
Our company has changed its legal status from a private limited company to a public limited company. This does not involve any changes for our customers or suppliers, however, as we already fulfilled the requirements regarding the management and capital investment of a public limited company. This is why you will see ”A/S” (public company) after our company name instead of the previous “ApS” (private company).

Health monitoring report
The production of minipigs is going well and it is always nice to receive the results of the health monitoring report when there are no changes to the previous status.

On this note, I wish to extend our best wishes for a nice spring and summer.

Jens Ellegaard, Managing Director

CONTENTS OF THIS ISSUE
DEAR READER ................................................................. 1
SURGERY COURSES – SIGN UP NOW! ................................ 2
HANDLING AND DOSING COURSES .............................. 2
SCIENTIFIC CONSULTANT ANTHONY J. WEBB ................. 2
TRAINING OF GÖTTINGEN MINIPIGS FOR STRESS-FREE HANDLING AND BLOOD SAMPLING .......................... 3
MINIPIG HOUSING AT SANOFI-AVENTIS INDUSTRIEPARK HOECHST ........................................................................ 4
NEW ARTICLES ...................................................................... 5
EDUCATIONAL MATERIAL .................................................. 5
MEETING CALENDAR .......................................................... 6
HEALTH MONITORING REPORT ............................................ 6
WELCOME BACK, TRINE! ................................................... 6

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For Göttingen Minipigs in North America please contact Marshall BioResources – infous@marshallbo.com
SURGERY COURSES – SIGN UP NOW!

Surgery courses at Ellegaard Göttingen Minipigs provide training in small groups (max. of 4) and can be tailored to the needs of the participants. Each surgery course is divided into theory and practice modules. The theoretical instruction provides the participant with knowledge of preoperative preparation and planning, anaesthesia, recovery and postoperative care, vascular access procedures, physiological recording, telemetry, abdominal surgery, skin and imaging. In the practical training session the participants are trained in the procedure of anaesthetizing and intubating the minipig. The pre-planned surgical procedures include catheterization of different vessels as well as implantation of telemetry devices.

The pre-planned programme can be modified to suit the wishes of the participants.

This is a unique chance to get hands-on surgical experience for Göttingen minipigs as well as to visit our facilities and get to know the people behind the Göttingen Minipig in Denmark.

**Course dates:**
- June 6–7
- September 5–6
- October 10–11
- November 28–29

For further information, or if you would like to sign up for a course, please visit www.minipigs.dk.

For further details on the course programme, or if you have any specific questions, please contact Ellegaard Göttingen Minipigs at ellegaard@minipigs.dk

HANDLING AND DOSING COURSES:

Correct handling of Göttingen minipigs is crucial for anyone who uses minipigs in research. Ellegaard Göttingen Minipigs ApS offers handling courses, which have become very popular among our customers. These courses are arranged according to need and can take place at Ellegaard in Denmark or on your premises.

Each handling course consists of theory (history, genetic management, husbandry and handling of the Göttingen minipig) and practice, where basic procedures are demonstrated and practised by the participants.

For more information, or if you would like to schedule a handling course, please send an email to ellegaard@minipigs.dk.

SCIENTIFIC CONSULTANT ANTHONY J. WEBB

We are pleased to announce that Tony Webb (BVSc, DVR, MRCVS) is now working for Ellegaard as an independent consultant. This cooperation will enable Ellegaard Göttingen Minipigs to give our customers even better service than before.

Tony has worked in private practice, with both large and small animals, in addition to serving as a lecturer for the Veterinary Faculty, University of Liverpool, and for the School of Veterinary Science, University of Bristol. From 1987–2007, Tony worked at Pfizer Global Research and Development and is thus experienced in the fields of research and surgery relating to various species of laboratory animals.

Tony will be the instructor for our surgery courses and it is also possible to arrange for Tony to perform surgery on Göttingen Minipigs at your facility.

Tony will be present at Ellegaard’s stand at FELASA and LASA, where we look forward to introducing him to you.
TRAINING OF GÖTTINGEN MINIPIGS FOR STRESS-FREE HANDLING AND BLOOD SAMPLING:

Formalised training of pets is commonly used to obtain a specific, desirable interaction between humans and animals.

We have applied the same type of training on laboratory Göttingen Minipigs at the Biomedical Laboratory, Aalborg Hospital, Denmark, to ensure minimal stress to the animal, stress-free blood sampling from a catheter, and easy and safe small-volume subcutaneous injection in a long-term experiment.

One person trained 9-month-old female Göttingen Minipigs according to a staged training protocol covering the stages from acquainting the animals with the researcher's presence to safe and easy (as perceived by the researcher) handling.

The training was organised in progressive blocks, each aimed at a certain, formulated objective for the interaction between animal and researcher. Each block also included a strategy for achieving the objective, and pieces of apple were used as a reward when the pig complied with the strategy. The objective of one block had to be met before the next block of training could begin, and each block was also begun by repeating the final part of the strategy in the previous block to ensure an appropriate progression to the next block. A total of 14–18 blocks were needed to achieve stress-free blood sampling and easy, safe injections, depending on the pig's cooperativeness.

In our experience, it is possible to schedule more blocks of training on the same day, but overly intensive training stimulated a disturbing playfulness, i.e. the pig would stop focusing on the training and focus solely on the reward. It is definitely possible to train laboratory Göttingen Minipigs to become cooperative animals by making a proper effort.

At the Biomedical Laboratory, Aalborg Hospital, the protocol is now in use and is meant to be published in a scientific journal later on. The Ellegaard Newsletter will print a detailed approach to the training of Minipigs for stress-free subcutaneous dosing when the work has been published.

Mette Dencker, Aalborg University, Denmark
MINIPIG HOUSING AT SANOFI-AVENTIS INDUSTRIEPARK HOECHST

All animals in the facility, which includes the Minipigs, are housed according to ETS as well as German laws and recommendations. The facility has five floors and the Minipigs are housed on the second. This floor has eight rooms with seven pens, 6 m² each. The Minipigs are housed according to experimental needs, but preferably in groups. Space recommendations are as follows:

<table>
<thead>
<tr>
<th>Housing and experiment</th>
<th>Body weight kg</th>
<th>Group housing min. space m²/animal</th>
<th>Housed singly min. space m²/animal</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 15</td>
<td></td>
<td>0.40</td>
<td>1.0</td>
</tr>
<tr>
<td>16–25</td>
<td></td>
<td>0.60</td>
<td>1.2</td>
</tr>
<tr>
<td>&gt; 25</td>
<td></td>
<td>0.80</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Five air-conditioning units, one for each floor, serve the facility. Each unit has its own inlets. Inlet air (100% outside air) is filtered through two filter batteries – a primary P7 (equivalent 70% ASHRAE) coarse filter and a second P9 (equivalent 90% ASHRAE) fine filter prior to being conditioned. The main air handling system maintains a steady temperature and humidity level via centralized heating and cooling coils as well as humidifiers. An Edstrom Watchdog System monitors animal room temperature and humidity continuously, with instantaneous readings taken every 60 minutes and logged into the computer memory. The Edstrom system can be linked to a telephone alerting system and issues a remote alarm warning should a parameter limit be exceeded. Alarm situations are sampled every five minutes. The five units are interlinked so as to provide back-up in the event of ventilation battery failure. HVAC Parameters are as follows:

- **Temperature**
  - 24–30°C (6–12 weeks)
  - 20–24°C (13–24 weeks)
  - 16–22°C (> 24 weeks)

- **Humidity** 50 ± 20%

- **Light**
  - 12/12 night/day Rhythm

- **Food**
  - Special Minipig diet (ssniff™-Mpig-H)

- **Water**
  - Automated watering system, ad libitum

- **Enrichment**
  - Strew, chewing chains; balls, food balls

For enrichment, the Minipigs are given straw and chewing chains; another preferred enrichment is feed-filled balls which gradually release feed pellets as they are rolled around.

Minipigs are trained according to a PRIT (Positive Reinforcement Training) programme by animal caretakers assigned as individual pig trainers.

Pens are made out of stainless steel, floors are covered with epoxy and the walls are covered with tiles or stainless steel.

The Minipigs are monitored according to FELASA recommendations. All samples are collected from live animals. The oropharynx is examined for bacteria with the intent to identify all isolated bacterial species. A skin sample is examined for dermatophytes and ectoparasites. A stool sample and a faecal swab are also examined for bacteria and endoparasites. Serum is prepared and tests carried out for the agents listed in the FELASA Guidelines (health monitoring of breeding colonies and experimental units of cats, dogs and pigs) every 3 months. Animals with intercurrent disease not caused by a research model are examined and samples sent to the lab for a complete FELASA health check or special examination request.
At Ellegaard Göttingen Minipigs, we aim to provide our customers with high-quality products and services. Our latest supplement is the availability of DVDs which cover “Handling and Dosing” and “The Normal Histology of the Göttingen Minipig”.

HANDLING & DOSING
This DVD will help you to become familiar with some of the basic handling and dosing procedures for working with the Göttingen minipig. Although the DVD is intended to be a tool for teaching and demonstrating these procedures, Ellegaard Göttingen Minipigs recommends that anyone who has not worked with Göttingen Minipigs before should also attend a handling and dosing course. The DVD costs € 90.00 (+ shipping and handling).

NORMAL HISTOLOGY
This DVD set contains 45 slides on three DVDs and covers all the major organ systems so you don’t need a microscope to study them! This is a great opportunity to learn more about the normal histology of the Göttingen Minipig at your PC. All slides are scanned at x20 and stained with Haematoxylin and Eosin. The DVD includes software for viewing the images and costs € 65.00 (+ shipping and handling).

For more information on the Handling & Dosing courses or to order DVD’s, please contact Ellegaard Göttingen Minipigs at ellegaard@minipigs.dk or phone +45 5818 5818.

NEW ARTICLES:


MEETING CALENDAR

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATE</th>
<th>PLACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Course on Toxicologic Pathology</td>
<td>23-27 April</td>
<td>Nantes, France</td>
</tr>
<tr>
<td>Scand-LAS</td>
<td>10-13 May</td>
<td>Tromsoe, Norway</td>
</tr>
<tr>
<td>FELASA</td>
<td>11-14 June</td>
<td>Lake Como, Italy</td>
</tr>
<tr>
<td>International Congress of Toxicology XI</td>
<td>15-19 July</td>
<td>Montreal, Canada</td>
</tr>
<tr>
<td>European Teratology Society</td>
<td>1-5 September</td>
<td>Bratislava, Slovakia</td>
</tr>
<tr>
<td>Safety Pharmacology Society</td>
<td>19-21 September</td>
<td>Edinburgh, Scotland</td>
</tr>
<tr>
<td>European Congress of Toxicologic Pathology</td>
<td>16-19 September</td>
<td>Basel, Switzerland</td>
</tr>
<tr>
<td>EUROTOX</td>
<td>7-10 October</td>
<td>Amsterdam, The Netherlands</td>
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<tr>
<td>AALAS</td>
<td>14-18 October</td>
<td>Charlotte, NC, USA</td>
</tr>
<tr>
<td>American College of Toxicology</td>
<td>11-14 November</td>
<td>Charlotte, NC, USA</td>
</tr>
<tr>
<td>AFSTAL</td>
<td>21-23 November</td>
<td>Lyon, France</td>
</tr>
<tr>
<td>LASA Winter Meeting</td>
<td>21-23 November</td>
<td>UK</td>
</tr>
</tbody>
</table>

HEALTH MONITORING REPORT, SPRING 2007

The health monitoring report shows no new findings.

WELCOME BACK, TRINE!

Trine Christensen has now returned from her maternity leave. Trine gave birth to her second son, Frederik, last April. Trine will again handle all matters dealing with the export of Minipigs and Minipig products.

If you have any queries regarding Minipig ordering, please contact Trine at trine.christensen@minipigs.dk.