The challenge of arranging accredited courses for fish researchers and technicians

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§ 13. Planning and conducting an experiment

• Persons who conduct or plan to conduct experiments must have received a form of training approved by the Mattilsynet
Lab animals (ex fish)  
45-55,000 / year  
(Ca 120,000 in 1982)

Fish  
Ca “0” in 1982  
500,000 in 2000  
3,500,000 in 2007  
2,000,000 in 2008
AQUACULTURE - An Industry in Growth (Havbruk)

1. About the programme

Deadline: 14.10.2009
13:00 CET
Announcement: Funding for User-driven aquaculture-related research for 2010

Choose >>

Objectives:

Primary objectives:

- Cultivate knowledge as the basis of a profitable and wealth-creating aquaculture industry based on sustainable, market-oriented production.
- Ensure that research circles and the Norwegian aquaculture industry develop knowledge of a high international standard in areas crucial to the industry's advancement.

See also

- HAVBRUK webpage

Attachments

- Work programme 2006 - 2015 (PDF-283.6 KB)
- Action Plan for 2010 (PDF-146.3 KB)

Contact

- Rolf Giskeadegård
- Frode Meland
- Harald Sveier
- Ellen Gjestein
- Elisabeth Gittenbach
Aquaculture Research in the Research Council

The aquaculture programme, Aquaculture - An Industry in Growth, is one of the Large-scale Programmes administered by the Research Council of Norway. It consolidates and continues the activities under the previous aquaculture programme and other aquaculture-related activities within the Research Council. The programme comprises the Research Council's most important overall initiative with regard to aquaculture research.

The value of Norwegian aquaculture with regard to exports, jobs and coastal settlement patterns is enormous. Over the past 30 years, Norway's aquaculture industry has blossomed into the world's leading exporter of salmon and salmon-trout, bringing in substantial export revenues.

Knowledge-based Industry
Aquaculture is a knowledge-based industry with its origin in the primary industries. In the long term, aquaculture may well emerge as a key industry for Norway. It is one of the nation's most international industries, yet production is locally based. The Norwegian aquaculture industry is part of the increasingly competitive global seafood market. A number of major fishing nations are now developing modern aquaculture as an important
Marine research at the University of Bergen

The University of Bergen is a northern cornerstone of European marine science. Situated at the shores of the Atlantic Ocean the university is ideally placed to conduct studies into various aspects of marine research.
Courses in Laboratory Animal Science

- Multidisciplinary branch of science, contributing to the humane use of animals in biomedical research and to the collection of informative unbiased and reproducible data.
- Includes:
  - Laws, regulations and laboratory animal ethics.
  - Innate characteristics of animals: anatomy, physiology, genetics and biochemistry.
  - Influence of environmental factors on experimental results.
  - Laboratory animal procedures and research design.

(Principles of laboratory animal science, L.F.M. van Zutphen, 2001)
Contributing to the humane use of animals in biomedical research and to the collection of informative unbiased and reproducible data.

Means

- Regulations and ethics
  - Laws, regulations, guidelines, 3R, ethics

- Characteristics of the animals
  - Anatomy, physiology, genetics, biochemistry, microbiology

- Influence of external factors
  - Environmental conditions, Interventions, Anesthesia, surgery etc.

- Planning experiments and research design
  - Quality control systems, SOP, GLP, statistics, experimental design, 3R

- Managing the human factor
  - Coordination, Communication, Cooperation

Brønstad 2009 (based on van Zutphen 01)
Anesthesia

Stressful induction of anesthesia

Poor recovery from anesthesia

Inadequate analgesia

Anesthetic agent side effects

add noise to your experiment!

- anesthesia complications
- experimental treatments effect
- combination of both ???

from P Flecknell
Generic/Transferable knowledge and skills

Synergy effect of multidisciplinary learning environment

Specializes knowledge and skills
Part 1 - (2 days) – organized twice per year
Introduction to LAS, Legislation and administrative procedures, Ethical application,
General anaesthesia, euthanasia,
Safety and health hazards in the animal facility, Humane endpoints,
Basic handling techniques (video - interactive training)

Exam

Part 2 – once per year
General part (1 day): alternatives to use of animal,
planning and design of animal experiments, 3R, GLP – SOP, Ethics, Zoonoses

Special part: mammals (2 days)
Analgesia and Anaesthesia
Rodent biology, housing of rodents
Pig and sheep biology
Gene modified animals, nutrition
Health monitoring and qualities

3 days supervised practical training

Special part: fish (2 days)
Anesthesia
Environmental condition - water quality
Welfare and behavior
Biology of commonly used species
Nutrition, Handling
Stress and diseases

"FELASA C course"
Credits

• 8 et...

• Correspond to ... weeks
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Til den det måtte angå i Mattilsynet

Godkjenning av kurs opplegg for forskere som skal arbeide med forsøksdyr.

I Forskrift om forsøk med dyr heter det:


Universitetet i Bergen ønsker herved godkjenning av sitt kurs opplegg.
Accreditation

• Mattilsynet does not seem to have resources to accredit courses in Lab Animal Science!?

• Accreditation by FELASA!?

http://www.felasa.eu/
FELASA is Internationally recognized!

Promote mobility of researchers and international research collaboration!!
Lab animal research courses in Bergen

– Aimed for PhD students
  • Includes some master students
  • Post docs and researchers starting to do animal experiments
– Collaboration with Institute of Marine Research
Language challenge

• Significant number of scientific staff at University of Bergen do not use Norwegian as native language
• Regulations demands course to be fulfilled BEFORE they start to work with animals
• Courses in Norwegian is not useful for these student

PRAGMATIC APPROACH: GIVE COURSES IN ENGLISH !!