

Development of protocols for standard management and recording in pig research facilities

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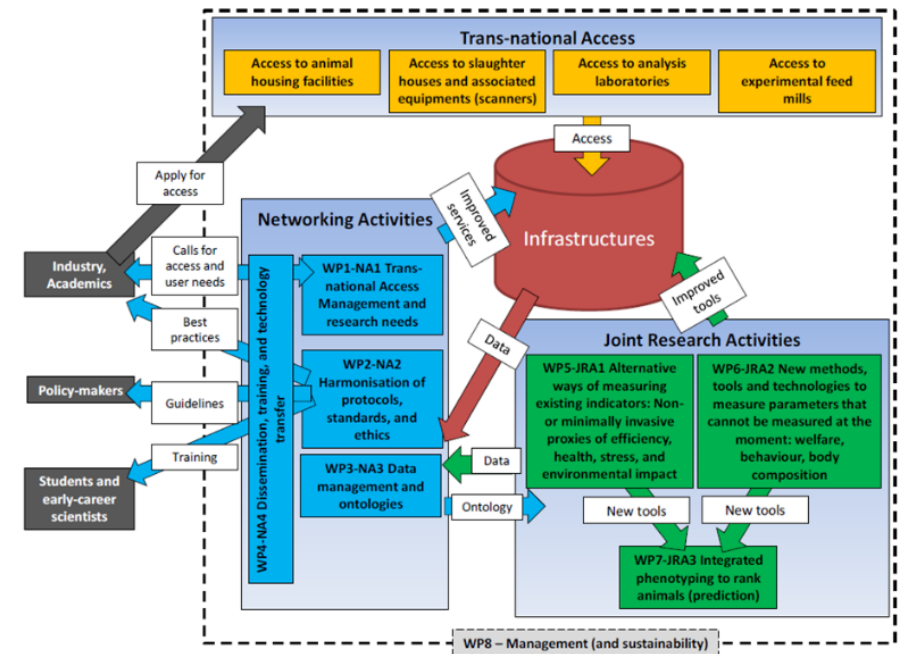
PIGWEB

- An infrastructure for experimental research for sustainable pig production

Project aim:

Strengthen the pig research community by providing and facilitating access to research infrastructures, reinforcing a culture of cooperation between the research community and industrial and societal stakeholders, and improving and integrating the services provided by the research infrastructures.

Composed of four work packages focusing on Networking Activities (NA), three Joint Research Activities (JRA) and ten Trans-National Access (TNA) work packages.



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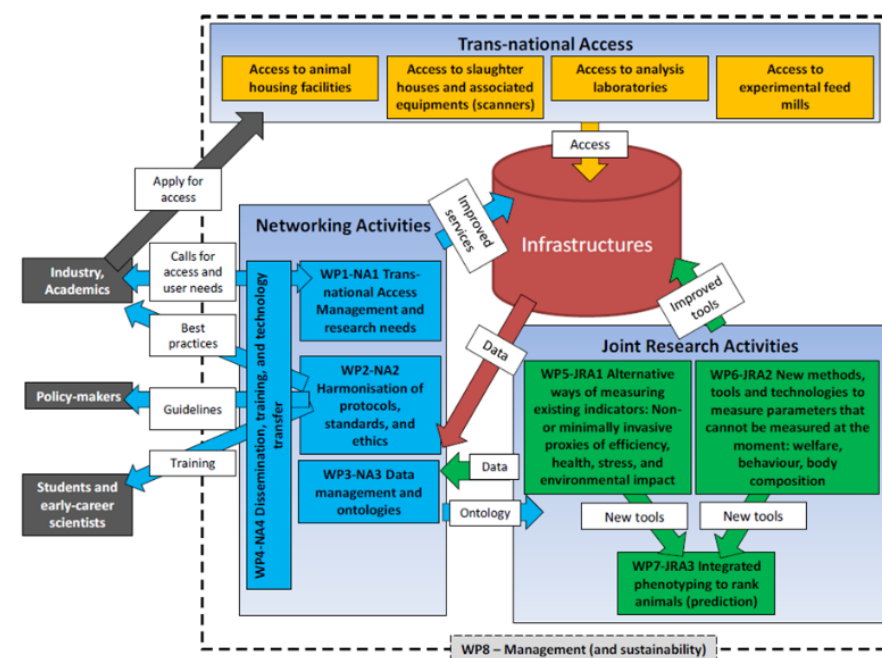
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PigWeb task 2.1: Harmonized protocols for the basic management and recording of standard traits in experimental research facilities

Background

- Pig research farms are few but expensive to run and share common challenges.
- All perform basic pig management and often the same standard traits are recorded, providing possibilities for (improvement of) standard operating procedures (SOPs) within and across facilities.
- Researchers are not always aware of SOPs and their impact on the quality of their studies and data.
- Facility staff are not always aware of the potential impact of deviation from standard procedures.
- To safeguard good research and data quality, this awareness needs to be improved in all involved parties.



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What did we do?

Aim: Improve and harmonize protocols for standard management and recording in pig research facilities.

Three main steps:

- A) Identification of key areas of standard management and recording,
- B) Development of improved protocols based on compilation of current practises and
- C) SWOT analyses on implementation of improved protocols.



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What did we do?

A) Identification of key areas of standard management and recording

1. Inventory of current standard management and traits at partner pig research facilities - Overview questionnaire
2. Developed definitions for standard management and recording and identification of key areas to develop improved protocols for – Workshop
3. Inventory of current practises and SOPs at partner pig research facilities - Detailed questionnaire



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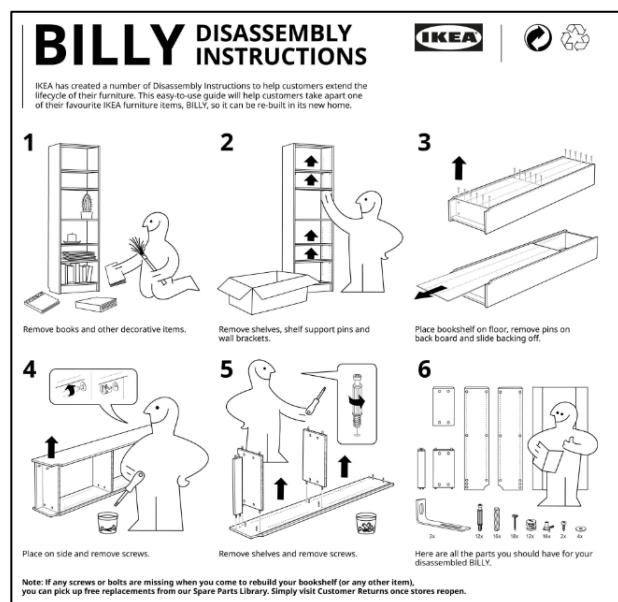
AREA	Suggestion improved protocol	SOP or Harmonized Documentation
Stable climate	Harmonized documentation on climate (temperature, humidity, lightning, heating lamps, ventilation settings) including frequency of documentation.	Documentation
Enrichment	Not harmonization of enrichment but standardized documentation of enrichment. Type and if relevant amount of enrichment, period enrichment is available for the pigs.	Documentation
Feed	Not harmonization of what is given, but that it is documented what, amount, nutrient content, when and how. This is one of the main differences between research facilities and research on conventional farms.	Documentation
Sow body condition	Improved protocol including both weight, back fat thickness and BCS	SOP, standardization of when to perform it
piglet mortality	Harmonized protocol for stillborn and death/culling	SOP
Pig weight/growth	Harmonization of when (age) piglets are weighed.	Time scheme for weighing
Pig health	Fecal- lameness scoring	SOP
Abattoir	Standardized documentation of fasting, transport and lairage prior to slaughter	Documentation





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Standard operating procedures (SOP)

Instruction to follow when performing a specific procedure



Should include (at least):



Task 2.1

Protocol template – description of the area

General information

List central information needed to be given	

Description procedure

Description equipment (including calibration)

Description registrations and documentation



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Weighing of finishing pigs and sows

Protocol: SOP-10035	Version: 2
Date of implementation: 30-11-2020	Print datum: 26-4-2023
Auteur: Bosman, Femke (kwaliteitsmedewerker)	

Reviewed by:

Reviewer(s): Rob Steenmans (Proefdierdeskundige)

Approved by:

Autorisator(en):

Steen, Björn (Management)

Version history

Version	Release date	Action
2	30-11-2020	Combined the procedure for finishing pigs and sows (all adult pigs)
1	15-02-2019	-

1. Purpose of the document

Describe the actions and precautions that apply when weighing pigs (finishing pigs and sows). The weighing of piglets and suckling pigs is described in other SOPs (see 7. References). The protocol is emphatically intended to minimize the discomfort of the animal during the process.

2. Materials

- Scale (walk-in)
- Charger (is in scale)
- Driving board
- Partition board to block the width of the walkway in front of the pens
- Partition boards to block the width of the aisle where the weighing takes place
- Dust face mask
- Hearing protection
- Disposable gloves
- Marking spray or marker
- Edible treats
- Calibration weight
- Weighing list for documentation

3. Safety precautions

- Wear a dust face mask, gloves and hearing protection
- Never work alone due to possible aggression from penmates when a pig is taken out of the pen
- Approach the animals calmly
- Move the partitions used to close off the weighing area with 2 people
- Wear sturdy shoes with non-slip soles when driving the pigs

4. Preparation



- Choose the right scale based on the animal weight (see labels)
- Charge this scale one day before weighing (charger is in scale)

5. Instruction

- Calibrate the scale with a calibration weight that corresponds most closely with the estimated average weight of the pigs and, if necessary, with your own body weight
- Put the scale in transport position (lever up)
- Move the scale to the corridor outside the pig stable and place one long side against the wall
- Remove the scale from the transport position (lever down)
- Tare the scale with the doors closed and then open the doors
- Calibrate the scale again (may deviate by a maximum of 1% from the weight measured before transport)
- Tare the scale so that it is at 0

What did we do?

B) Development of improved protocols based on compilation of current practises



Task 2.1

Improved protocol enrichment

Standardized documentation per stable section

Period (start and end date (DDMMYY))	
Stable section ID	
Section type (Dry sow, Farrowing, Weaner, Growing/Finishing)	
Number of pens with pigs in the section	
Number of pigs in the section	

Standardized documentation of enrichment

Type(s) of enrichment (yes or no and if relevant amount)

Type	Presentation (e.g. on floor, rack, attached to wall)	Amount per pen and refill rate* (if relevant)	Start date (DDMMYY)	End date (DDMMYY)	Pens with enrichment (if relevant)
Toy					
Chain					
Wood blocks					
Straw					
Peat					
Silage					
Hay					
Other (specify in rows below)					

*Note pen IDs and comment id one pen in the section deviates from basic management

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Task 2.1

Improved protocol slaughter houses



Task 2.1

Improved protocol body condition score



Task 2.1

Improved protocol feed



Task 2.1

Improved protocol piglet mortality



Task 2.1

Improved protocol stable climate



Task 2.1

Improved protocol piglet, weaner and growing-finishing pig body



Task 2.1

Improved protocol pig health

General information

For sick or injured pigs the following should be registered:

Pig ID, date, symptom(s) and/or type of injury, body temperature, treatment (type of drug(s), number of days treated).

If necessary, sick/injured pigs should be moved to a sick pen. For sows, the sick pen should be provided with a rubber mat or sufficient amounts of straw or other bedding material for extra comfort. Animals in sick pens should be looked after at least two times a day.



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What did we do?

C) SWOT analyses on implementation of improved protocols in all partner pig research facilities.

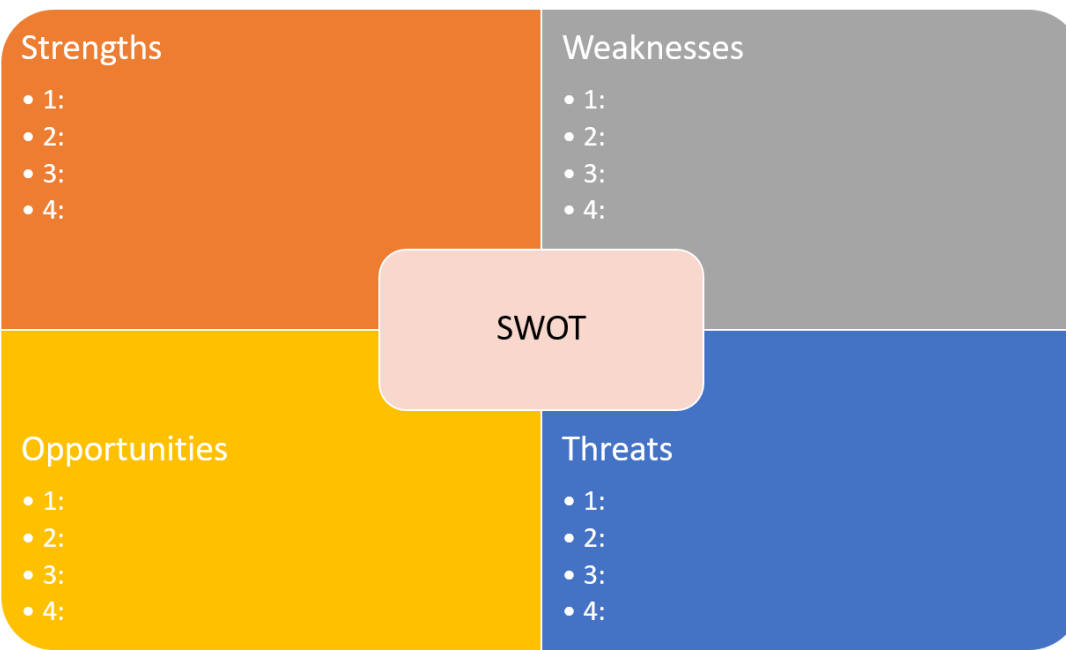
Instructions for implementation discussion and evaluation related protocols task 2.1

To be performed by relevant facility staff and partner representative. The partner representative should facilitate the discussion and is responsible to summarise the SWOT-analysis. Send the SWOT-analysis at latest 2022-10-07 to Anna and Rebecka.

Only focus on the protocols relevant for the specific facility.

- 1) Read through each protocol and discuss the following aspects
 - If you were to use the protocol today, would you be able to use the protocol? If not, why?
 - Is there an SOP available for the area of the protocol at your facility?
 - On an overall level, are there essential aspects missing in the protocol?
- 2) Based on the discussion on protocols described above, perform a SWOT analysis on each square.

SWOT analysis on implementation of protocols and SOPs in pig research facilities



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What did we find?

- Procedures varied between facilities.
 - Many facilities had no written SOPs in place, even though adequate routines were applied.
 - Only 2 facilities has written SOPs for several key areas for basic management and recording and systematic revision of these.
 - Key areas with potential for improvements and harmonization were identified.
 - Stable climate
 - Enrichment
 - Feed
 - Sow body condition
 - Piglet mortality
 - Pig weight and growth
 - Pig health
 - Abattoir
- ➔ Practical tips on SOP development were developed as an additional activity in the task, to facilitate this development in pig research facilities.



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Conclusions and recommendations

- We conclude that procedures varied between facilities but key areas with potential for improvements and harmonization could be identified.
- Many facilities had no written SOPs in place, even though adequate routines were applied.
- The primary suggestion for improvement is that if SOPs are not in place, the first important step is to develop SOPs on current procedures, leading to harmonization within the facility.
- The protocols developed in PigWeb are aimed as templates to facilitate and promote development of SOPs.
- Important activities in further harmonisation over facilities are knowledge exchange on SOP development.



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Thank you for your attention!

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