# TACKLING THE PARASITOLOGICAL CHALLENGES ARISING FROM ORGANIC FARMING PRACTICES

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*Leading the way in Agriculture and Rural Research, Education and Consulting*

# ProPara aim

- Generate information and novel tools that can be readily used by organic farmers to improve animal health and welfare
- Achieve this by targeting the interface between research and dissemination
- We will utilise industry datasets (e.g. liver condemnation data) and close links with key stakeholders for our on-farm trials (through the extension services of the partners)

# ProPara approach

- Perform targeted research at a farm systems level, to fine-tune sustainable parasite control strategies, and/or facilitate the implementation plans
- Pool information generated from the current and legacy national and international research projects and perform cost-benefit and farmers' acceptance analysis
- Evaluate implementation strategies and disseminate them to key stakeholders of the wider organic community

# ProPara deliverables

- Report on helminth parasite control strategies across organic farms in Europe
- Generate quantitative data on the use of alternatives for GIN control in organic sheep and goats
- Economic impacts of the implementation of alternative approaches for GIN control
- Characterisation of dairy cattle breeds on their resilience/robustness to GIN infections
- Estimates of liver and rumen fluke incidence in organic cattle and sheep farms
- Electronic application (‘app’) that identifies potential risk of infection with liver fluke
- Web-based decision tree evaluated by the organic farming community for its applicability, for the control of GIN in cattle, sheep and goats

# UK contribution

- Perform on farm trials where alternative strategies of GIN control are put to test by organic farmers

# Basket of options trial

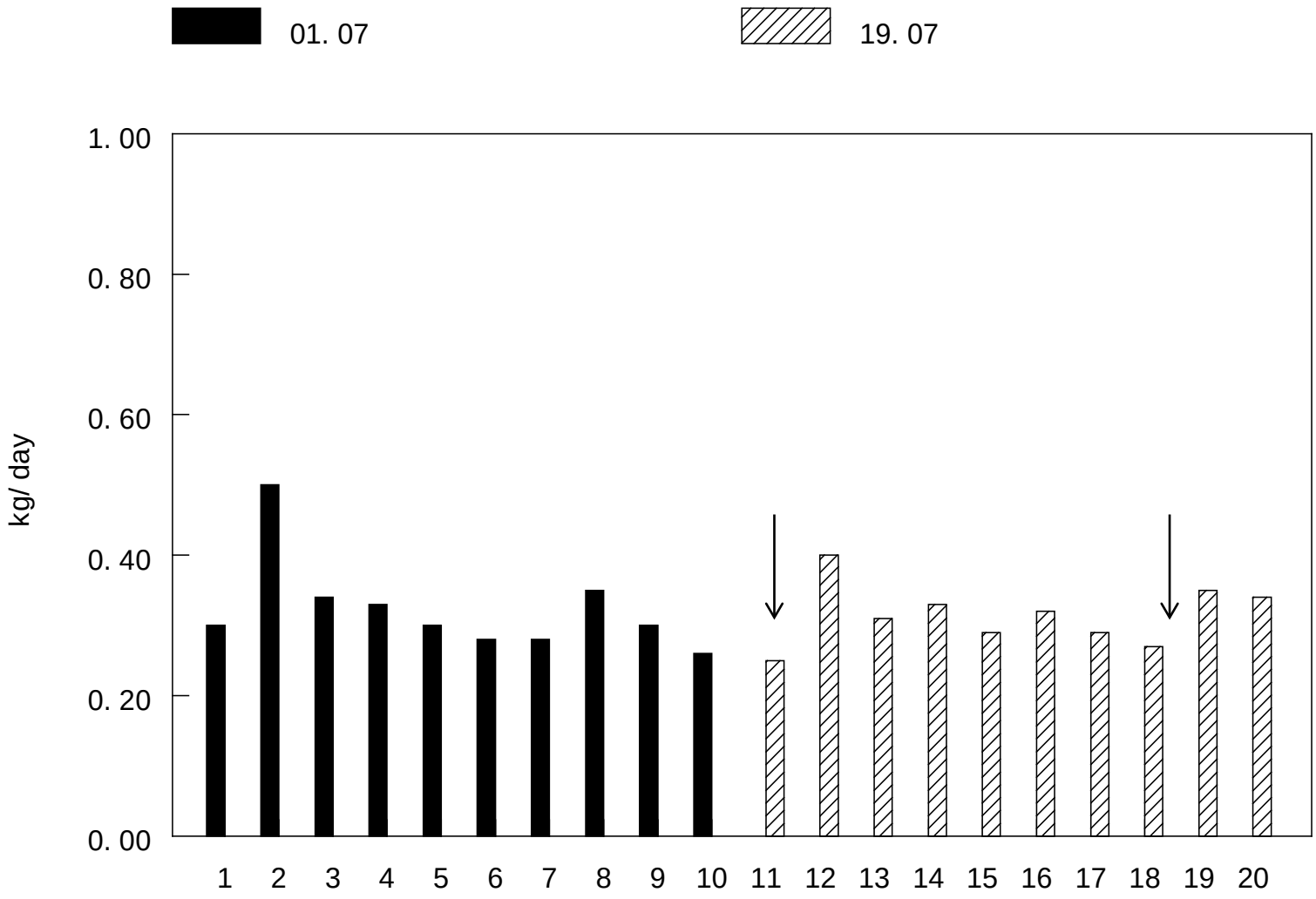
- Organic sheep farmers are given options to consider for sustainable worm control
- Suggested strategies to reduce worm burdens:
  - Drench if FEC are rising
  - Protein supplementation (DUP) around parturition and/or lactation
  - Grazing on bioactive forages, e.g. chicory
  - TSTs. Weigh lambs a few times a year and calculate grass availability. If weight is less than expected (based on grass availability measured) animals get drenched

- The participating farmer can select one or more of these options, use it in one group, and then compare the results with another group managed in a “usual” manner.

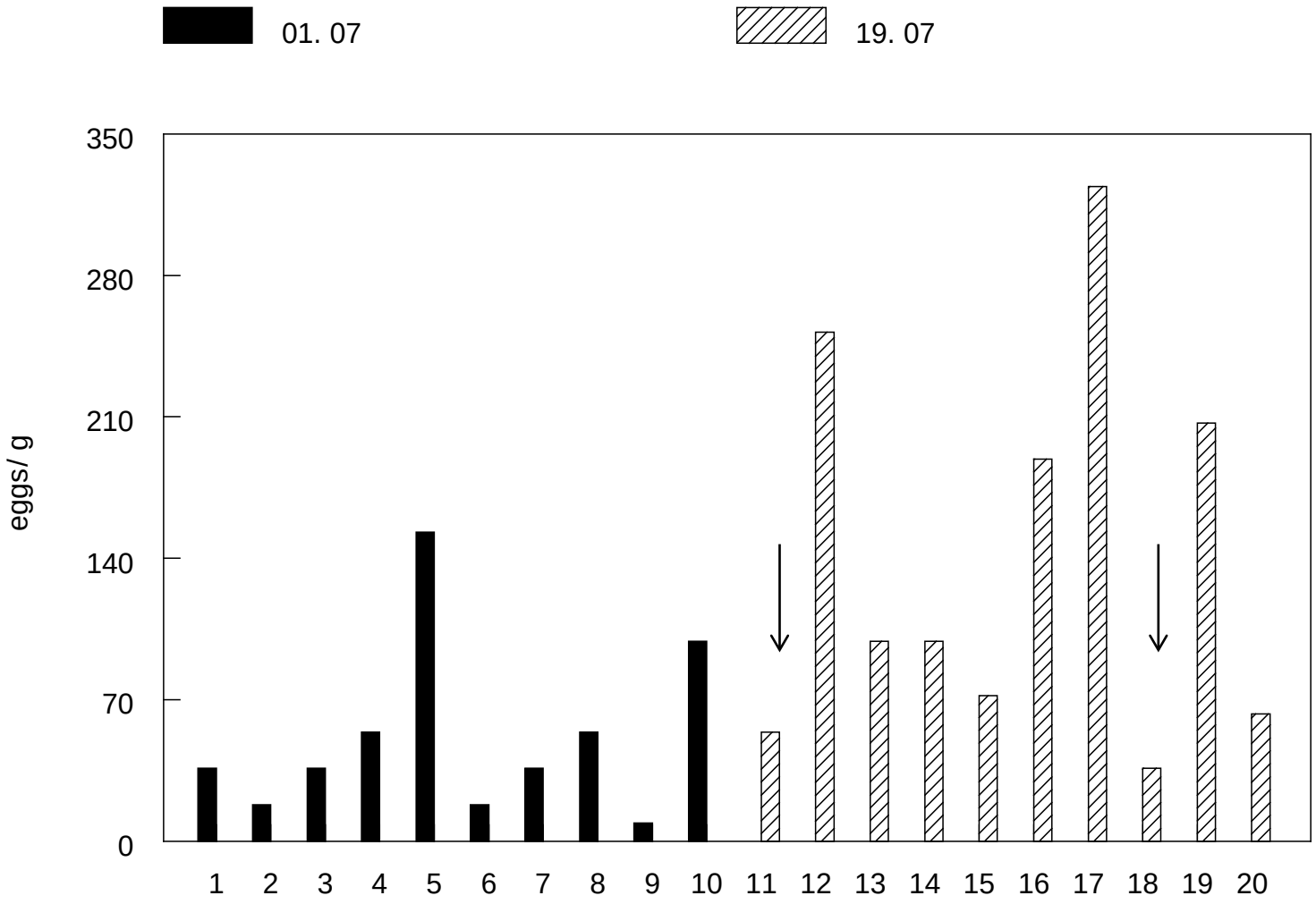
# Farmer 1: FEC vs weight gain

- Currently
  - Ewes: mob FEC and “blanket drenching” although he leaves 10% undrenched
  - Lambs: drenching based on mob FEC if suspected problems
- Farmer monitors lamb weights at 2-3 occasions.
  - 1st 42-84 day old,
  - 2nd 21 weeks old
  - Likely a third weighing sometime between the two above
- He also measures DM of grass.

# Weight gain


01. 07
19. 07
1. 00
0. 80
0. 60
0. 40
0. 20
0. 00
kg/ day
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

# FEC


01. 07
19. 07
eggs/ g
350
280
210
140
70
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

# Preliminary conclusion

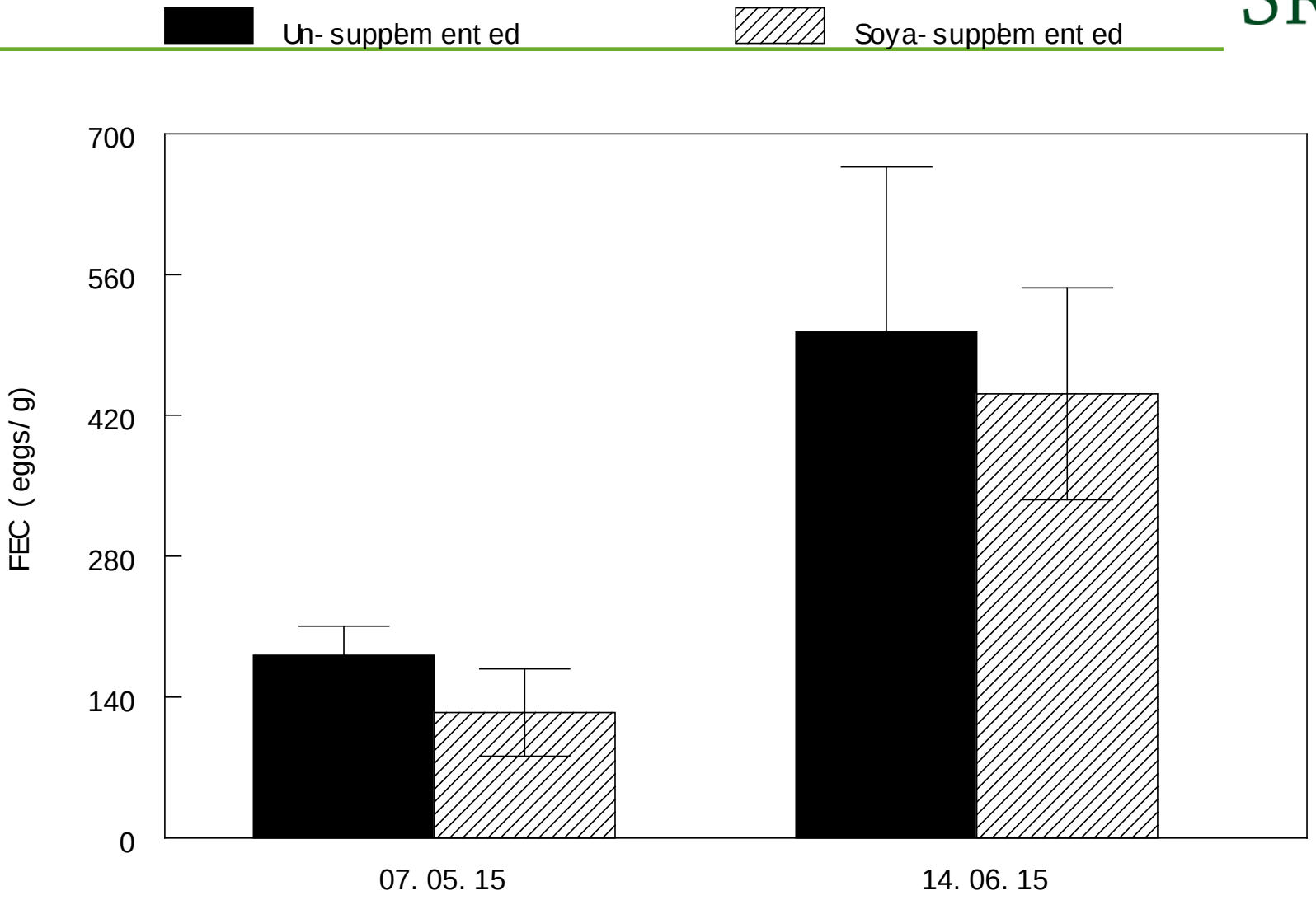
- Drenching on weight gain did not target the animals with high FEC
- Small scale experiment?
- Still waiting on final numbers

# Farmer 2: Protein supplementation

- Current parasite control strategies: clean grazing, drenching following mob FEC
- Pre Lambing (22/2/15) he feeds a home made mix consisting of:
- Organic HiPro Soya 50g/Lamb (oil 2.10%, Fibre 3.60%, Protein 47.5%, Ash 6.50%)
  Organic Molasses 8g/lamb
  Organic Oats 50g/lamb
  Minerals 10g/lamb
  Ad lib Grass and Hi mag mineral buckets.

- 2weeks before official lambing date ( 23/3/15) and 6 weeks of Lambing as above but in addition ad lib Silage
- Post Lambing n=10 ewes were supplemented with 100g organic soya per lamb (treated group). Control group stayed unsupplemented (n=10)

# Faceal Egg Counts



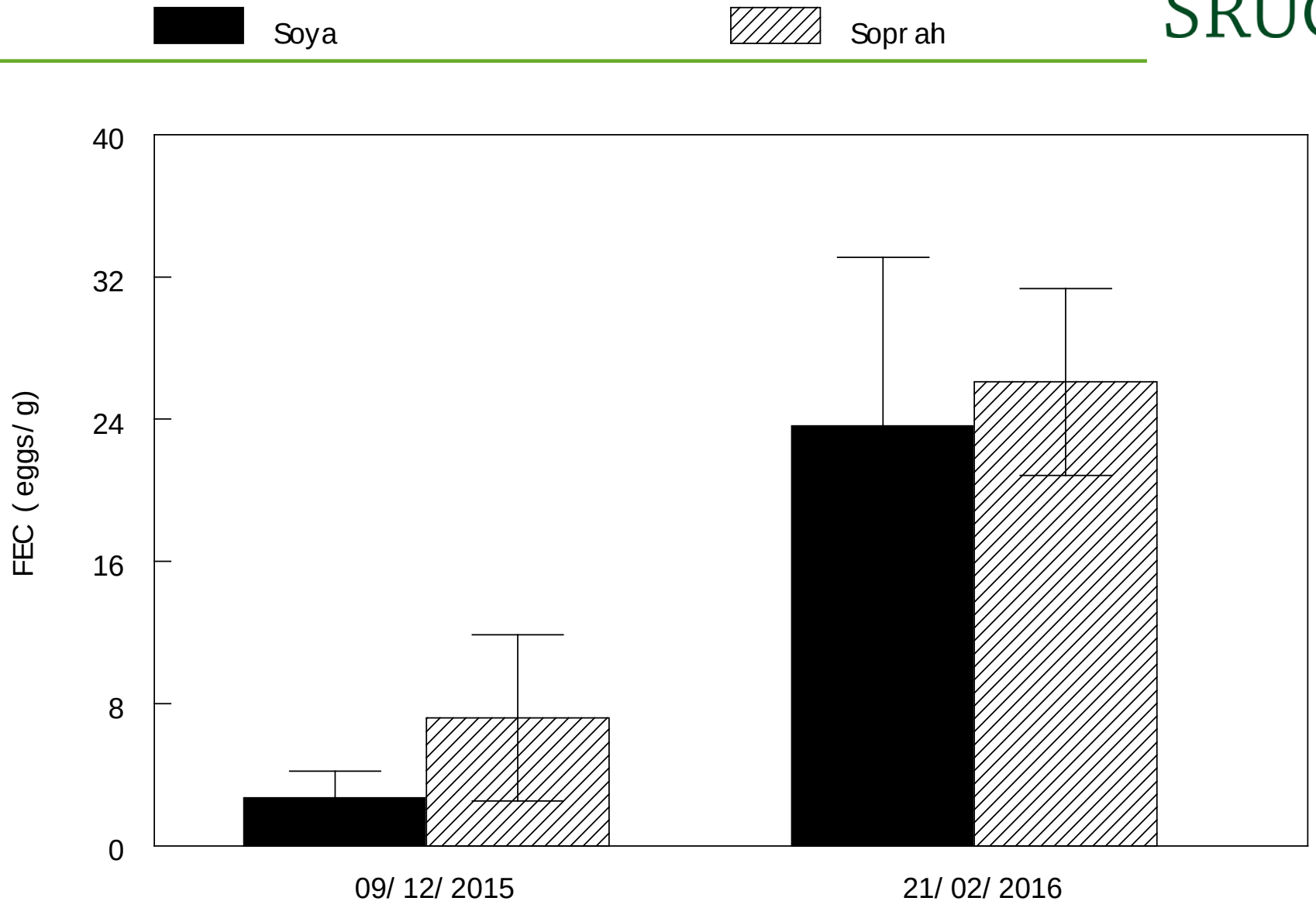
# Preliminary conclusion

- Soya supplementation has reduced FEC in ewes
- Small scale experiment, but encouraging
- Still waiting on final lamb weights to investigate whether there was an effect on lamb performance

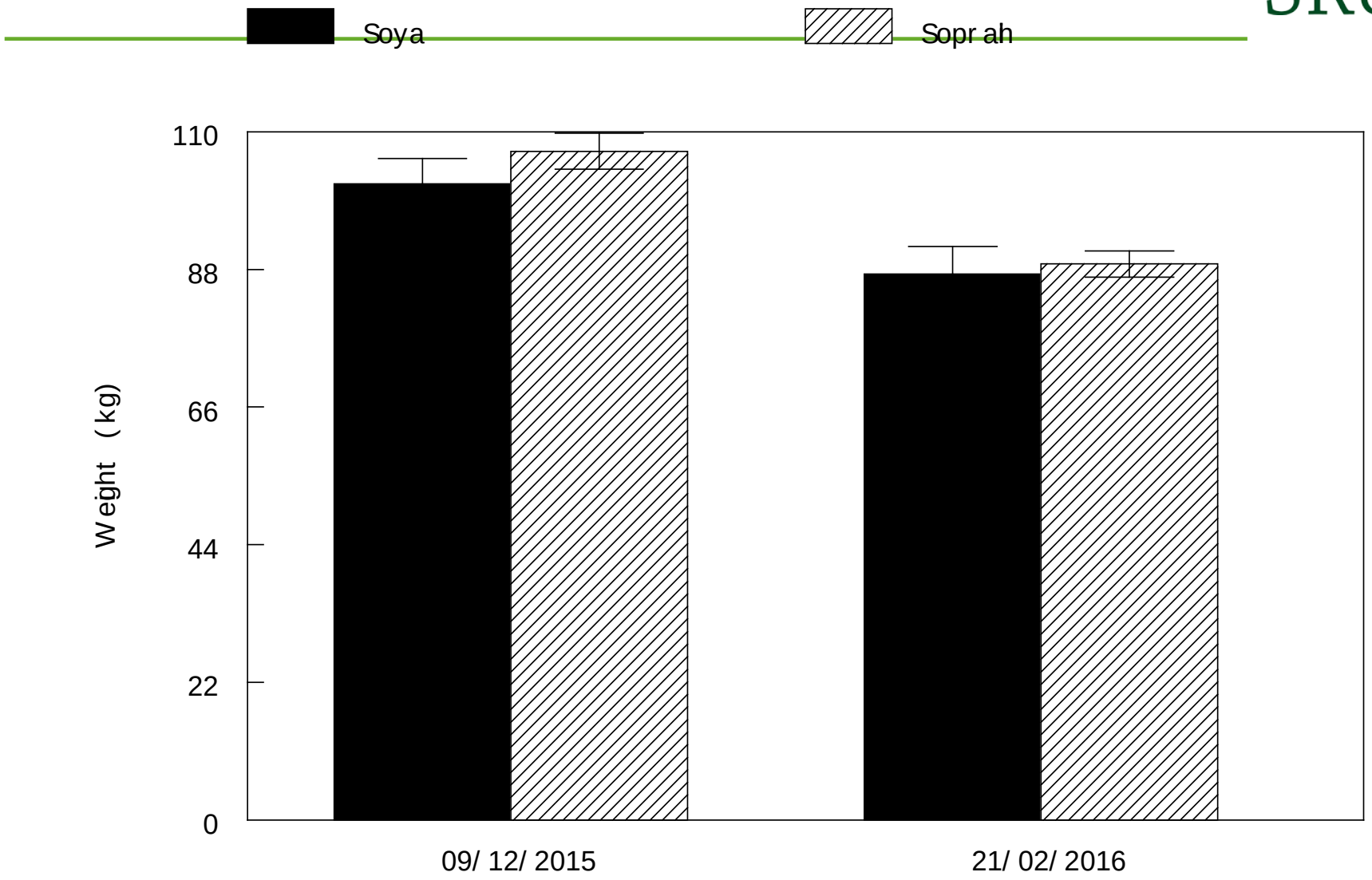
# Farmer 3: Low Input. Source of protein Soya vs Sopralin

- Soya and sopralin both high in protein, but sopralin higher in DUP
- Aim was to test the effect of protein source on FEC and weight gain of ewes
- Supplementation about 100g/day per lamb
- N=10

# Faceal Egg Counts



# Ewe Weight



# Preliminary conclusion

- A diet rich in DUP does not seem to infer any additional benefits to FEC and performance of ewes
- Small scale experiment

# Acknowledgements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- http://coreorganicplus.org/research-projects/propara/

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