



Horizon 2020
Programme

Report of the fifth national workshop (NWS 5), Estonia, 09.11.2023



Sm@ll Ruminant Technologies



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09th of November 2023
Physical meeting (Farm Demo in Rehekivi Innovative Farm + workshop)

Sm@RT

ESTONIA (COMMON SESSION MEAT SHEEP+ DAIRY GOAT/DAIRY SHEEP):



Date and place of the NWS 5: 9 th november 2023, 10.00- 15.30 pm. , Farm Demo at Rehekivi Innovative Farm, workshop at Barto Holiday house

Invited 21.

Number of participants: 10

Participated:

Peep Piirsalu (EULS & NF), Maria Soonberg (EULS), Rein Mirka (Innovative farmer, Wasala OY), Janika Mirka (Innovative farmer, FIE Janika Mirka), Hugo Vaino (Innovative farmer, Rehekivi OY), Tiina Vaino (Innovative farmer, Rehekivi OY), Mirjam Pikk mets (OY Aaduni), Evelin Niinepuu (OY Oruküla), Denis Pretto (Viinamärdi OY), Annemari Polikarpus (Viinamärdi OY).

Agenda:

- 10-12 Farm Demo in Rehekivi OY innovative sheep farm (EID stick reader True Test XRS2, weight indicator XR5000, EID enable Prattley weight crate,)- Hugo Vaino, Tiina Vaino
- 12-12.30 Catering in Barto Holiday house
- 12.30- 15.30 Workshop in Barto Holiday house

Welcome and Project progress- P.Piirsalu

Summary of TNWS4 in Norway and introduction about technologies seen (Drone, Farm cameras, GPS tracking, Real Time ID+animal register, Virtual fence)- P.Piirsalu

Discussion about Norwegian Technologies- P. Piirsalu, M. Soonberg

Questionnaire before and after training (EID stick reader True Test XRS2, EID weight crate with XR5000)- P. Piirsalu

Introduction about Adopt results of Technologies by farmers so far (other countries and Estonian farmers)- P. Piirsalu

Cost-Benefit Analysis results on tools by Irish farmers (EID stick reader) and UK farmers (EID weight crate)- P. Piirsalu

Feedback on Farm Demo Day- P. Piirsalu

Conclusion- P. Piirsalu

Farm Demo at REHEKIVI OY innovative sheep farm

Innovative farmers Hugo Vaino and Tiina Vaino received us at their sheep farm, where they keep about 220 breeding ewes, which belong to the Estonian Whiteface, Dorset and Texel breeds. They talked about aspects of farm management in recent years. In more detail, they demonstrated how they use the EID stick reader (EID stick reader True Test XRS2, and EID weight crate with scale indicator XR5000). In the process, they weighed the ewes and sorted them into three groups. There was a discussion where other farmers also talked about their farm's experiences of using similar equipment, as well there was also a discussion about the practical every day use of the devices seen.



Fig.1. Tiina Vaino demonstrating EID stick reader and EID Prattley weighing crate



Fig.2. Tiina Vaino demonstrating EID stick reader and EID Prattley weighing crate



Fig.3. Participants at Farm Demo/training in NWS5.

After Farm Demo all participants moved to the Barto Holiday house for the workshop (Fig.4). Peep thanked everyone for attending. He gave a brief overview of the Sm@rt project progress including objectives of the project and levels of networking (i.e. digifarm, innovative farms, interested farms). After that Peep made a powerpoint presentation about TNWS4 held in Norway and introduced technologies seen in Norway (drone, farm cameras, GPS tracking, Real Time ID+animal register, virtual fence etc).



Fig. 4. Participants at NWS4 in Barto Summer house, Kulina, Estonia

The participants chose the two technologies they liked the most from among the presented Norwegian technologies. These became the drone and the farm cameras. The participants also liked the Real Time ID + register, but when it became known that the system needed to place base stations near the herd, it was abandoned.

After that, the technologies seen during the farm demo were also evaluated by farmers using the corresponding questionnaire below. Results for EID stick reader and EID weight crate before training (table 1) and after training (table 2) are seen in the tables.

Table 1. Before training

EID stick reader True Test XRS2				EID weight crate, XR5000			
1) Do you have this tool ?	2) Do you think it is worth investing in it?	3) Would you like to implement it on your farm?	4) Level of practicality (1=low; 4=high)	1) Do you have this tool ?	2) Do you think it is worth investing in it?	3) Would you like to implement it on your farm?	4) Level of practicality (1=low; 4=high)
Yes	Yes	Yes	4	Yes	Yes	Yes	4
Yes	Yes	Yes	4	Yes	Yes	Yes	4
No	Yes	Yes	4	No	Yes	Yes	4
Yes	Yes	Yes	4	Yes	Yes	Yes	4
No	Yes	Yes	3	No	Yes	Yes	4
Yes	Yes	Yes	3	Yes	Yes	Yes	3
No	Not sure	Yes	3	No	Not sure	yes	2
Yes	Yes	Yes	4	Yes	Yes	Yes	4
Yes	Yes	Yes	4	Yes	Yes	Yes	4

It became clear that most of the participated farmers considered these technologies useful before and after training and they were willing to implement thoses on their farm.



Table 2. After training

EID stick reader True Test XRS2				EID weight crate, XR5000			
1) Do you have this tool ?	2) Do you think it is worth investing in it?	3) Would you like to implement it on your	4) Level of practicality (1=low; 4=high)	1) Do you have this tool ?	2) Do you think it is worth investing in it?	3) Would you like to implement it on your	4) Level of practicality (1=low; 4=high)
Yes	Yes	Yes	4	Yes	Yes	Yes	4
Yes	Yes	Yes	4	Yes	Yes	Yes	4
No	Yes	Yes	4	No	Yes	Yes	4
Yes	Yes	Yes	4	Yes	Yes	Yes	4
No	Yes	Yes	4	No	Yes	Yes	4
Yes	Yes	Yes	4	Yes	Yes	Yes	4
No	Yes	Yes	4	No	Yes	Yes	4
Yes	Yes	Yes	4	Yes	Yes	Yes	4
Yes	Yes	Yes	4	Yes	Yes	Yes	4

The workshop continued with Peep presentation where he introduced the possible adoption of various technologies by Estonian farmers and by farmers other countries participating in the project, which was carried out previously with the Mentimeter and adopt softwares (table 3 and 4).

The data in Tables 3 and 4 showed that the projected adoption of technologies varied widely by country and also by technology.

Adoptation results showed that EID weight crate's time to near peak adoption level in Estonia could be 16 years and adoption level 24 %. Time to near peak adoption level for stick reader is 13 years and peak adoption level is 72 % (table 3).

Table 3. Predictive adoption of technologies based on Adopt software and farmer feedback by Estonian farmers and by farmers other countries (www. mentimeter.com ; adopt.csiro.au)

Tool/prod.type/country	Time to near peak adoption level, years	Peak adoption level, %	Predicted adoption in 5 years from the start, %
Stick reader/ d+meat/EST(24.05.23)	13	72	27
Stick reader/ meat farmers/ IRE	24	93	10
Stick reader/ meat farmers/ UK	11	97	49
EID weight crate indicator/ d+meat/ EST (24.05.23)	16	24	6



Walk Over Weight/ dairy goats/FR	9	63	46
Walk Over Weight dairy sheep/FR	14	31	11
Automatic post milking spraying, dairy/ITA	4	38	38

Table 4. Predicted adoption of technologies seen in Norway based on Adopt software and farmer opinion (www. mentimeter.com ; adopt.csiro.au)

Tool/country	Time to near peak adoption level, years	Peak adoption level, %
Drone/EST/20.10.23	13	34
Drone/IRE	10	52
Drone/UK	17	46
Virtual fence, Est/20.10.23	23	1
Virtual fence/UK	11	2
GPS tracking/ISR	14	74

Estonian farmers appreciated among the technologies seen in Norway the faster introduction of the drone, but the introduction of a virtual fence was considered unrealistic (near peak adoption level 23 years with peak adoption only 1 %).

At the end of the day Peep presented cost benefit analyzes (CBA) which had been done by Irish and UK partners respectively for stick readers and for EID weight crate. Performed CBA showed that both stick reader and eid weight crate provide many benefits to farmers like e.g accuracy of records, better individual animal management, increased information of animal production and reduced stress for animal and for farmers/staff. Estonian farmers fully agreed with the partners' opinion.

Peep thanked all the participants and wished everyone a safe journey home.



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