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Session 96



Implementing an autodrafter-weighing scale for assessing the body weight changes and grouping dairy sheep and goats during lactation

G. Caja¹, A. Elhadi¹ and R. Costa²

¹Group of Research in Ruminants, Department of Animal and Food Sciences

²Servei de Granges i Camps Experimentals

Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain



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TechCare: Integrating innovative **TECH**nologies along the value **Chain** to improve small ruminant welf**ARE** management
 UE H2020 Project Contract No 862050: www.techcare-project.eu

- **Prioritizations in dairy sheep and goats: Intensive conditions in Spain (Caja & Elhadi, 2021, 2022)**

Dairy sheep/goats	Priority	Votes
Welfare issues		
Mastitis	1	79%
Nutrition issues	2	69%
Environment and shelter conditions	3	69%
Sensors and technologies		
Weather stations internal-external (THI)	1	83%
Electronic milk meters (milk yield)	2	68%
Automated weighing scales (BW)	3	56%
Acelerometrs-3A (activity)	4	51%



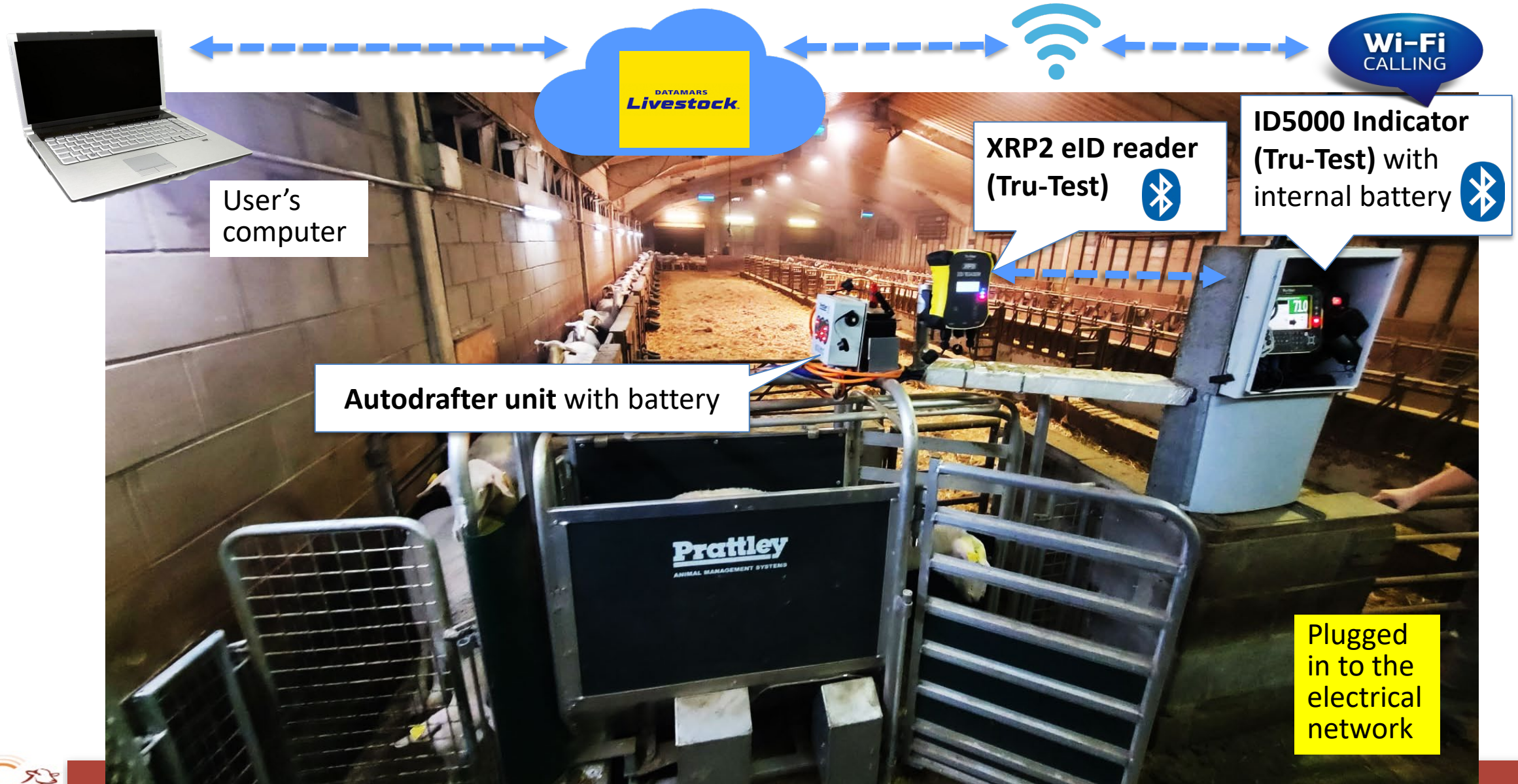
Task 3.3. Aim: Adapting and testing pre-existing PLF technologies to match specific animal welfare priorities and other production parameters

Specific aims and questions to respond:

- Commercially available device able to be shared among farms:
Prattley 2-ways Autodrafter Datamars (12,000 €, software and TVA included)
- Able to be implemented in previously existing farms:
SGCE of UAB (Bellaterra)
- Able to be automatically operated in dairy ewes and dairy goats:
Do not alter operation sheep and goat flow after milking (≈ 200 head/h?)
- User friendly software, robustness and durability:
On place from September 2023 (12 mo currently at the UAB)
- Use of weekly BW as welfare indicator:
Nutrition/diseases issues (EWS?)
- Able to be used for other welfare indicators (BCS, Wool, Stress, Order,...)?

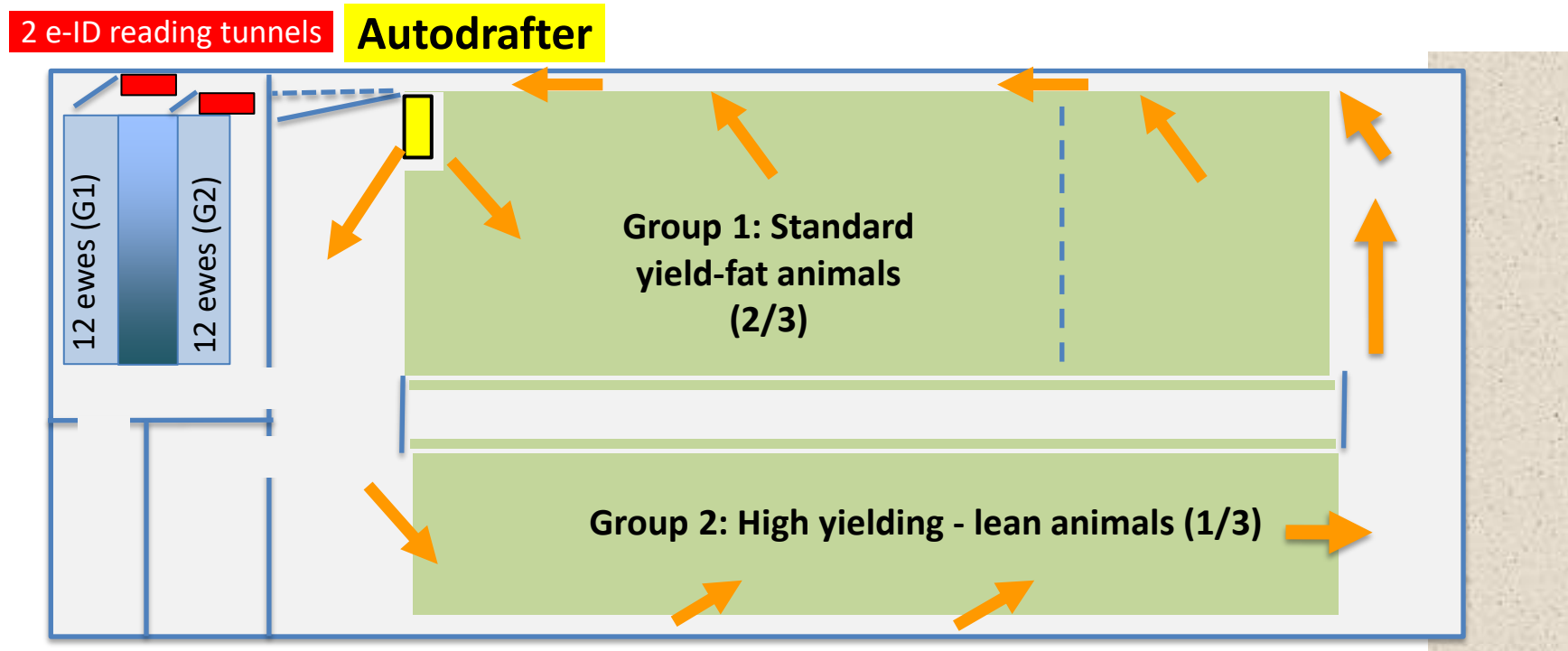


Prattley-Datamars autodrafter scale implemented at the experimental farm of the UAB



Experimental farm features and operating conditions:

- Dairy sheep (Manchega, n = 40; Lacaune, n = 120) and goats (Murciano-Granadina, n = 50)
- Semi-intensive: 6 h/d grazing + TMR (F:C = 60:40) + 0.1 kg concentrate at each milking.
- Joined as an only flock for grazing (6 h/d) and milking (2x daily).
- **Weighed once a week after milking and before grazing during the whole year.**
- Groups recomposed after grazing .

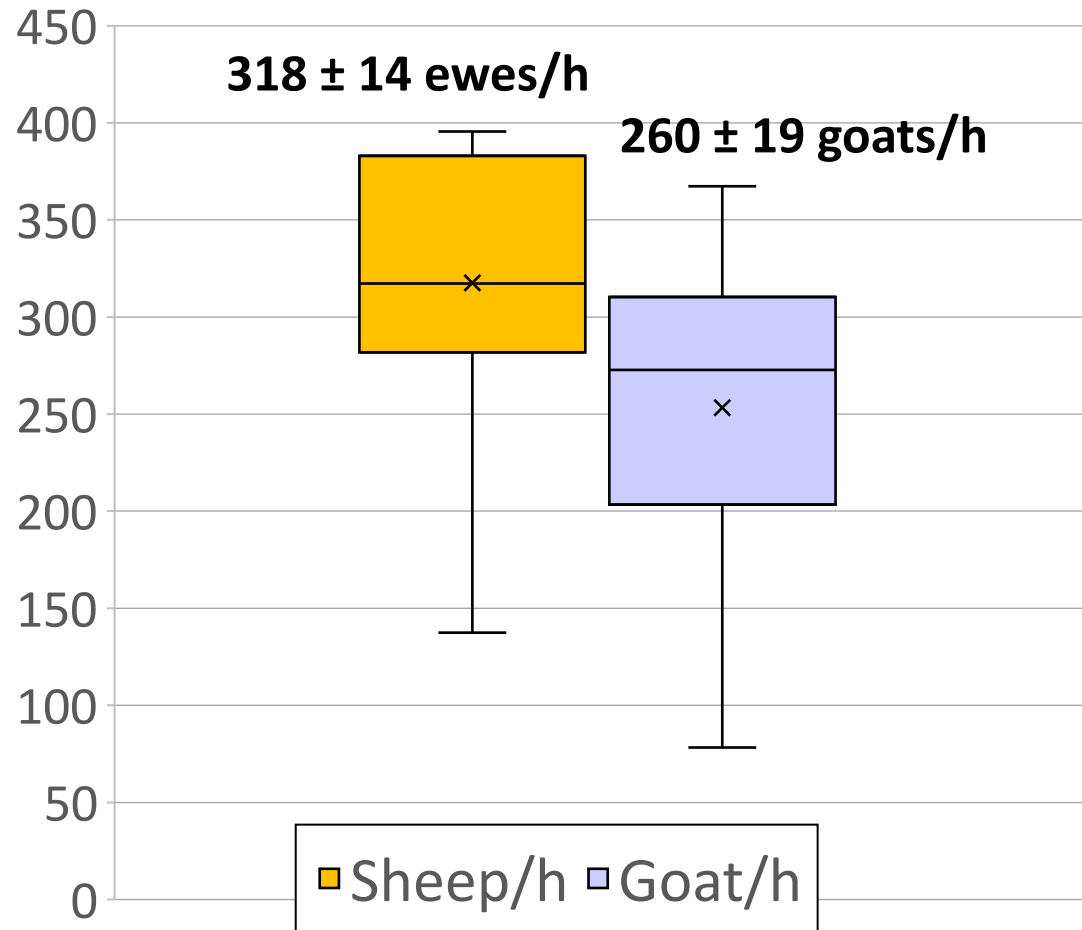




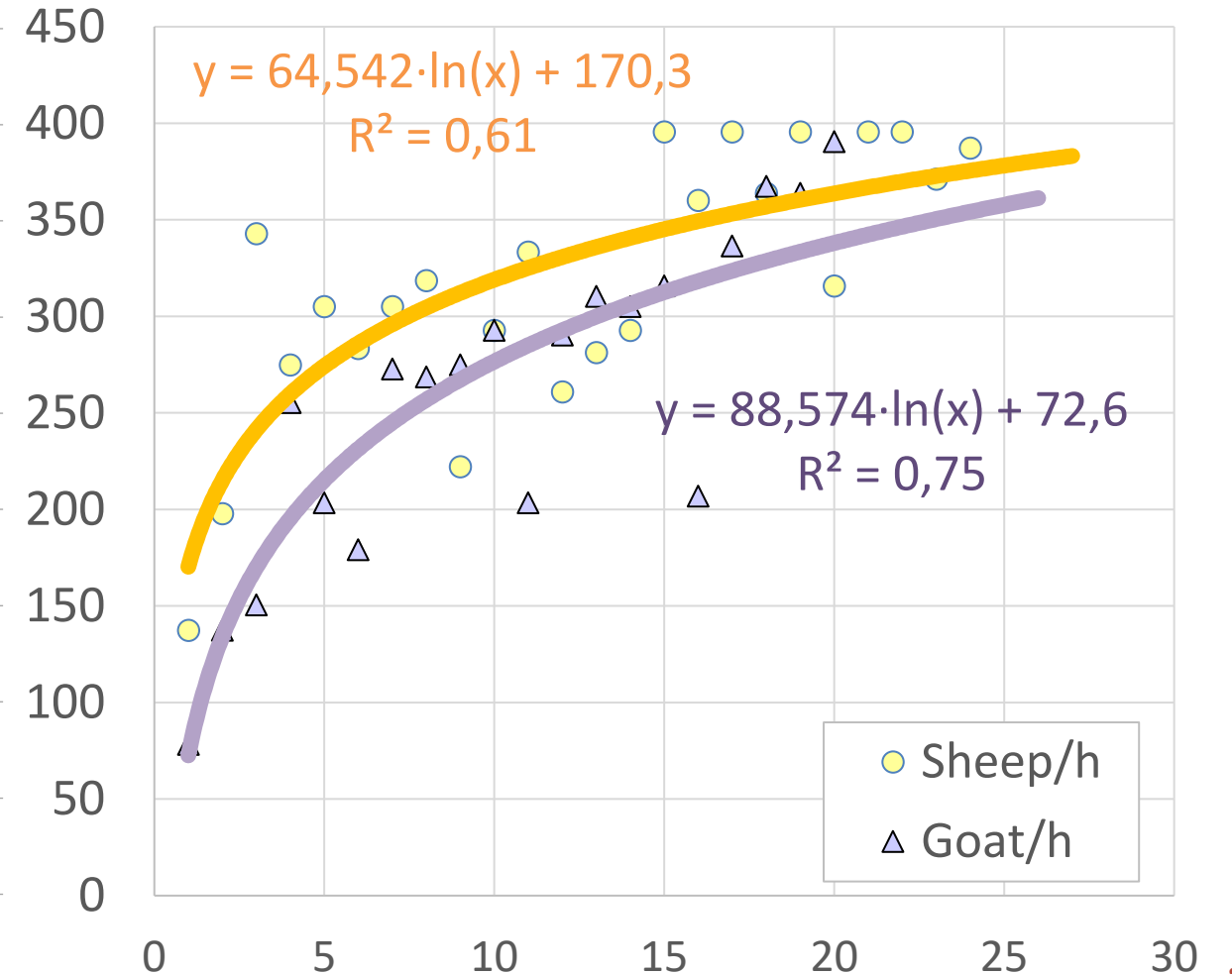


Results of the Autodrafter-weighing throughput

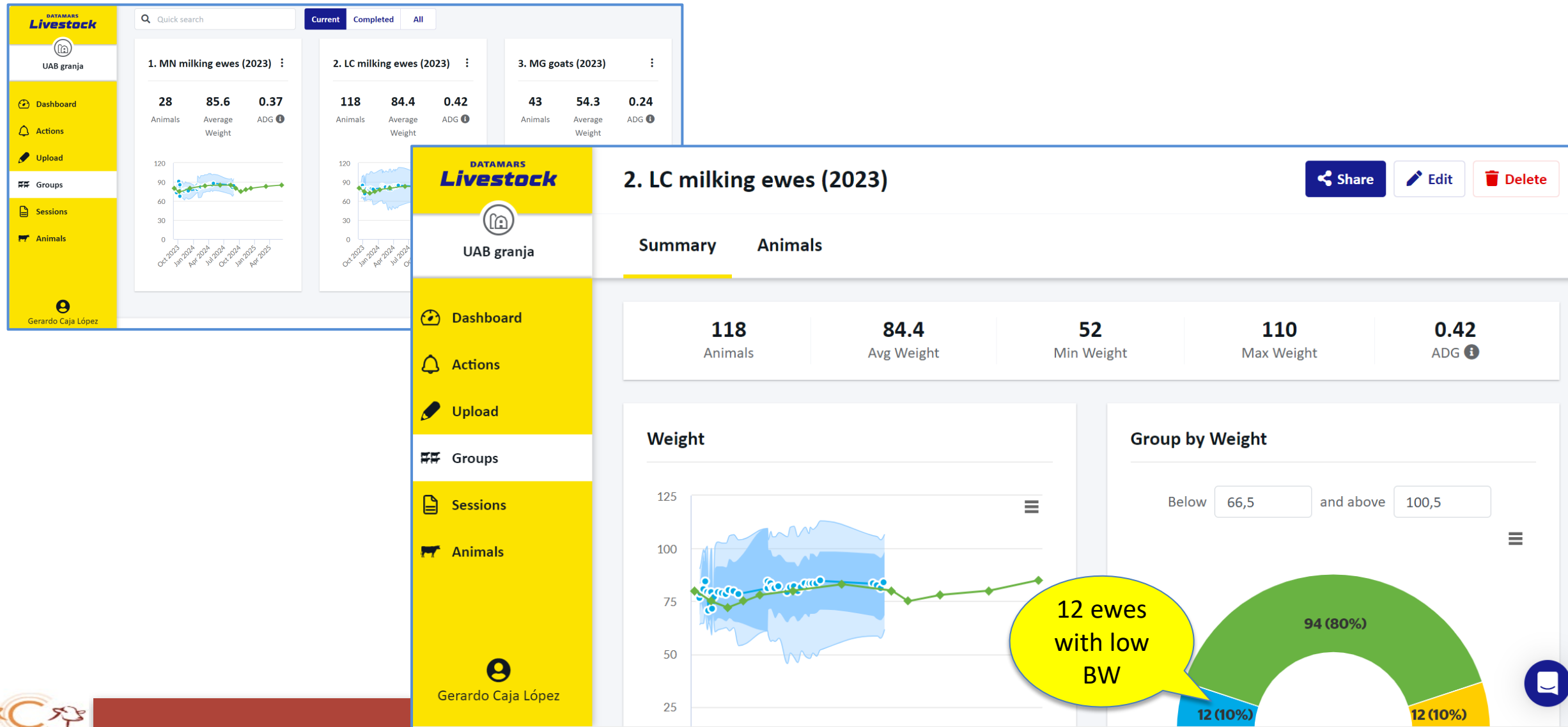
Autodrafter throughput



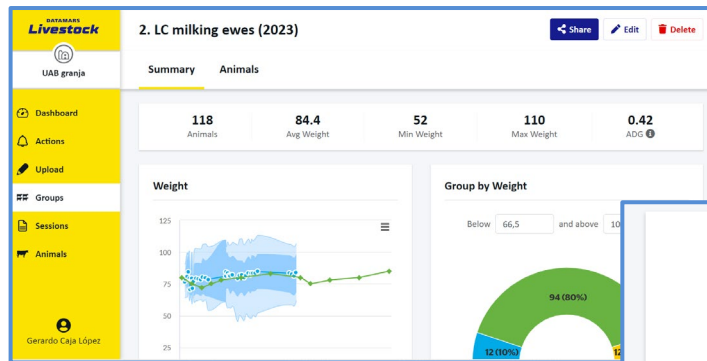
Learning progress by sessions



Upload into the Datamars Livestock cloud (free)



Individual analysis of tails: 1/2



12 ewes
with low
BW

12 / 118
Animals

62.5
Avg Weight

52
Min Weight

66
Max Weight

0.31
ADG ⓘ

Q Quick search

Weight Below 66.5 X

+ Add Filter

Update Status ▾

Change Group

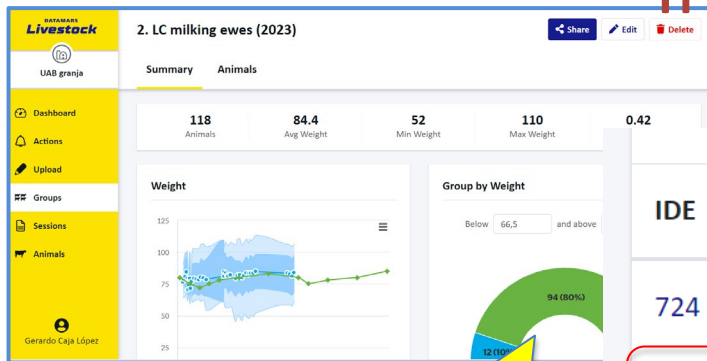
Export ▾

Columns ▾

IDE	IDV	Weight	Weight Gain	Last Seen	ADG for Sessions	ADG Since Last Seen
724 091001062119	746	66		3 Oct 2023		
724 091001024037	661	56		29 Jan 2024		-0.09
724 091001062107	740	60.5		17 Oct 2023		0.25
724 091001193142	655	64		27 Aug 2024		0.79
724 091001193144	663	61.5		27 Aug 2024		0.57



Individual analysis of tails: 2/2



IDE	IDV	Weight	Weight Gain	Last Seen	ADG for Sessions
724 091001062119	746	66		3 Oct 2023	
724 091001024037	661	56		29 Jan 2024	-0.09
724 091001062107	740	60.5		17 Oct 2023	0.25
724 091001193142	655	64		27 Aug 2024	0.79
724 091001193144	663	61.5		27 Aug 2024	0.57
724 091001193151	626	52		30 Apr 2024	0.43
724 091001193133	640	64.5		27 Aug 2024	0.57
724 091001193132	610	64		27 Aug 2024	0.21
724 091001193146	665	66		27 Aug 2024	0.36
724 091001193137	648	65.5		27 Aug 2024	0.21

EWS:
Yield &
BCS Sorting

Conclusions:

1) Prattley 2-ways Autodrafter- Datamars:

- Was **easily implemented** in a preexisting farm for sheep and goats, despite the **insufficient instructions** received (to be improved!).
- The use of EU official LF-ISO readers (134.2 kHz) and eID boluses (22 g) were fully efficient for automatic weighing and sorting of dairy sheep and goats.
- Both ewes and does were easily trained and reached a throughput >300 head/h after 15 sessions.
- Differences by species, breed (and individuals?)

2) Datamars Livestock software:

- **Was easily adapted as an EWS** to detect ewes and does losing weight (or winning excessive weight) during lactation.



Thank you for attention!

gerardo.caja@uab.es



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