

Total merit index for sheep breeds with focus on meat production

Birgit Fuerst-Waltl¹ and Christian Fuerst²

¹University of Natural Resources and Life Sciences Vienna (BOKU), Vienna, Austria, birgit.fuerst-waltl@boku.ac.at

²ZuchtData EDV-Dienstleistungen GmbH, Vienna, Austria, fuerst@zuchtdata.at

OBJECTIVES

- Development of a total merit index for sheep breeds with focus on meat production (specialized meat breeds and Merinoland)
- Adaption of derived weights in order to achieve positive selection response for all traits

BACKGROUND

- More than 13,000 herdbook ewes (> 1yr) with focus on meat production in Austria
- Specialized meat breeds (e.g. Suffolk, Texel) and Merinoland sheep
- Meat performance testing mandatory since 2003
- Fitness related traits based on animal registration

ROUTINE GENETIC EVALUATION

- Since 2017
- EBVs: MiX99 (Lidauer et al., 2015)
- Weekly evaluations
 - Meat traits daily gain, eye muscle and fat depth
 - Fitness traits lambing interval, number of lambs born/born alive

TOTAL MERIT INDEX (TMI)

Relative weights (%) of meat and fitness traits

	Traits	Relative weights (%)			
		Meat breeds		Merinoland	
Meat traits	Daily gain	15.0	60	12.0	40
	Muscle depth	26.0		14.0	
	Fat depth	1.0		1.0	
	Daily gain maternal	18.0		13.0	
Fitness traits	Lambs born	19.6	40	20.0	60
	Lambs born alive	6.8		11.0	
	Lambs born pat.	4.0		5.0	
	Lambs born alive pat.	1.6		3.0	
	Lambing interval	8.0		21.0	

CONCLUSION

- **TMI**, the mathematical definition of breeding goal, **includes** both, **meat and fitness traits**
- **Starting point for breeding goal** that is **sustainable** and **economically feasible**
- **Next steps:**
 - routine genetic evaluation for **longevity**
 - **inclusion of longevity in TMI**

WEIGHTS VS. SELECTION RESPONSE

