

# Understanding the seasonality of performance resilience to climate volatility in Mediterranean dairy sheep

## Authors & Affiliations:

Valentina Tsartsianidou<sup>1\*</sup>, Vanessa Varvara Kapsona<sup>2</sup>, Enrique Sánchez-Molano<sup>3</sup>, Zoitsa Basdagianni<sup>4</sup>, Maria Jesús Carabaño<sup>5</sup>, Dimitrios Chatziplis<sup>6</sup>, Georgios Arsenos<sup>7</sup>, Alexandros Triantafyllidis<sup>1</sup> & Georgios Banos<sup>2,7</sup>

<sup>1</sup> Department of Genetics, Development & Molecular Biology, School of Biology, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

<sup>2</sup> Department of Animal and Veterinary Sciences, Scotland's Rural College, Roslin Institute Building, Easter Bush, Midlothian EH25 9RG, UK

<sup>3</sup> Division of Genetics and Genomics, The Roslin Institute and Royal (Dick) School of Veterinary Studies, University of Edinburgh, Easter Bush, Midlothian EH25 9RG, UK

<sup>4</sup> Department of Animal Production, School of Agriculture, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

<sup>5</sup> Departamento de Mejora Genética Animal, Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA), 28040 Madrid, Spain

<sup>6</sup> Laboratory of Agrobiotechnology and Inspection of Agricultural Products, Department of Agriculture, International Hellenic University, Alexander Campus, 57400 Sindos, Greece

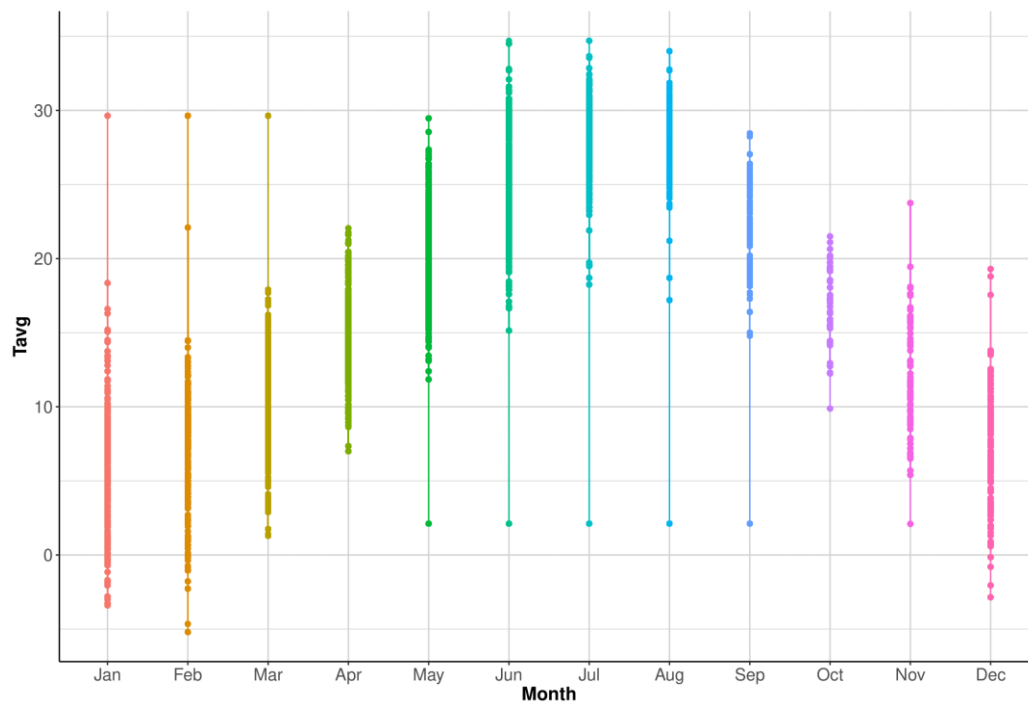
<sup>7</sup> Laboratory of Animal Husbandry, School of Veterinary Medicine, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

\*corresponding author:

tsarvale@bio.auth.gr

+306951626615

## Supplementary Material



**Figure S1** Average air temperature (Tavg) and dispersion by calendar month during the period of study (2003-2018).

**Table S1: Correlation estimates between animal resilience to hot and cold weather by lambing season (standard errors in brackets). Tavg10, Tavg25, Tavg10\_lag7, Tavg25\_lag7: milk yield change by 1°C temperature change at 10°C and 25°C on the milk test date and cumulative average air temperature change during the week preceding**

Season	Phenotypes	$r_P$	$r_A$
Autumn	Tavg10-Tavg25	0.77 (0.00)*	0.86 (0.03)*
	Tavg10-Tavg25_lag7	0.63 (0.01)*	0.76 (0.04)*
Winter	Tavg10-Tavg25	0.48 (0.01)*	0.46 (0.05)*
	Tavg10-Tavg25_lag7	0.50 (0.01)*	0.52 (0.05)*
Spring	Tavg10-Tavg25	-0.03 (0.01)*	-0.22 (0.25)
	Tavg10-Tavg25_lag7	-0.19 (0.01)*	-0.73 (0.10)*

the milk test date respectively. Estimates significantly different from zero ( $P < 0.01$ ) are indicated with an asterisk.