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► To cite this version:

C Bonnefous, Bertrand Méda, Karine Germain, Laure Ravon, Théophile de Rauglaudre, et al.. How does broiler range use impact forage intake, outdoor excretion and gaseous emissions?. 74. Annual Meeting of the European Federation of Animal Science, Aug 2023, Lyon, France. hal-04193917

HAL Id: hal-04193917

<https://hal.inrae.fr/hal-04193917>

Submitted on 1 Sep 2023

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How does broiler range use impact forage intake, outdoor excretion and gaseous emissions?



C. Bonnefous¹, B. Méda¹, K. Germain², L. Ravon², T. de Rauglaudre¹, J. Collet¹, S. Mignon-Grasteau¹, M. Reverchon³, C. Berri¹, E. Le Bihan-Duval¹, A. Collin¹

Corresponding author : claire.bonnefous@inrae.fr

¹ INRAE, Université de Tours, BOA, 37380 Nouzilly, France; ² INRAE, UE EASM, Le Magneraud, CS 40052, 17700, Surgères, France; ³ SYSAAF, 37380 Nouzilly, France

Introduction:

The PPILOW project aims to improve welfare, notably in free-range poultry

Free-range enables broiler chickens to express a wide range of natural behaviours

Free-range broilers both eat and excrete outdoors

How does range use in different strains impact forage intake and N emissions ?

Methods:

Radio Frequency Identification (RFID) to evaluate the time spent outdoors:

On 100 males and 100 females

- No range use difference between males and females
- Projection of time spent outdoors per day on the whole population



Strains S757N, JA757 and DP of average daily gains of 26 g/d, 36 g/d, and 16 g/d

Results:

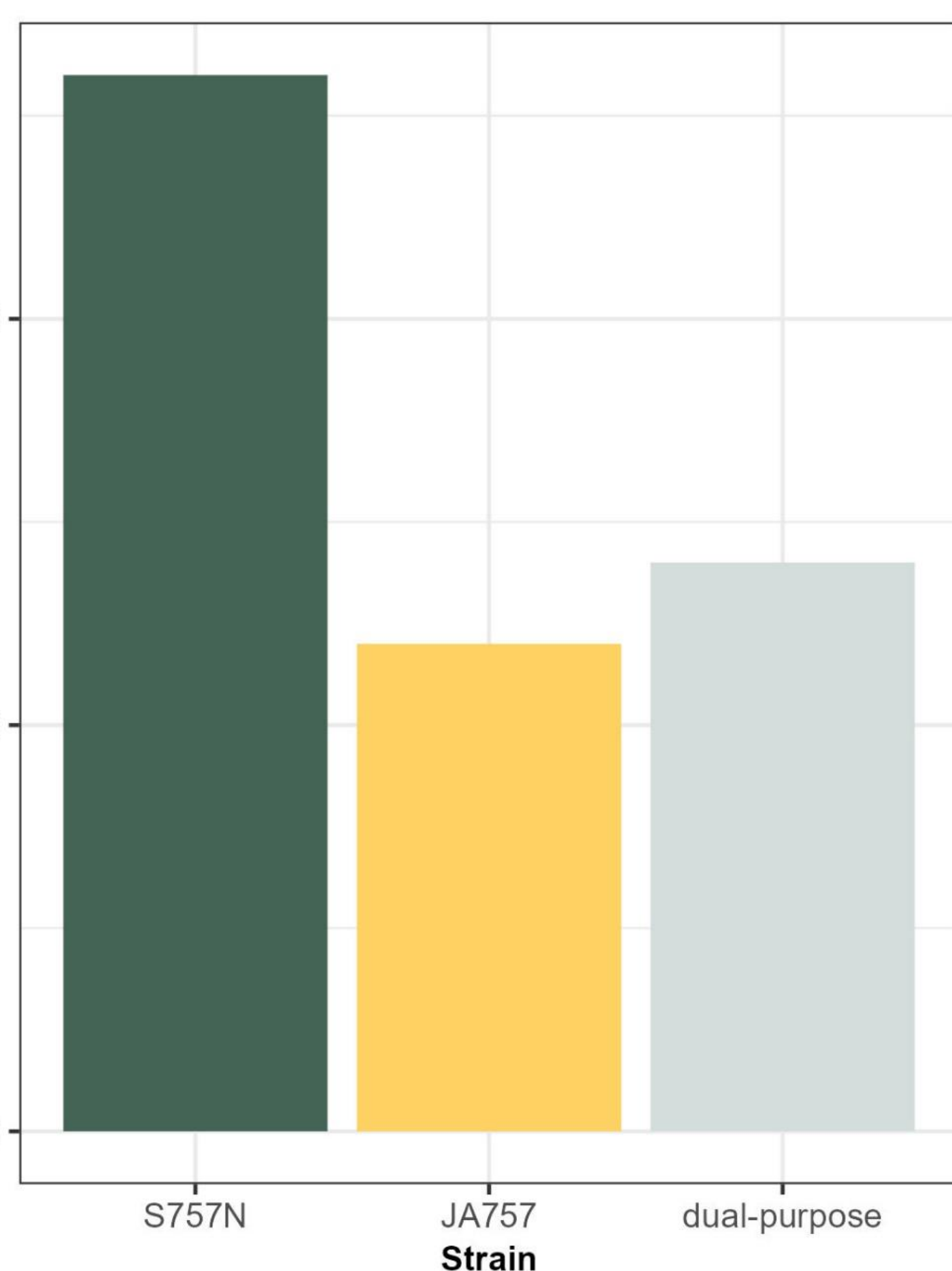
Animal performances

	S757N	JA757	DP
Slaughter age (days)	100	86	121
Outdoor access total time (days)	64	50	85
Number of animals at slaughter	648	656	656
Final body weight (kg)	2.6	3.2	1.9
Feed conversion ratio	3.25	2.73	3.93

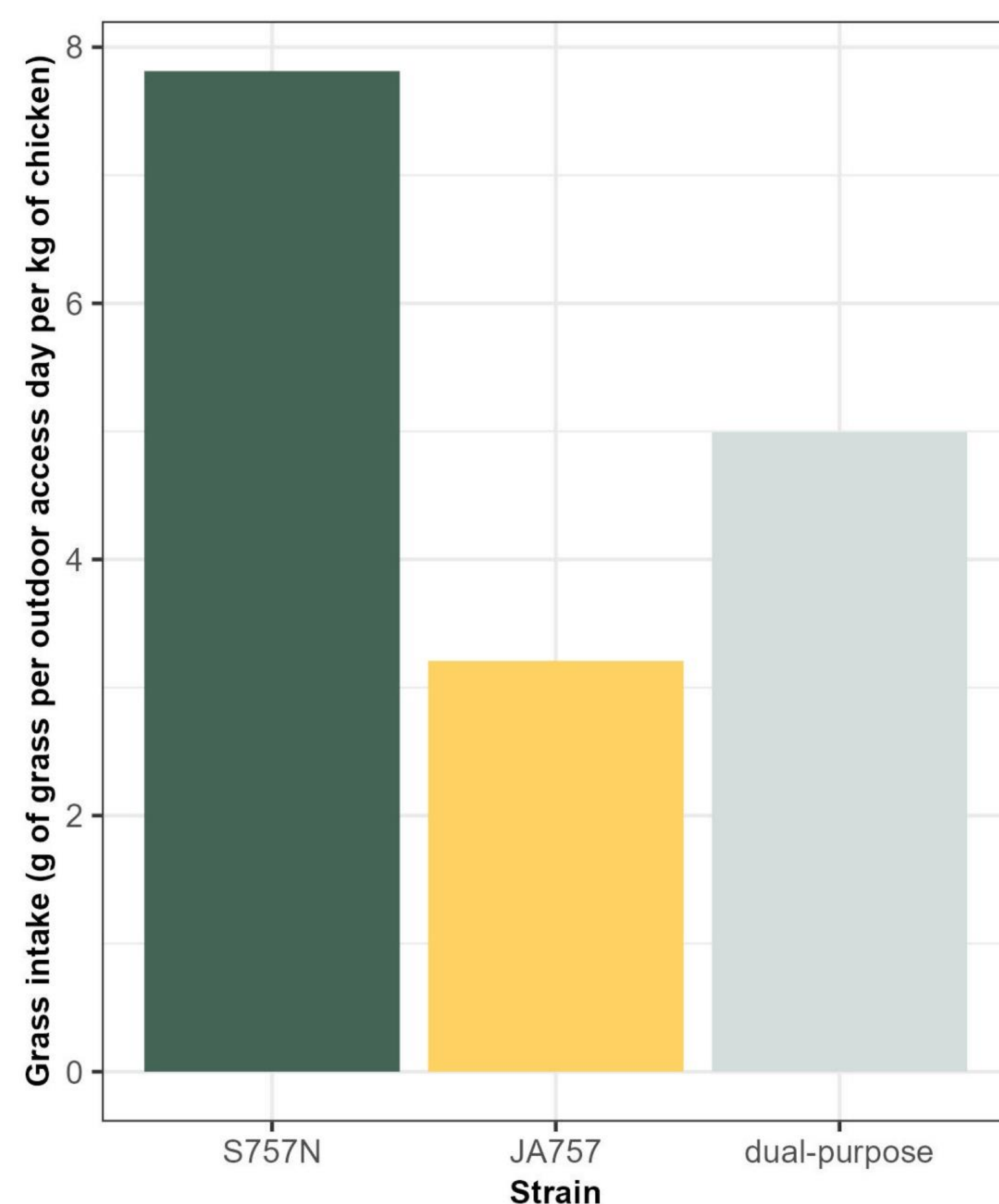


C. Bonnefous, ©INRAE

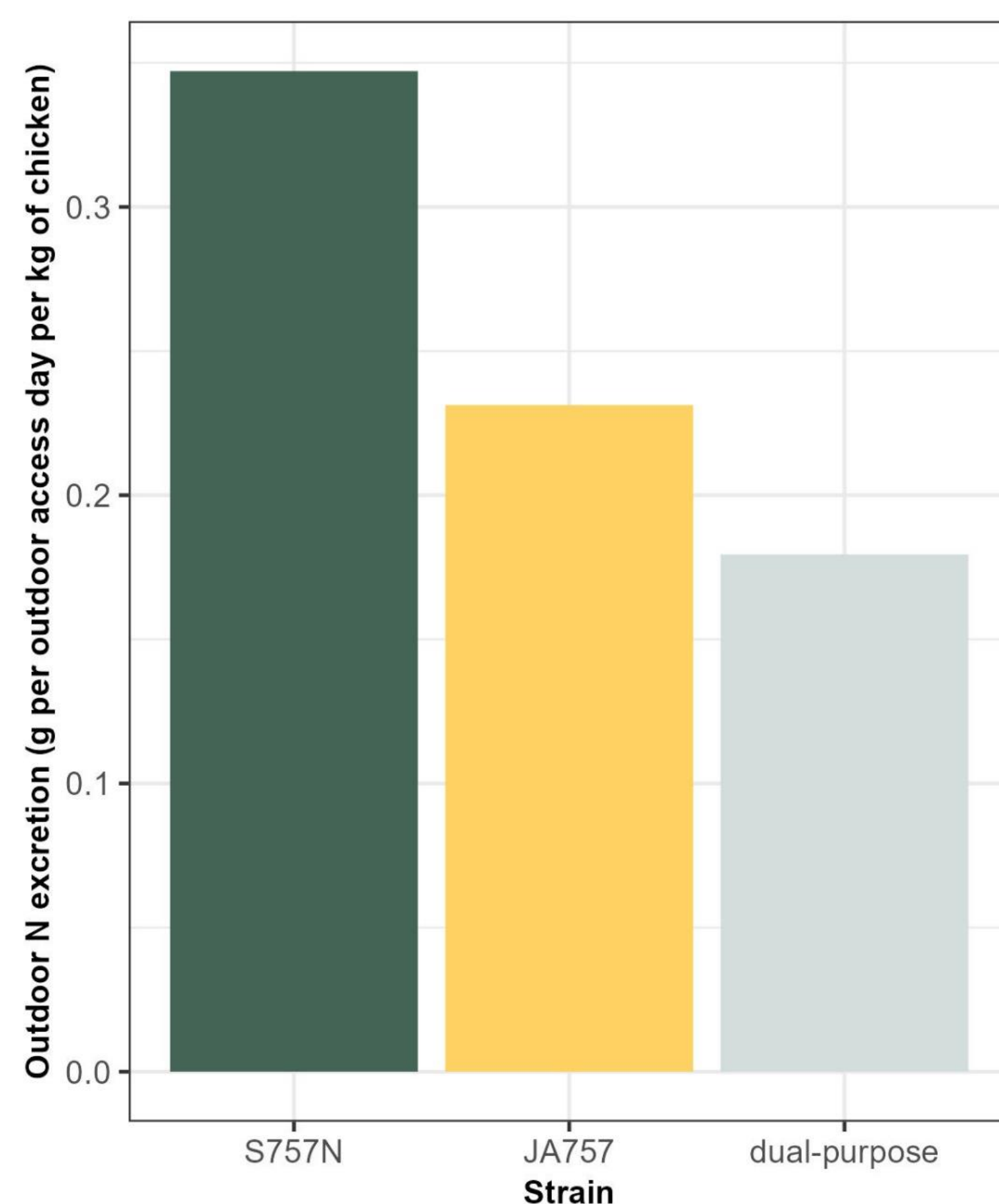
Days outdoor per outdoor access day in different strains



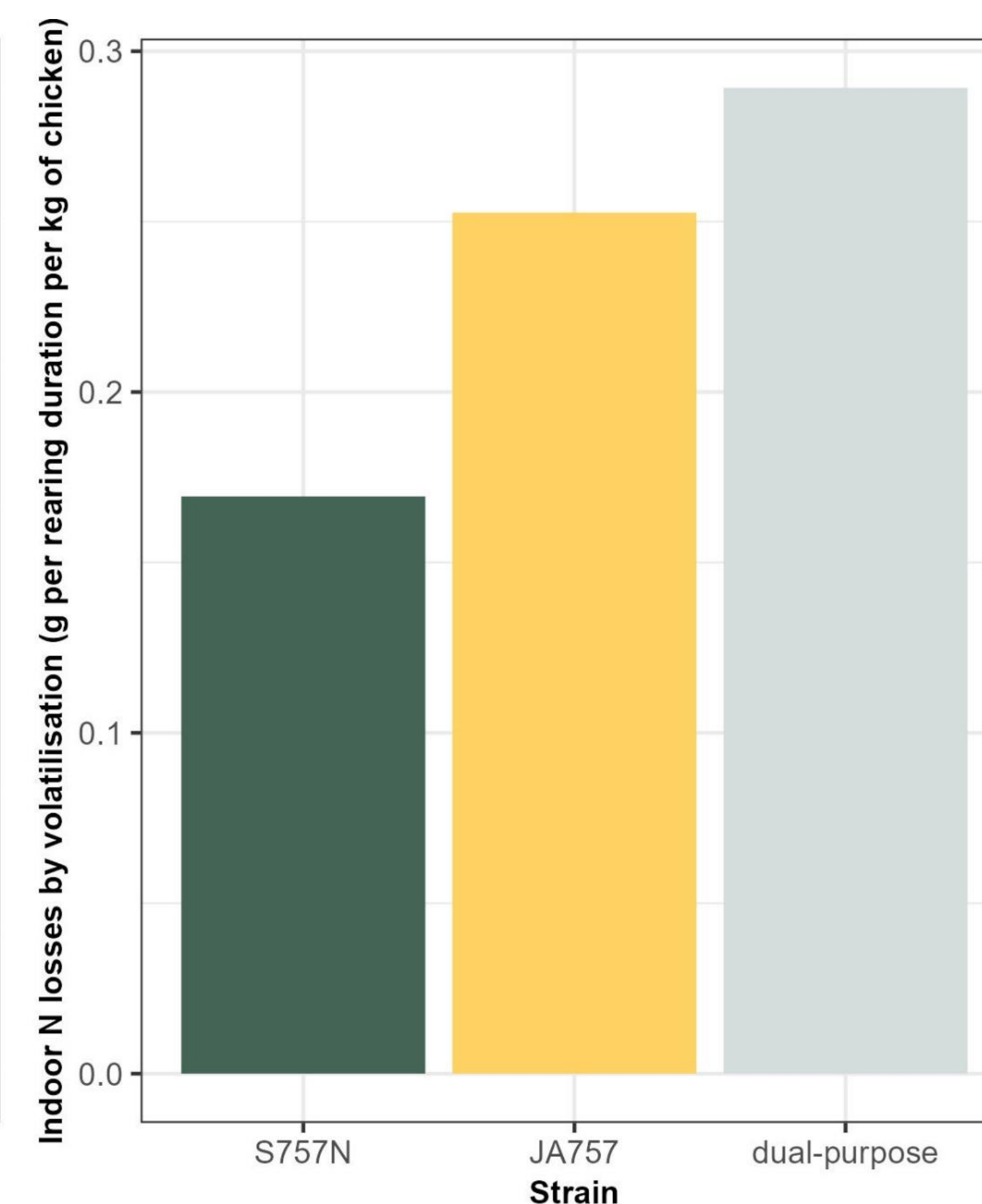
Grass intake per outdoor access day in different strains



Outdoor N excretion per kg chicken per outdoor access day in different strains



Indoor N volatilisation per kg chicken per outdoor access day in different strains



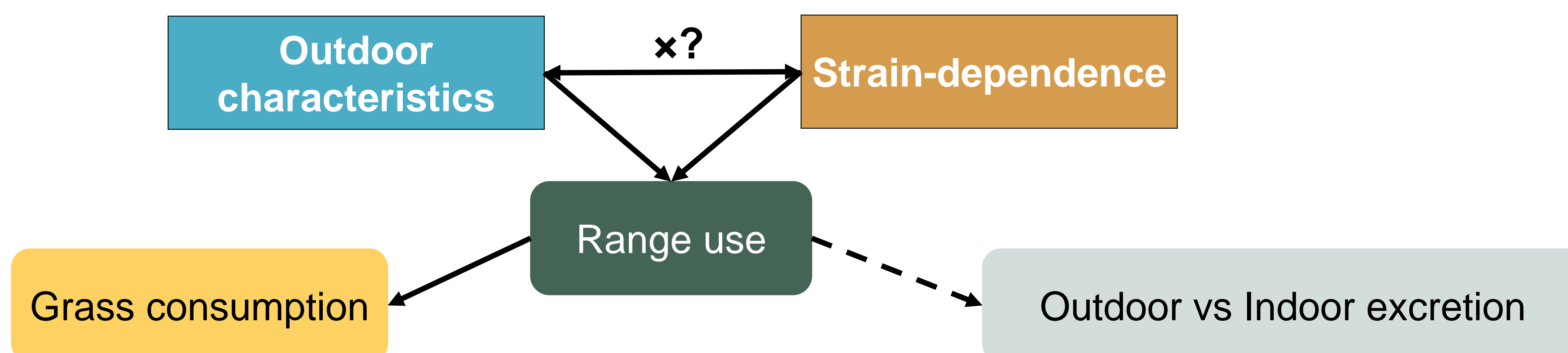
S757N chickens spent about **twice as much time outdoors** as the other strains

S757N chickens consumed about **144% and 56% more grass** than the JA757 and DP chickens

Outdoor N excretions were about 50% and 93% greater in S757N chicken than those of JA757 and DP chickens

Indoor N volatilisation was about 33% and 41% lower in S757N chicken than in JA757 and DP chickens

Take home message:



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 816172

