

Knowledge, Attitudes and Practices Regarding Antimicrobial Use Among Small Ruminant Farmers from Portugal

Alexandra Baptista^{1,2,3}; Rita Cruz^{1,4,5}; Fernando Esteves^{1,2}; Cármen Vasconcelos-Nóbrega^{1,6}; Ana Cristina Mega^{1,2}; Madalena Malva⁷; Hélder Quintas^{8,9}; Maria Aires Pereira^{1,2,10}

¹Instituto Politécnico de Viseu, Escola Superior Agrária de Viseu, Portugal; ²CERNAS-IPV Research Centre, Portugal; ³Universidade de Trás-os-Montes e Alto Douro, Portugal; ⁴Epidemiology Research Unit (EPIUnit), Portugal; ⁵Laboratory for Integrative and Translational Research in Population Health (ITR), Portugal; ⁶Center for the Research and Technology of Agro-Environmental and Biological Sciences (CITAB), 5000-801 Vila Real, Portugal; ⁷Instituto Politécnico de Viseu, Escola Superior de Tecnologia e Gestão de Viseu, Portugal; ⁸Instituto Politécnico de Bragança, Portugal; ⁹Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Portugal; ¹⁰Global Health and Tropical Medicine, Associate Laboratory in Translation and Innovation Towards Global Health, LA-REAL, Instituto de Higiene e Medicina Tropical, IHMT, Universidade NOVA de Lisboa, Portugal.

INTRODUCTION

The use of antibiotics in farm animals is believed to be one of the factors driving the emergence of antibiotic-resistant bacteria (ARB). The evaluation of Knowledge (K), Attitude (A) and Practices (P) of farmers allows the design of appropriate educational actions for responsible antimicrobial use (AMU).

Aims: To assess the Knowledge (K), Attitudes (A), and Practices (P) of small ruminant farmers in Portugal regarding antimicrobial use, resistance, and residues.

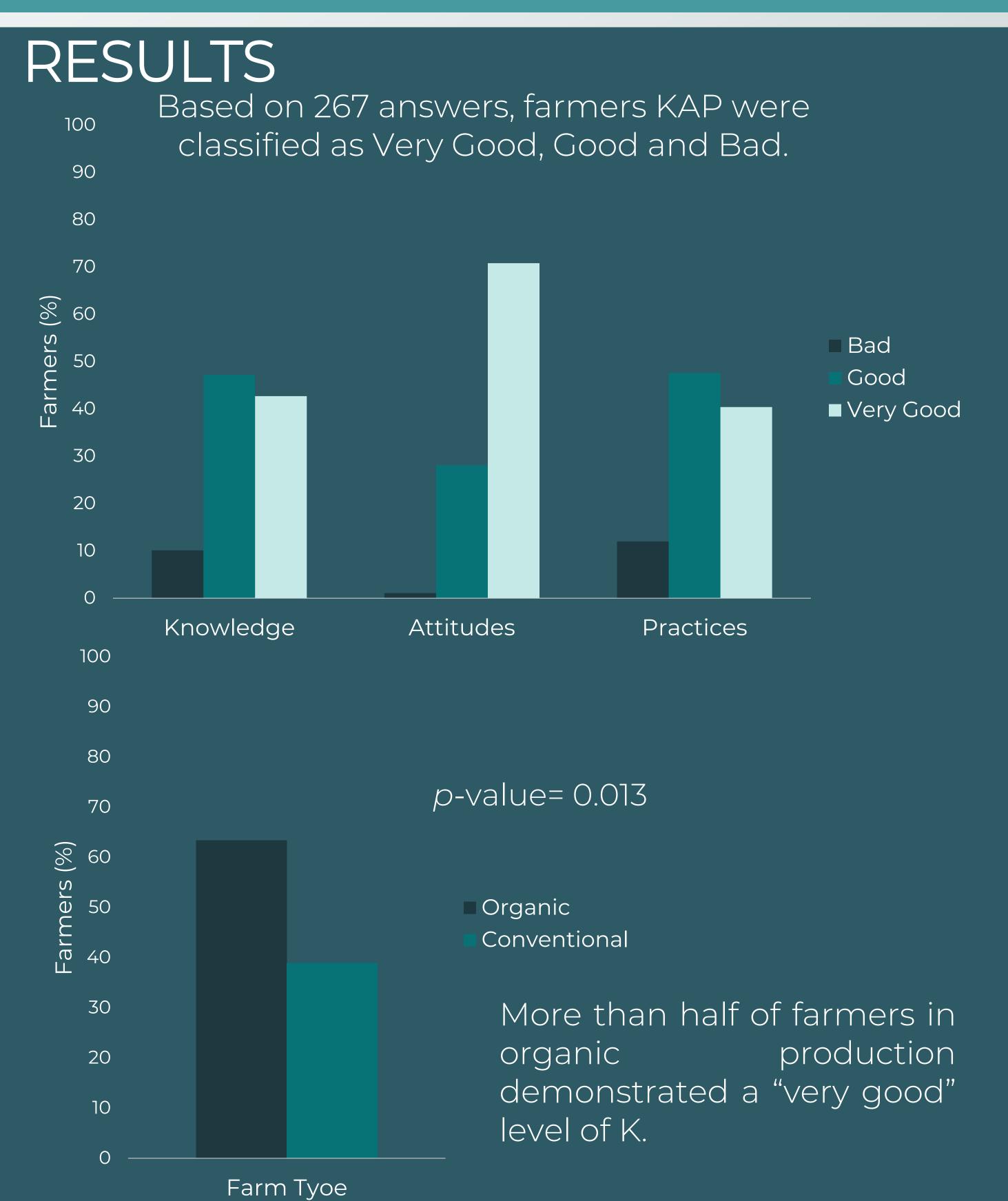
MATERIALS AND METHODS

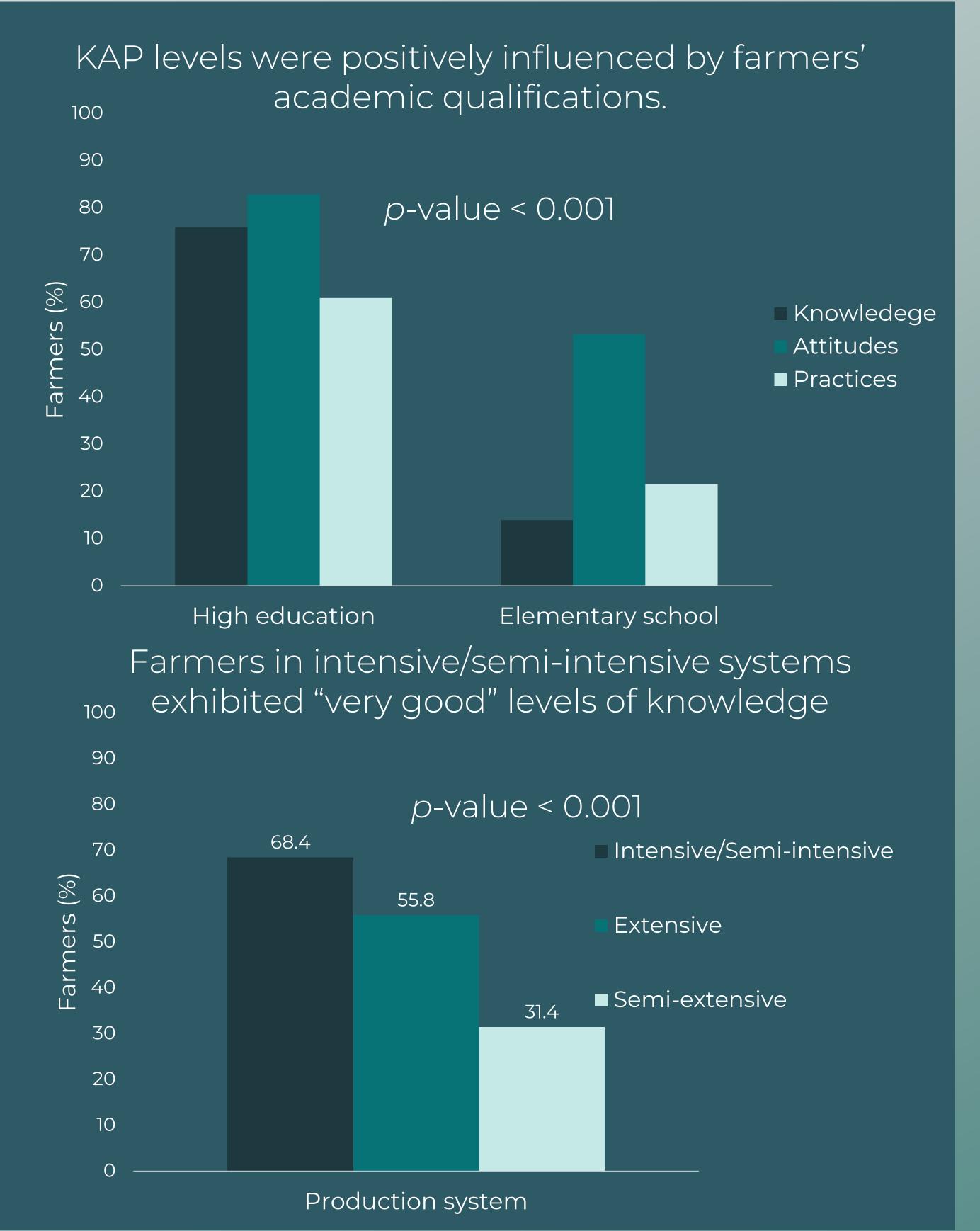
Validated Questionnaire with 4 sections:

- Sociodemographic info;
- KAP assessment (7 questions each).

Scoring: Correct answer = 1, Incorrect answer = 0. Levels: Bad (0–2), Good (3–5), Very Good (6–7).

The questionnaire was distributed by farmers' associations and completed face-to-face by researchers.





CONCLUSIONS

Academic qualifications, organic certification, and intensive production systems were associated with higher KAP levels, particularly in knowledge. The gap between attitudes and practices highlights the need for targeted education. Strengthening training and awareness among small ruminant farmers is essential to promote responsible AMU and combat resistance.









