



# Early characterization of behavioural reactivity in two Italian Chicken Breeds: a preliminary study

## Introduction

Heritage breeds conservation plans need accurate and objective evaluation of birds phenotype at morphological, behavioural and productive level to define their uniqueness.

Behaviour can be considered the way the living being interact with the environment and cope with it.

Behavioural plasticity plays a pivotal role defining chicken breeds' coping ability.

Standard behavioural test like Tonic Immobility (TI) and Emergence Test (ET) protocols supply reliable and objective data about birds reactivity.

## Aim

To characterise fear responses and their antipredator significance in two chicken breeds particularly adapted to extensive, en plein air rearing conditions..

## Materials & Methods

A total of 42 (N), 7 days old chicks were tested (N=21 Milanino: MLN; N=21 Mericanel della Brianza: MRB). Chicks were simultaneously hatched and reared in the same room (3 pen/breed; 1 m2/pen; starter diet; ad libitum fresh water; infrared heating lamp). Tonic Immobility (TI) and Emergence Test (ET) were applied. Bird's live weight (LW), number of induction (N, max 3; TIN), TI duration (s, max 180 s, TIDU), number of vocalization (n, TIVO) vocalization rate (N/s, vocalization/TI duration, TIVR) in TI; head emergence out of the box latency (s, ETHE), first step out of the box latency (s, ETFS), bird's complete emergence out of the box latency (s, ETCE), number of vocalization (n, ETVO), defecation (n, ETDE) in in ET (max latency time 180s). Data have been analysed using GLM procedure: (breed=source of variation; SAS® 9.4; Student's t-test; LSMeans±s.e.).

## Conclusions

•High intensity vocalizations are considered an antipredator response in domestic chicken, breed specific differences at early age have been described underlining the uniqueness of the behavioural repertoire of heritage chicken breeds at every life stage.

Marelli S.P., Zaniboni L., Tognoli C., Madeddu M., Cerolini S.

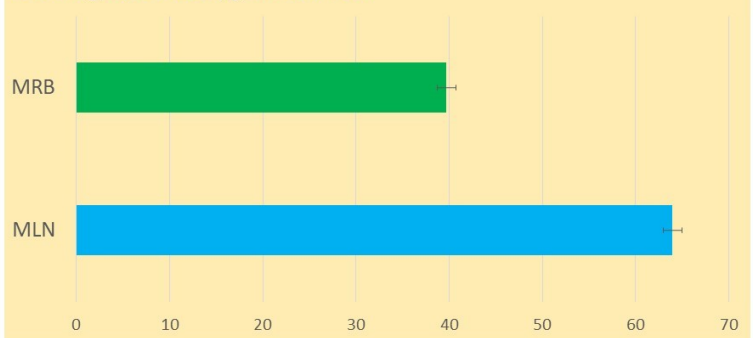
Department of Veterinary Medicine and Animal Sciences, University of Milan, via Dell'Università 6, 26900 Lodi (LO) Italy

Contact: stefano.marelli@unimi.it

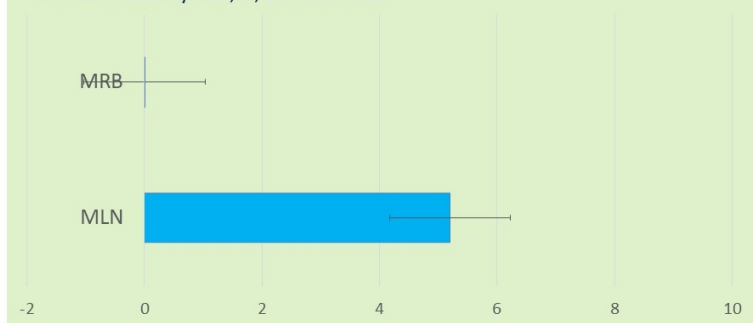
## Results

Significant differences were described in LW: MIL=63.95±1.25; MRB=39.70±1.25, in TIVO: MIL=5.20±1.04; MRB=39.70±1.04 and TIVR: MIL=0.30±0.05; MRB=0.00±0.05. No significant differences were recorded in ET parameters, anyway, ETVO was higher in MLN (38.80±13.76 vs. 17.95±13.76).

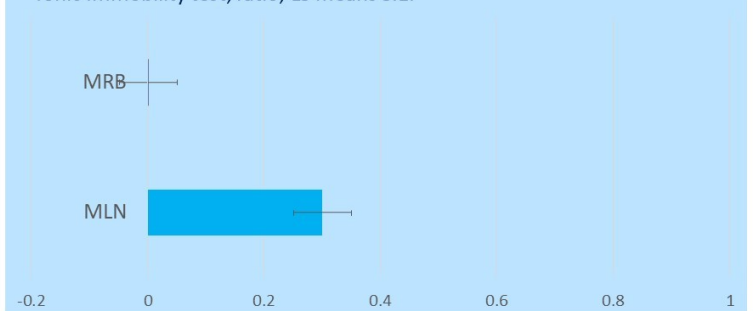
Live weight per breed ; g; LS means S.E.



Number of vocalizations per breed; Tonic Immobility test; N; LS means S.E.



Vocalization rate per breed; Tonic Immobility test; ratio; LS means S.E.



Mericanel della Brianza & Milanino one day old chicks