CELEBRATING THE CENTENNIAL ANNIVERSARY

1921 100 2021

OF THE FIRST WORLD'S POULTRY CONGRESS

WPC

WORLD'S POULTRY CONGRESS

07-11 AUGUST 2022

PARIS, FRANCE | PALAIS DES CONGRÈS

Evaluation of adaptability response, through a behavioural observation, of four different chicken genotypes reared in a free-range system

A. Cartoni Mancinelli[a], C. Ciarelli[b], S. Mattioli[a], A. Dal Bosco[a], A. Trocino[c], C. Castellini[a]

[a]*Department of Agricultural, Environmental and Food Science, University of Perugia, Borgo XX Giugno 74, 06124 Perugia, Italy.*

[b]*Department of Agronomy, Food, Natural Resources, Animal, and Environment, University of Padova, Viale dell'Università 16, I-35020 Legnaro, Padova, Italy.*

[c]*Department of Comparative Biomedicine and Food Science, University of Padova, Viale dell'Università 16, I-35020 Legnaro, Padova, Italy.*

WPC
WORLD'S POULTRY CONGRESS

A.D. 1308
unipg
DIPARTIMENTO
DI SCIENZE AGRARIE,
ALIMENTARI E AMBIENTALI

A.D. 1308
unipg
DIPARTIMENTO
DI SCIENZE AGRARIE,
ALIMENTARI E AMBIENTALI

INTRODUCTION

WPC
WORLD'S POULTRY
CONGRESS

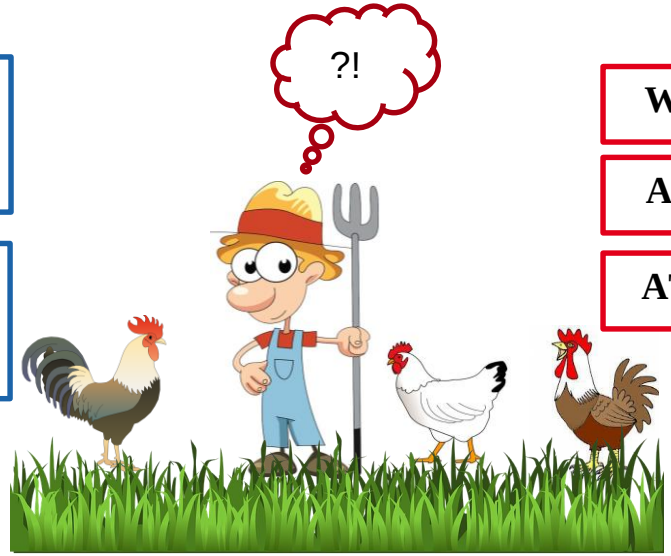
INTRODUCTION

"the welfare of an animal is its state as regards its attempts to cope with its environment" Broom 1986.

DWG

In some EU countries only Slow-Growing genotypes are allowed

In others EU Fast-Growing genotypes are still used



WELFARE

ACTIVITY

ATTITUDE

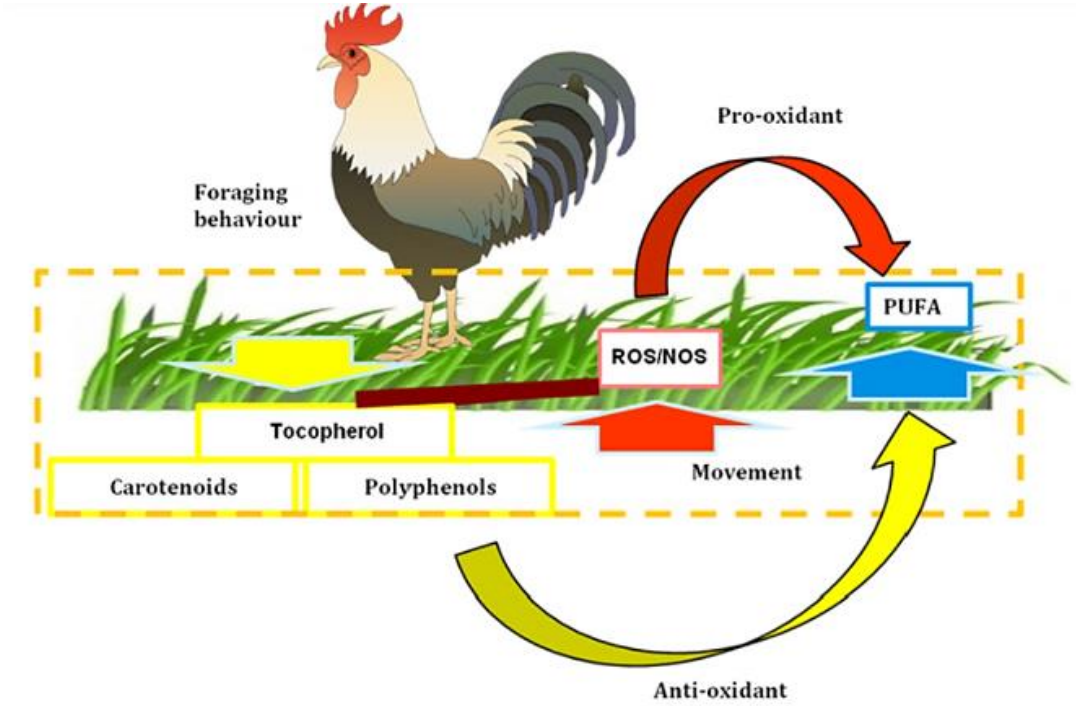
BEHAVIOUR

The Regulation (EC) n. 848/2018 suggests that in organic production the breed choice should take into account the capacity to adaptation to local conditions.

A.D. 1308
unipg
DIPARTIMENTO
DI SCIENZE AGRARIE,
ALIMENTARI E AMBIENTALI

INTRODUCTION

WPC
WORLD'S POULTRY
CONGRESS



AIM

The aim of this study was to assess the adaptability through a behavioural observation of four different commercial Slow Growing (SG) chicken genotypes free range reared.

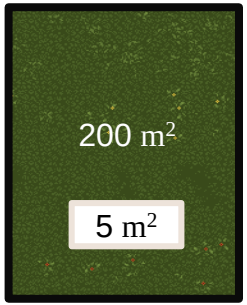
To emphasize the active behaviour among the four genotype studied the most active one was identified as a golden standard.

MATERIALS AND METHODS

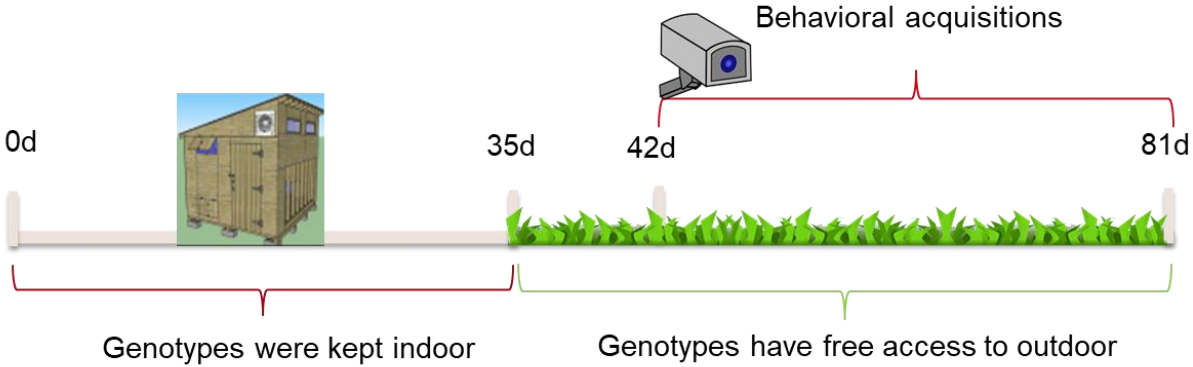
4 DIFFERENT SLOW GROWING GENOTYPES (DWG<50g/d)

CB LD NN A

100 chickens/genotype were randomly housed into 8 pens (2 pens per genotype; 50 animals each, 25 females and 25 males)



Animal density: 0.10 m^2/bird indoor and 4 m^2/bird outdoor



For each pen 2 videos/week of 2 hours length (9.00-11.00 AM) were performed for a total of 10 videos/genotype

A.D. 1308 unipg
DIPARTIMENTO DI SCIENZE AGRARIE, ALIMENTARI E AMBIENTALI

MATERIALS AND METHODS

WPC WORLD'S POULTRY CONGRESS

CHICKEN ETHOGRAM

ACTIVE


Walking


Running


Hiding

INGESTIVE


Grass pecking Feeding Drinking Other pecking

INTERACTION


Allo-grooming


Attacking


Escaping

STATIC


Resting


Roosting


Slepping

COMFORT


Self-grooming


Flapping wings

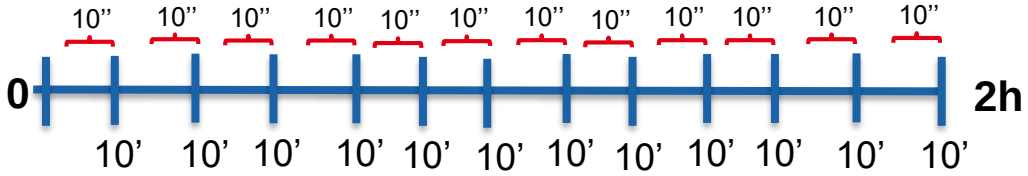

Stretching


Dust bathing


Scratching

MATERIALS AND METHODS

SCAN SAMPLING METHOD



For each video:
-12 scans of 10 minutes length
-10 seconds of observation/scan
-in each scan the behaviour and the total of chickens was recorded.

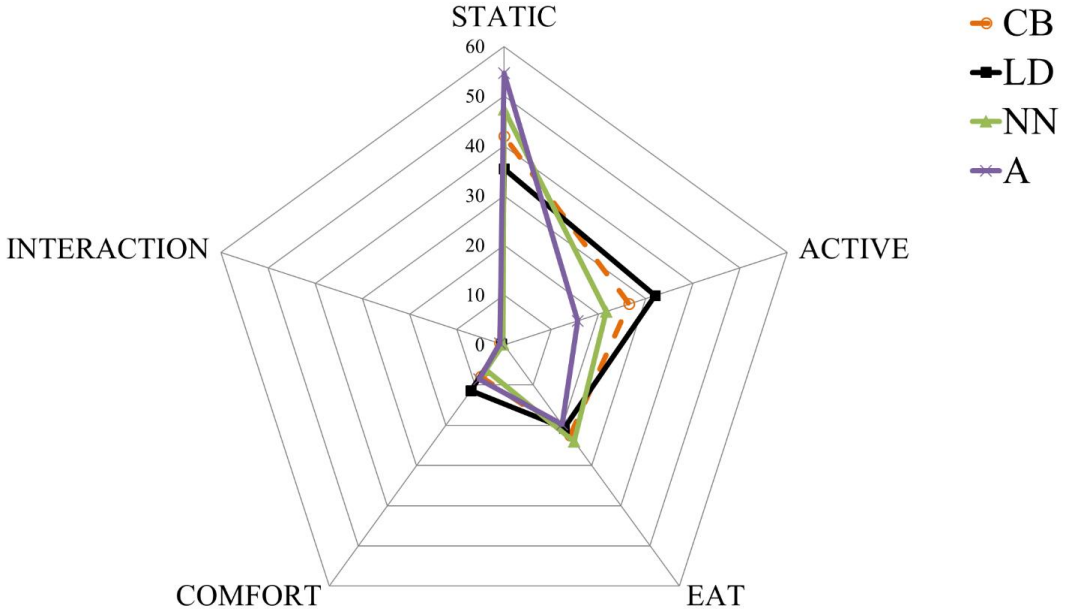
To identify the Golden Standard Genotype descriptive statistics were used by presenting the mean rate of animals per scan engaging each behavior.

To evaluate whether for each behaviour the Golden Standard Genotype differed from the others genotypes studied the odds ratio (OR) with 95% CI was used.

A.D. 1308
unipg
DIPARTIMENTO
DI SCIENZE AGRARIE,
ALIMENTARI E AMBIENTALI

RESULTS

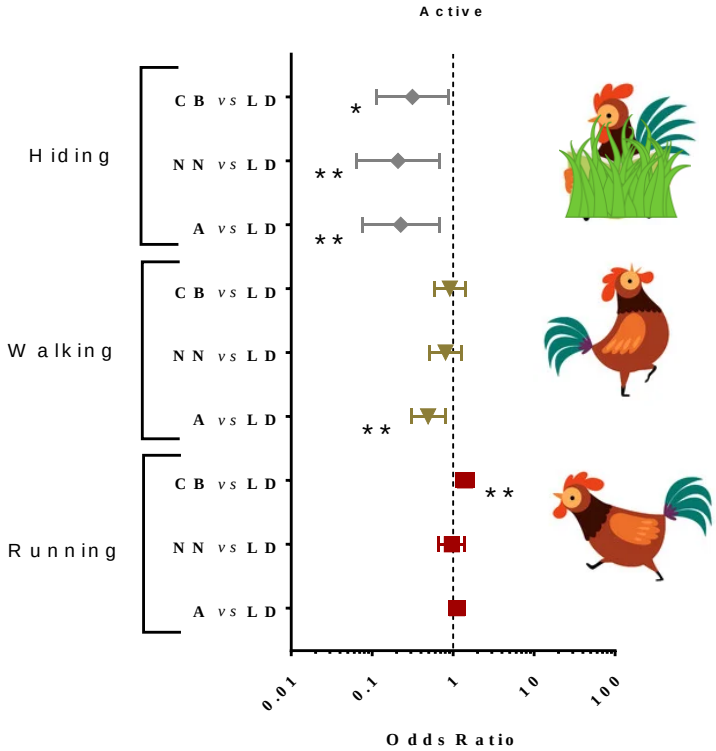
WPC
WORLD'S POULTRY
CONGRESS

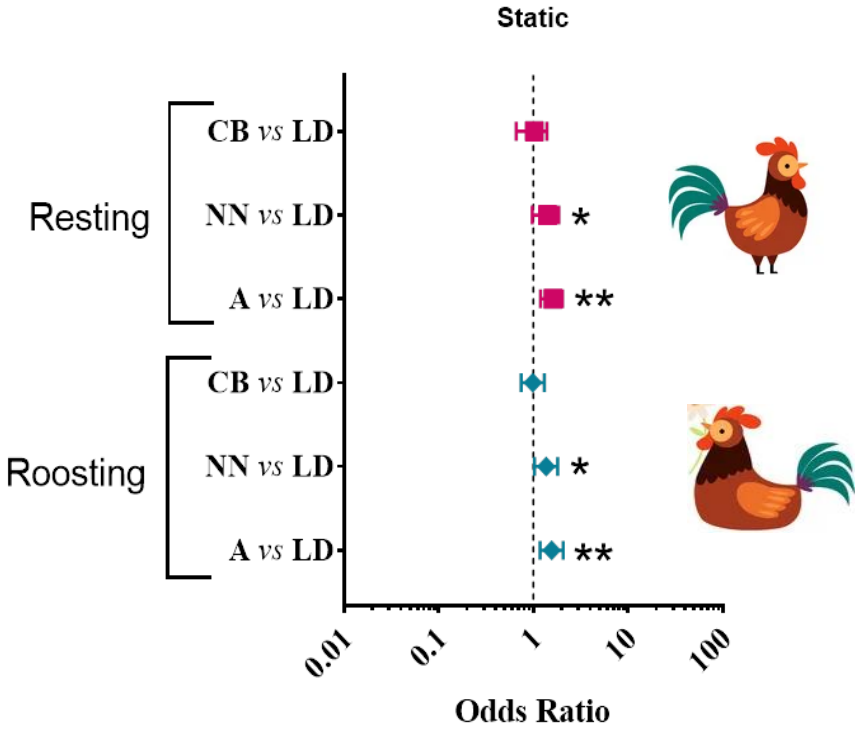


A.D. 1308 unipg
DIPARTIMENTO DI SCIENZE AGRARIE, ALIMENTARI E AMBIENTALI

RESULTS

WPC WORLD'S POULTRY CONGRESS

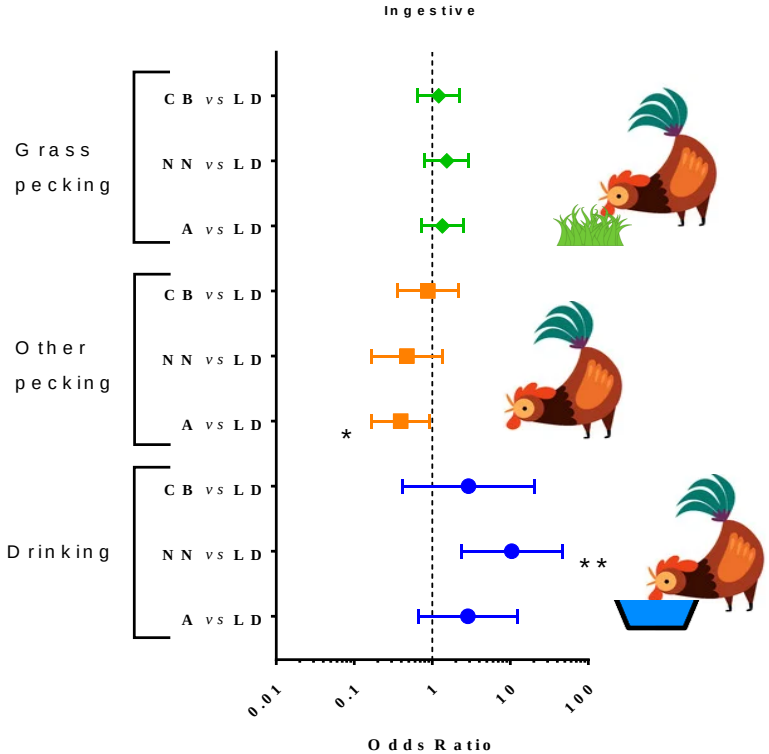




A.D. 1308 unipg
DIPARTIMENTO DI SCIENZE AGRARIE, ALIMENTARI E AMBIENTALI

RESULTS

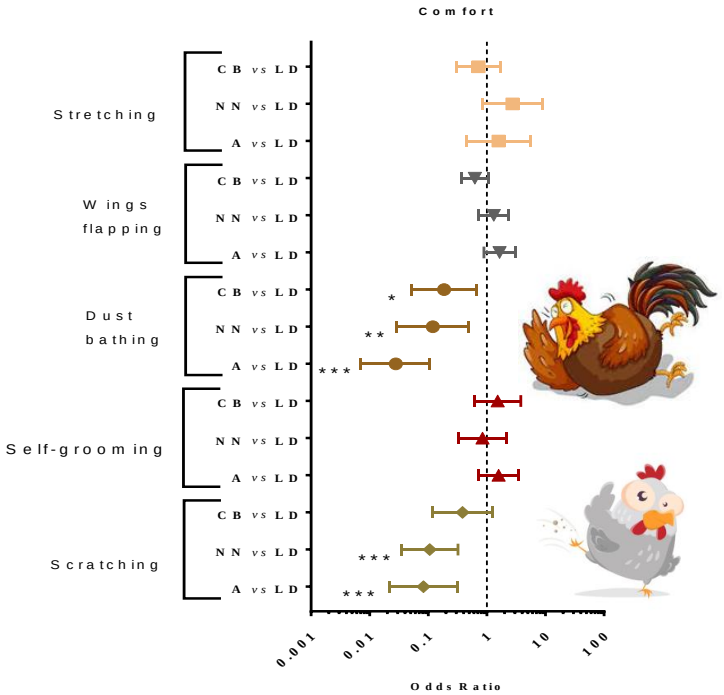
WPC WORLD'S POULTRY CONGRESS



A.D. 1308
unipg
DIPARTIMENTO
DI SCIENZE AGRARIE,
ALIMENTARI E AMBIENTALI

RESULTS

WPC
WORLD'S POULTRY
CONGRESS



RESULTS

Behaviours (%)	LD	CB	NN	A
Hiding	**7.77**	**-**	**- -**	**- -**
Walking	**21.86**	**=**	**=**	**=**
Running	**1.85**	**+ +**	**=**	**=**
Resting	**10.08**	**=**	**+**	**+ +**
Roosting	**25.03**	**=**	**+**	**+ +**
Grass packing	**11.25**	**=**	**=**	**=**
Other packing	**9.15**	**=**	**=**	**-**
Drinking	**0.19**	**=**	**+ +**	**=**
Stretching	**0.31**	**=**	**=**	**=**
Wing flapping	**1.06**	**=**	**=**	**=**
Dust bathing	**4.48**	**-**	**- -**	**- - -**
Self-grooming	**3.43**	**=**	**=**	**=**
Scratching	**0.31**	**=**	**- - -**	**- - -**
DWG (g/d)	**21**	**21**	**24**	**37**

CONCLUSION

LD chickens genotype, by showing the highest frequency of both active and comfort behaviors among the genotypes studied, was identified as a golden standard. However, its higher activity is manly due to the hiding behavior.

Nevertheless the LD genotype could be considered suitable to be raised in a free range system for a behavioral point of view but it is less interesting with regard to the productive performance.

CB genotype is very similar to LD since its high activity is due to the running behavior however also this genotype showed pore productive performance.

A genotype showed the best Daily Weight Gain but also a highest frequency of static behaviors.

NN genotype resulted interesting both in a behavioral and in a performance point of view.

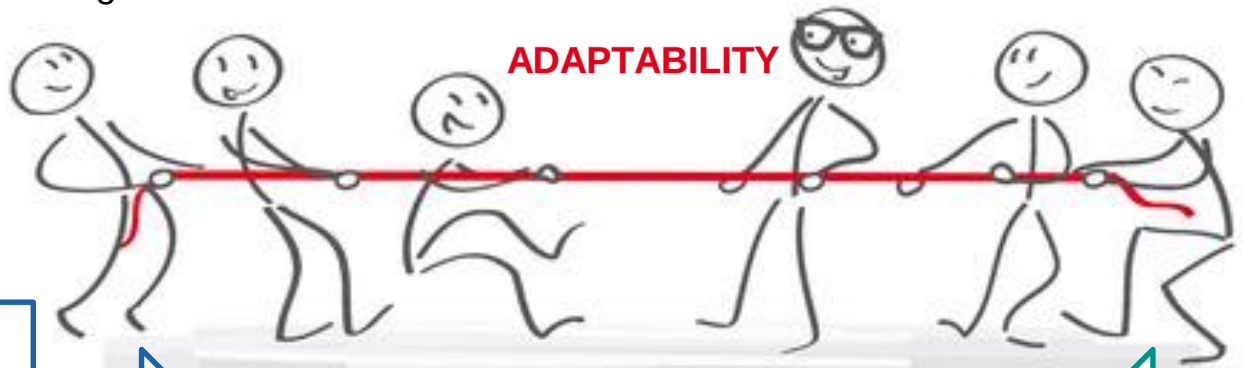
CONCLUSION

others active behaviours i.e. Hiding

Walking

Grass peaking

20 g/d < DWG < 50 g/d



MANAGMENT

BEHAVIOUR

PRODUCTIVITY

FEED STRATEGY

A

NN

CELEBRATING THE CENTENNIAL ANNIVERSARY

1921 100 2021

OF THE FIRST WORLD'S POULTRY CONGRESS

WPC

WORLD'S POULTRY CONGRESS

07-11 AUGUST 2022

PARIS, FRANCE | PALAIS DES CONGRÈS