



DEPARTMENT
OF AGRICULTURAL, FOOD
AND ENVIRONMENTAL SCIENCES

Application of Quality Of Life approach to evaluate the behavior of four slow growing chicken genotypes reared in free range

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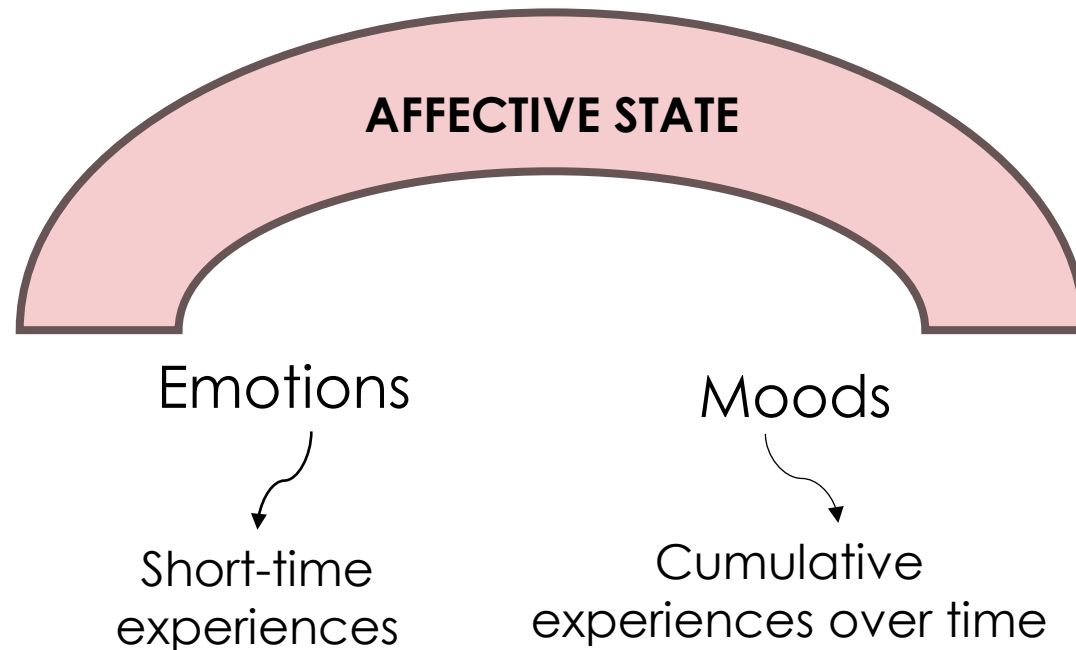
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INTRODUCTION

“Quality Of Life” (QOL) is a broad concept by which the impact of the events that occur during the animals’ life is evaluated by animal affective states



«THE FIVE FREEDOMS»

Freedom from hunger and thirst

Freedom from discomfort

Freedom from pain, injury and disease

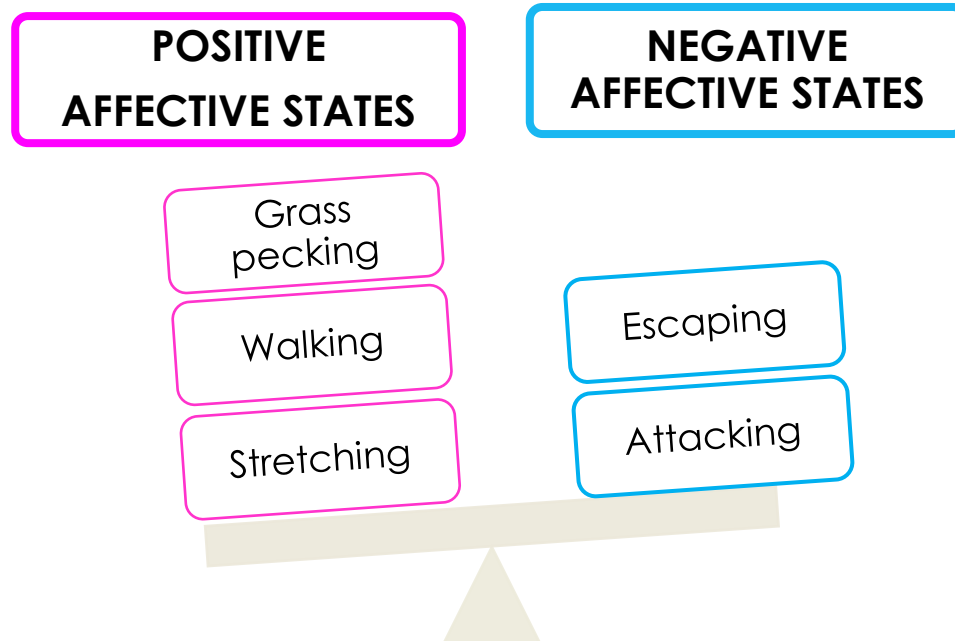
Freedom to express normal behavior

Freedom from fear and distress

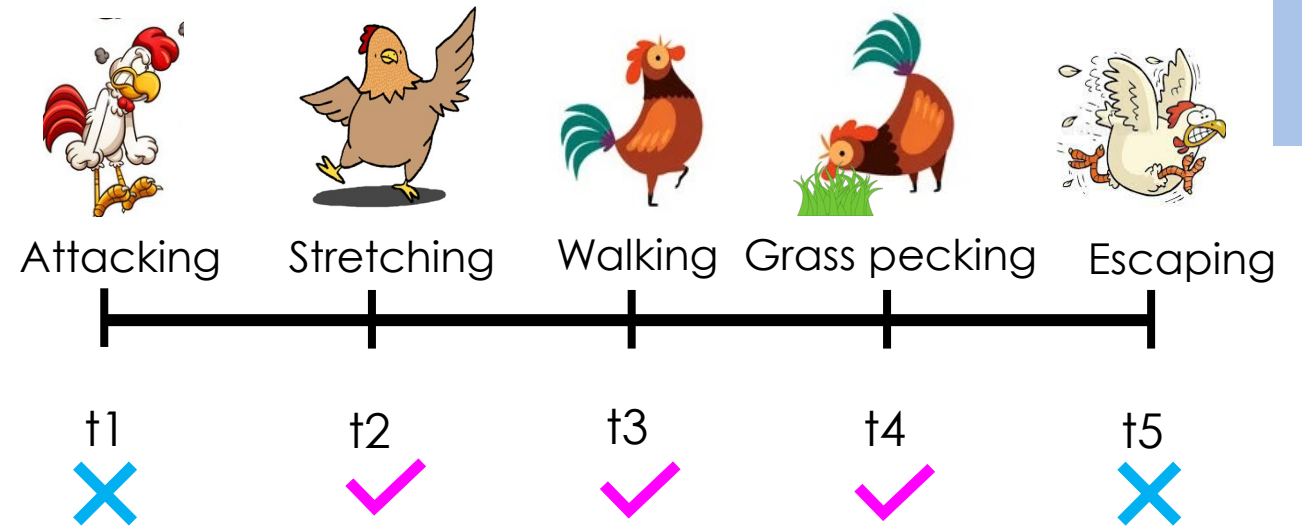
INTRODUCTION

QOL → is a balance of all experiences within a specific period

“Welfare over time”

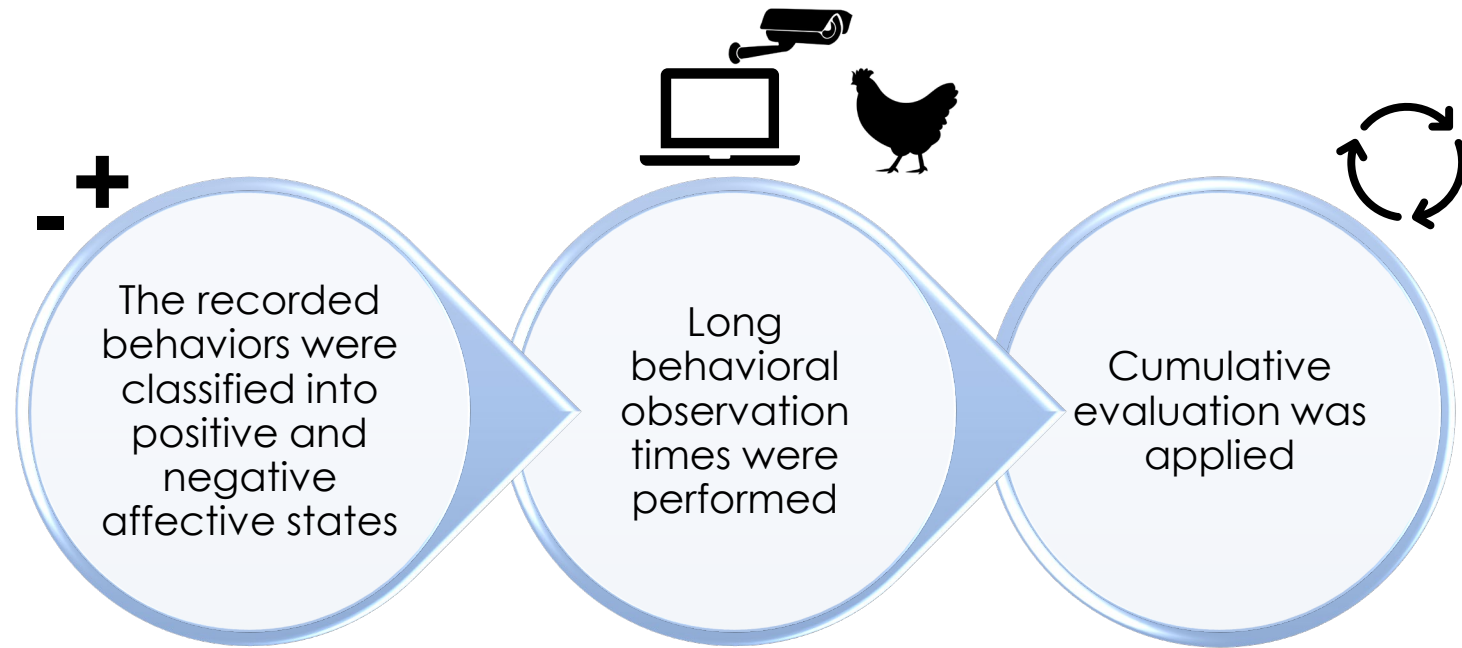


CLASSIC WELFARE ASSESSMENT → a point-by-point evaluation attributing a good or bad welfare status in each observation time is given

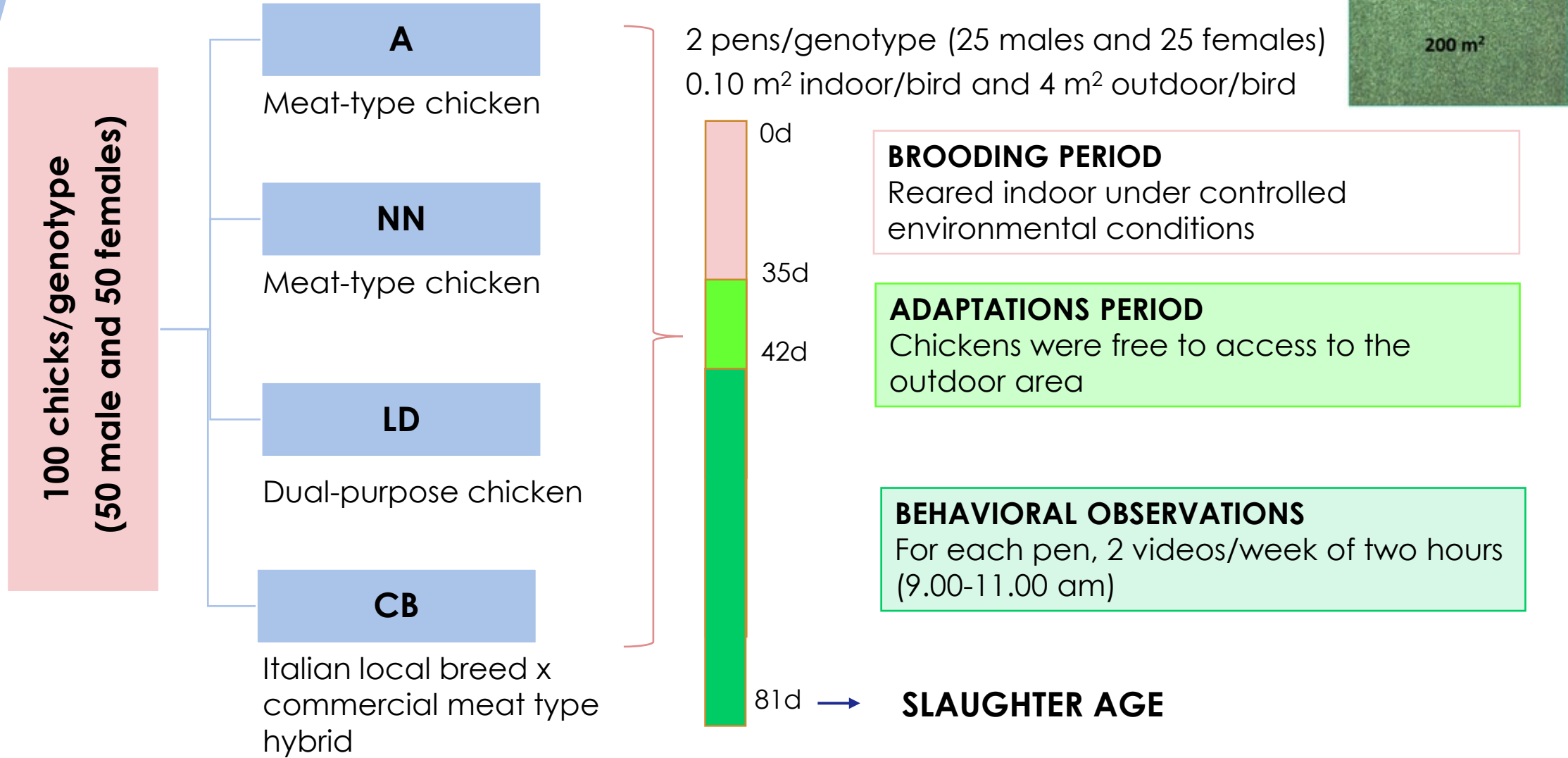


AIM

The aim of this study was to compare the behaviors of four different Slow-Growing chicken genotypes reared in free-range conditions by applying the QOL approach



MATERIAL AND METHODS



MATERIAL AND METHODS

- All the videos were analyzed by two experienced observers using 10-minute scan sampling intervals and 10 seconds were observed at each scan
- Data were expressed as the percentage of animals expressing the behavior out of the total number of visible animals at each scan



CHICKEN ETHOGRAM

ACTIVE



Walking



Running



Sheltering

INGESTIVE



Grass pecking



Feeding



Drinking



Other pecking

INTERACTION



Allo-grooming



Attacking



Escaping

STATIC



Resting

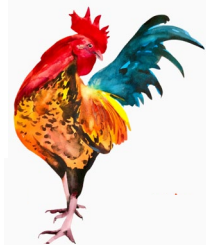


Roosting



Sleeping

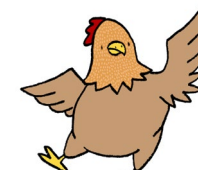
COMFORT



Self-grooming



Flapping wings



Stretching



Dust bathing



Scratching

MATERIAL AND METHODS

The average percentage of animals engaging in each behavior

Descriptive statistics

Behaviors classification in positive or in negative affective states

Available literature

Binning technique

Association between genotype and frequency categories

Chi-square or Fisher's exact

Z-tests

Percentage of Positive Affective states (PPA) Index =

$$\frac{\text{Positive affects}}{\text{Positive affects} + \text{Negative affects}}$$

Low-, Medium- or High-occurrence

Scale of intensity/duration

Identify the anomalous repetition (i.e. stereotypies)

RESULTS

Figure 1. Classification of behaviors into positive and negative affective states

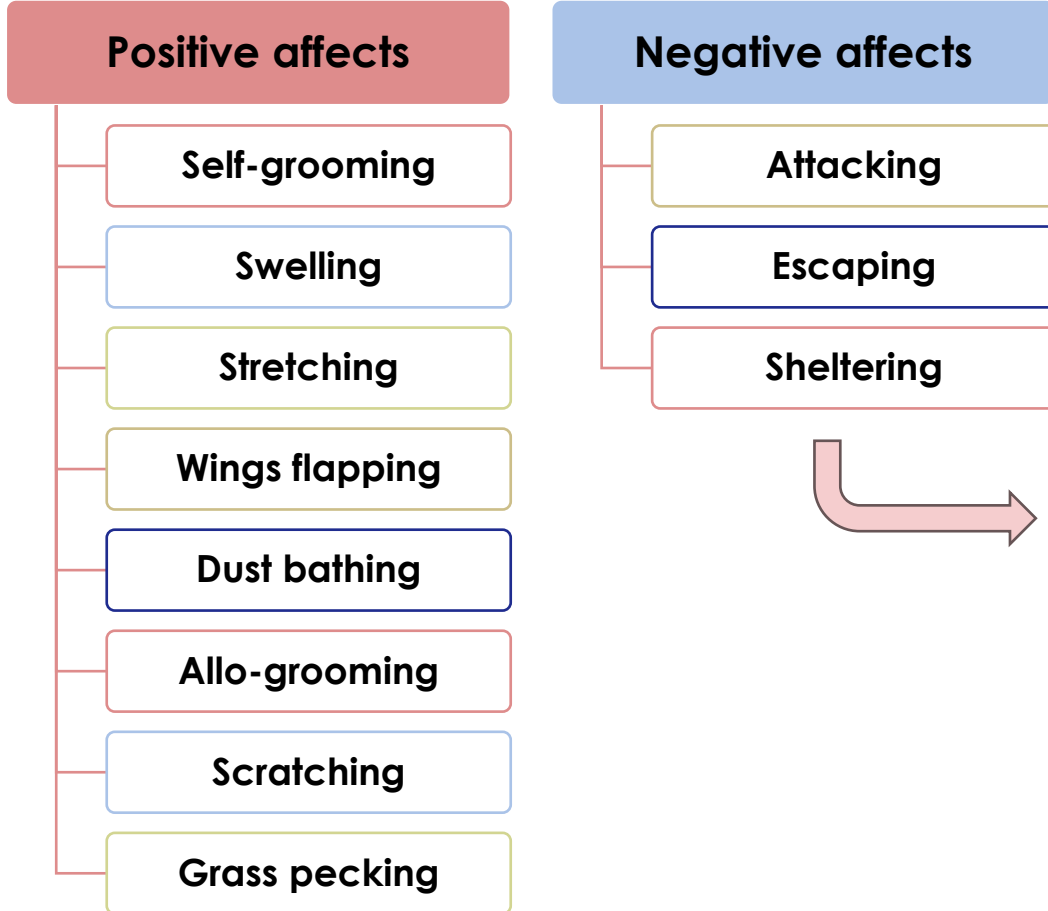
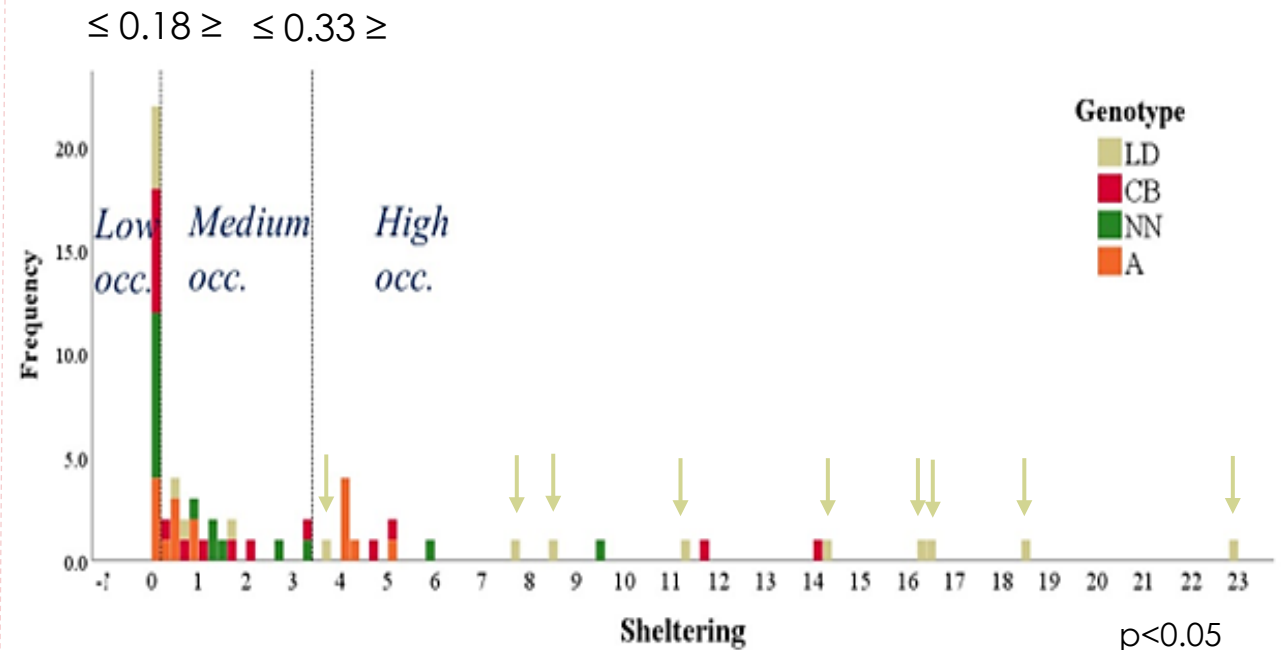
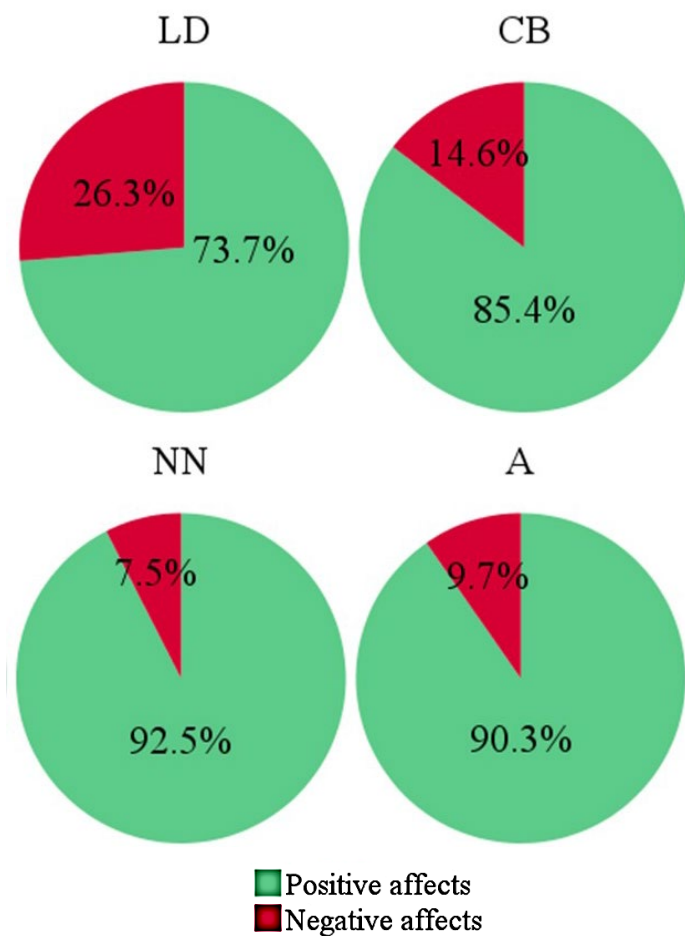


Figure 2. Histograms showing the distribution of occurrences for sheltering behavior



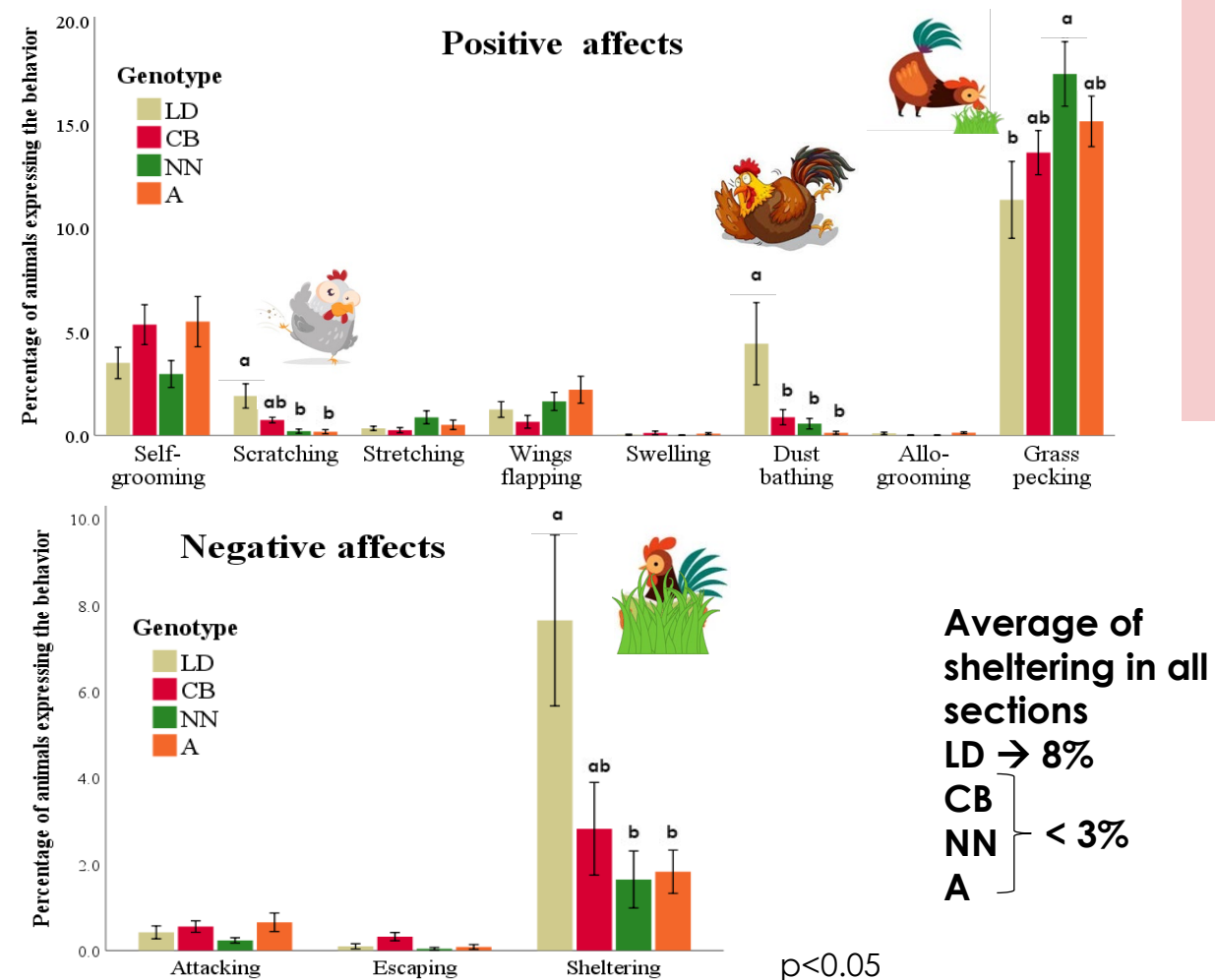
RESULTS

Figure 3. Pie charts showing percentage of positive and negative affects engaged by the genotypes studied



$p < 0.05$

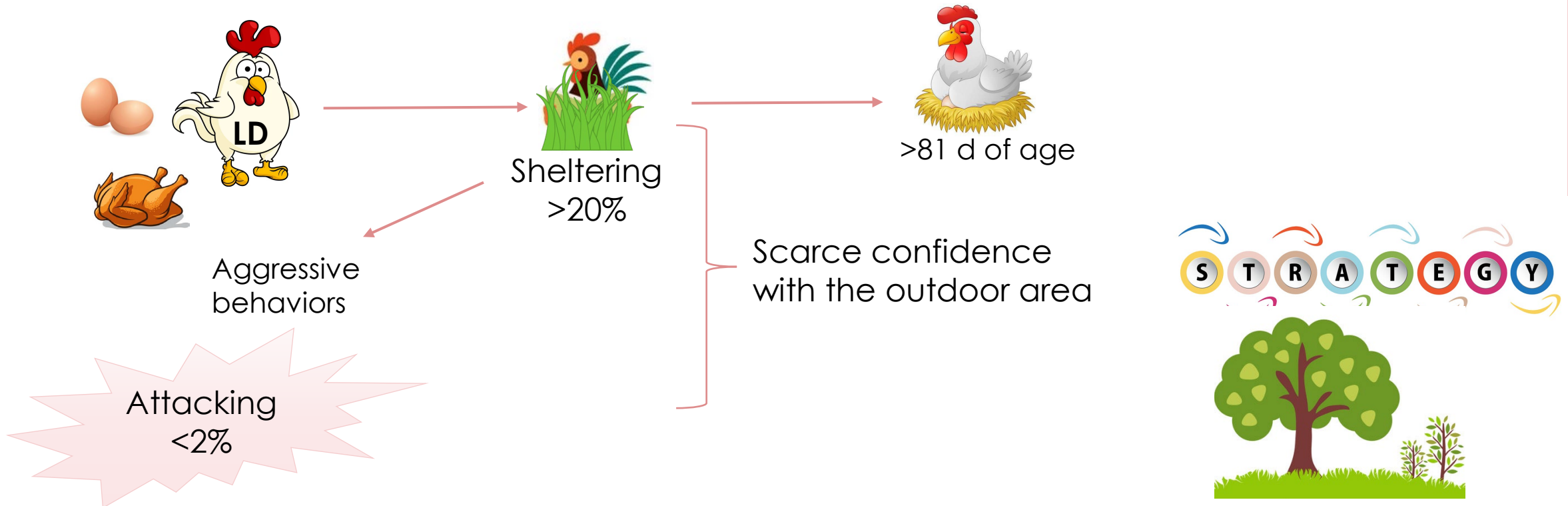
Figure 4. Percentage of animals expressing the different behaviors classified in Positive and Negative affects



$p < 0.05$

CONCLUSIONS

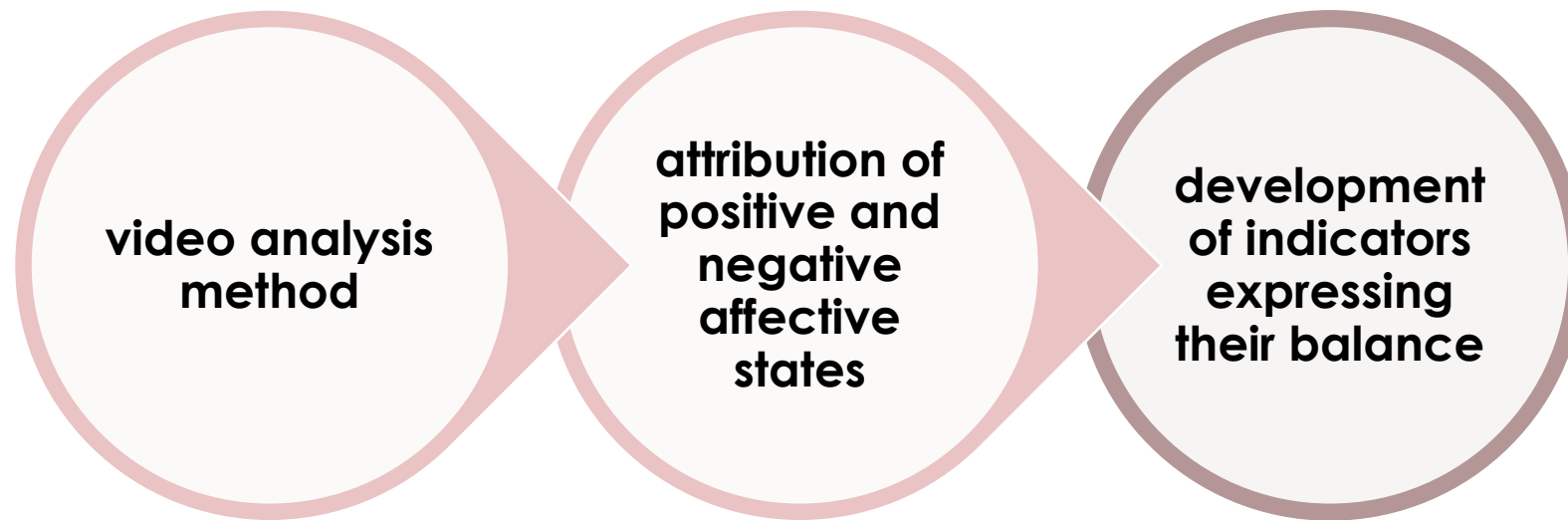
- 1) The **highest frequency of dust bathing and scratching** in LD genotype **had offset** its highest **frequency of sheltering behavior**



CONCLUSIONS

2) **NN genotype** showed a clear **predominance of positive affects**, confirming its adaptability to the free range

3) **QOL is a promising tool** to evaluate the characteristics of the genotype and its interaction with the environment, even though **it needs some improvements**



4) The repertoire could be influenced by the **productive purpose** (dual-purpose or meat-type), making **the classification of individual behaviors** into positive or negative affects **difficult**

Thank you



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