Sensorial evaluation of breast of chicken reared in organic system and supplemented with live black soldier fly larvae

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INTRODUCTION

Live larvae fed to poultry have shown to provide good nutrients and bioactive compounds, with positive effects on bird's health without compromising meat quality.

EXPERIMENTAL DESIGN

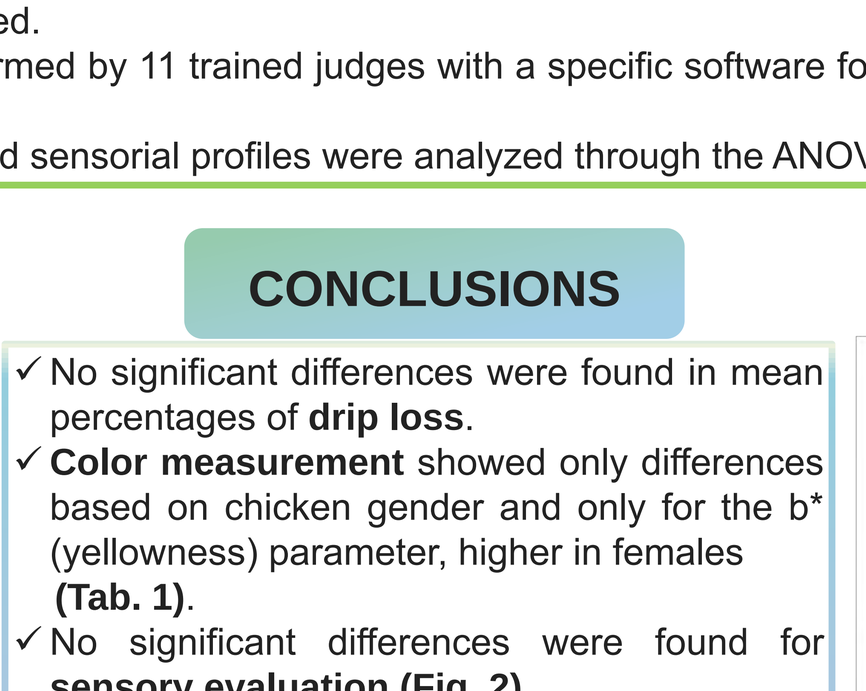

Fig. 1 Graphical representation of the experimental design.

OBJECTIVES

The aim of the study was to investigate the effect of live larvae administration on poultry meat qualitative and sensorial properties.

MATERIAL AND METHODS

- **240 Label naked neck (LNN)** birds were reared from 21 to 82 days of age, in 4 experimental groups; 10 birds/pen; (6 replicates; 60 birds/treatment).
- Experimental groups (**LM** and **LF**) were fed **10%** supplementation of black soldier fly **(BSF) live larvae** based on the DFI* **(Fig. 1)**.
- **48 Birds** (12/diet, 2 birds/pen) were then slaughtered and stored at 4°C for 24 h.
- Breast fillets were excised and cooked in a water bath at 75°C for 45 min. :
  - **Breast color** and **Drip loss** were measured.
  - **Sensory descriptive analysis** was performed by 11 trained judges with a specific software for sensory data acquisition, (FIZZ Biosystèmes), using a nine points intensity scale.
- Color measurement, drip loss percentage and sensorial profiles were analyzed through the ANOVA and post hoc test (Tukey's HSD) ($p < 0.05$).

CONCLUSIONS

Breast Type	L (lightness)	a* (redness)	b* (yellowness)
CF	83.2	1.1	17.1 a
	78.7	2.8	19.2 a
	72.8	3.5	18.0 a
CM	81.6	2.4	15.4 b
	82.1	1.7	16.4 b
	80.6	2.4	14.9 b
LF	81.7	1.2	17.4 a
	79.4	2.3	15.4 a
	81.2	1.5	16.8 a
LM	81.2	2.1	15.8 b
	82.3	2.1	14.0 b
	80.5	2.9	14.8 b

Tab. 1. Mean values (n = 3) of color measurements. Values followed by the same letters in the same column do not differ according to test post hoc (Tukey's HSD) (*** $p < 0.001$).

- ✓ No significant differences were found in mean percentages of **drip loss**.
- ✓ **Color measurement** showed only differences based on chicken gender and only for the b* (yellowness) parameter, higher in females **(Tab. 1)**.
- ✓ No significant differences were found for **sensory evaluation (Fig. 2)**.

In conclusion a dietary **10%** supplementation of **BSF live larvae did not affect sensorial quality** of breast fillets of LNN chickens reared in an organic production system.

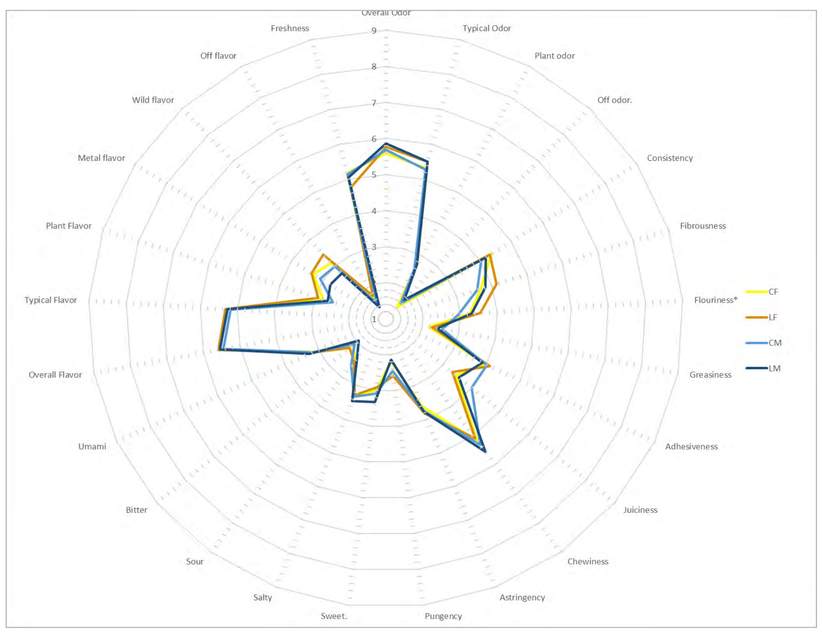

Fig. 2 Sensory profiles of breasts (test performed in duplicate by 11 trained judges using a 9-point scale).

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