



CRANBERRY LEAVES AS FEED ADDITIVE IN POULTRY NUTRITION: EFFECTS ON PERFORMANCE AND OXIDATIVE STABILITY

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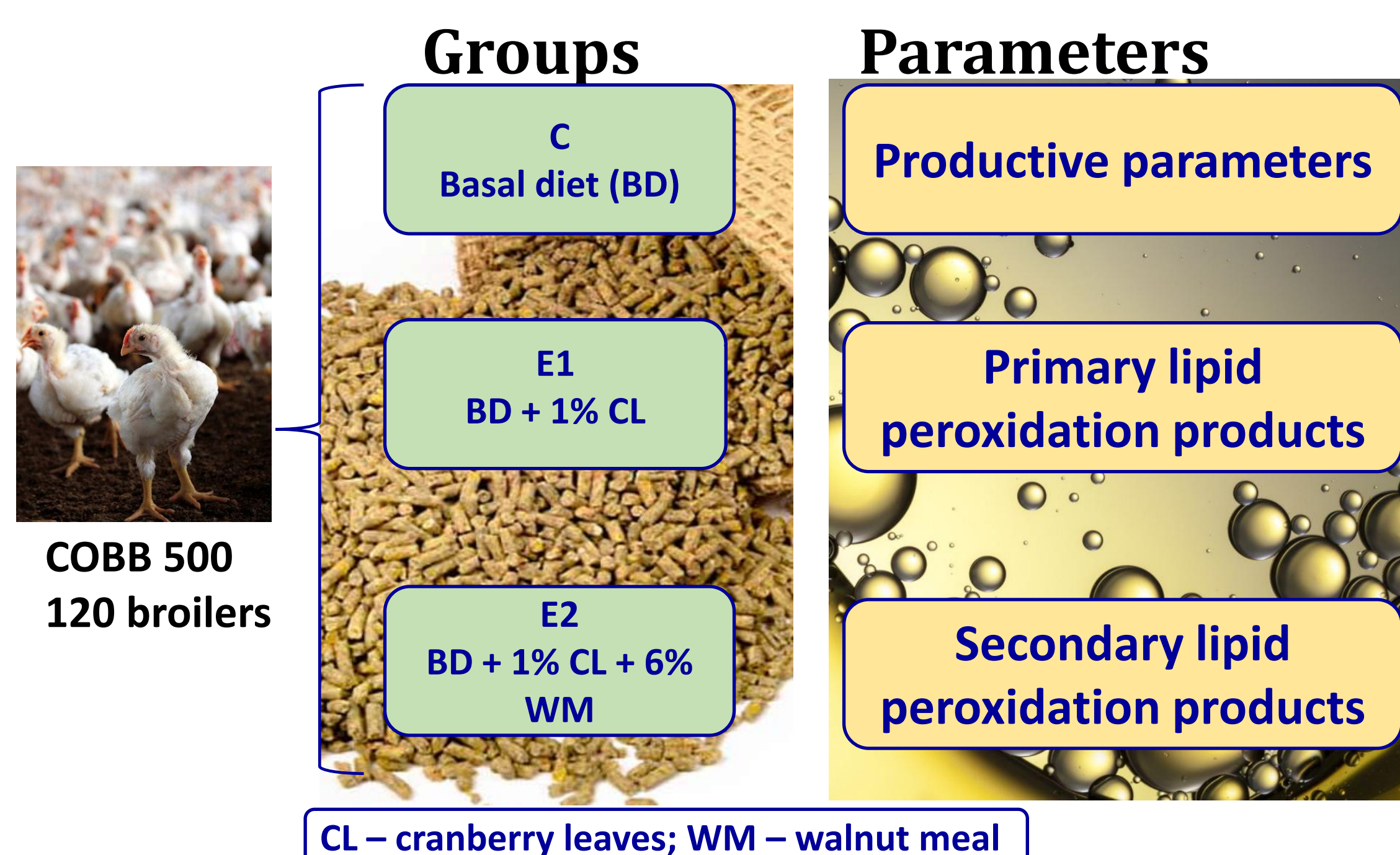
Abstract: The aim of the current study is to assess the effects of inclusion of cranberry leaves in an omega 3 enriched diet of broilers on productive parameters and also evaluate the markers of antioxidant defense system. The antioxidant compounds from cranberry leaves structure positively affected the MDA concentrations determined in serum and liver samples (C – 0.153 ppm; E1 – 0.133 ppm for serum samples and C – 0.359 ppm; E1 – 0.319 ppm for liver samples). By inclusion in an omega enriched diet, no significant differences were detected compared to C for serum (E2 – 0.155 ppm) and almost 10% decreasing values were recorded for MDA values determined in liver samples (0.324 ppm).

• Introduction

Currently, more and more attention is paid to the effects that diet has on human health. Among the quality attributes pursued by nutritionists is the enrichment of meat in antioxidant compounds with the role in delaying the occurrence of oxidative processes. Cranberry by products was used in animal nutrition studies for evaluating their effects on biochemical parameters (2) or meat quality (3) or lipid metabolism (4). Another low economic vegetal source of antioxidants can be considered walnut (*Juglans Regia*) meal which is the resulting product from pressing and oil extraction.

The aim of the current study was to assess the effects of inclusion of cranberry leaves and walnut meal in broiler's diets, on productive parameters and the markers of antioxidant defense system.

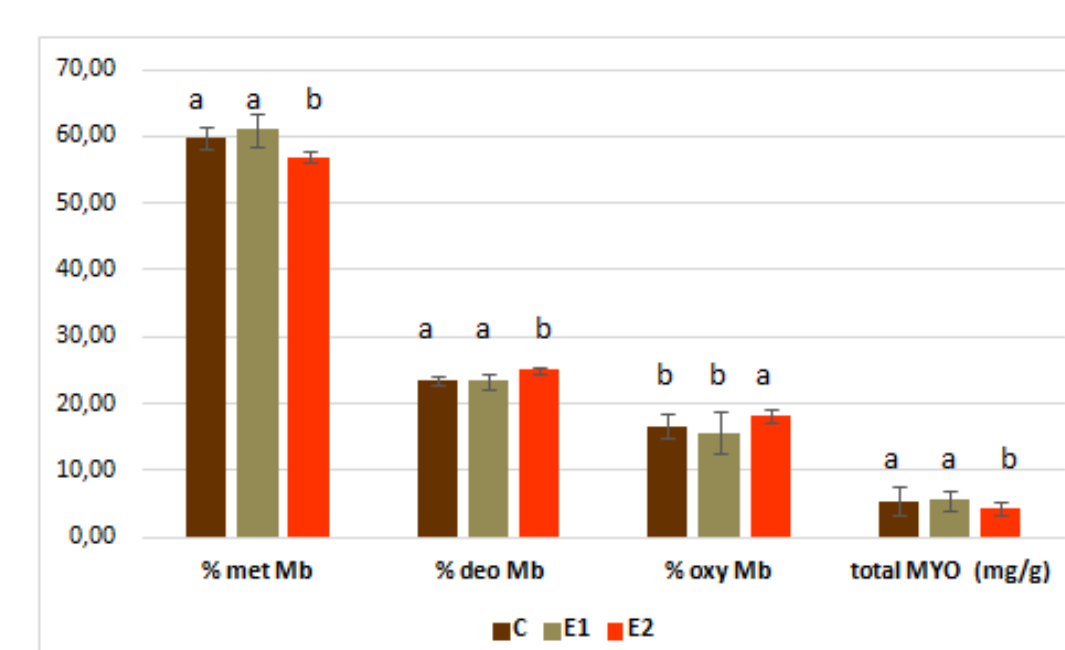
• Material and method



• Results and discussions

Table 1. Productive parameters

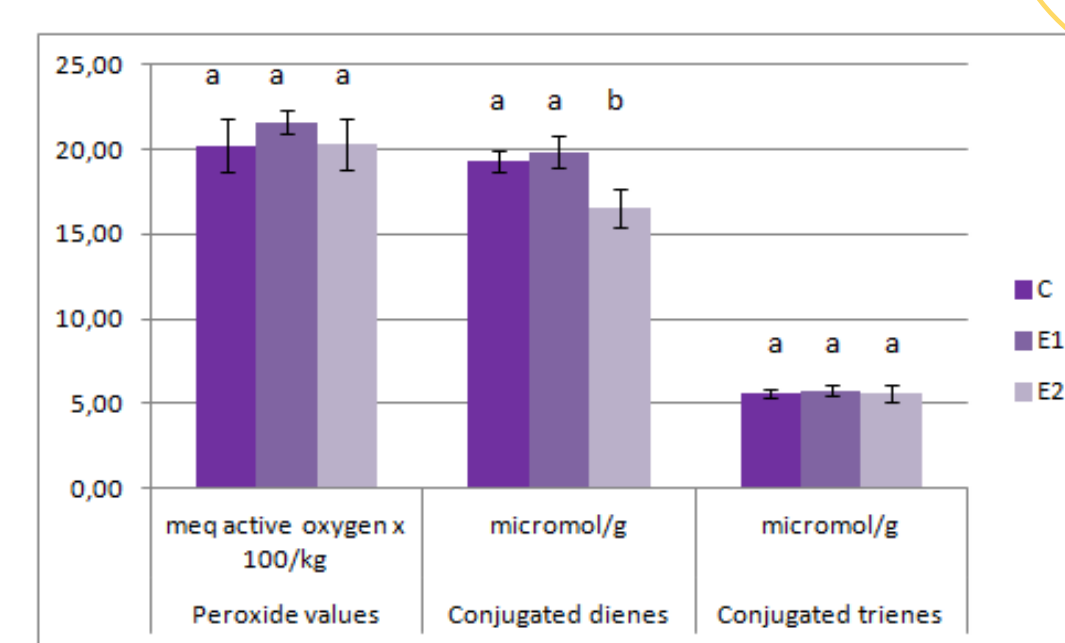
Parameter	Control	E1	E2	SEM	P value
BWi (g)	1078	1064	1039	19.29	0.8217
BWf (g)	3033 ^a	2998 ^a	2885 ^b	48.32	<0.001
Gain (g)	1955 ^a	1934 ^a	1846 ^b	37.56	0.0065
ADG (g)	96.48 ^a	96.81 ^a	92.12 ^b	2.57	0.0374
ADFI (g/broiler/day)	175.0	169.8	170.7	4.32	0.0869
FCR	1.81	1.75	1.85	-	-



Dietary supplements simultaneously administrated (E2 group) significantly decreased the performance parameters compared with control group.

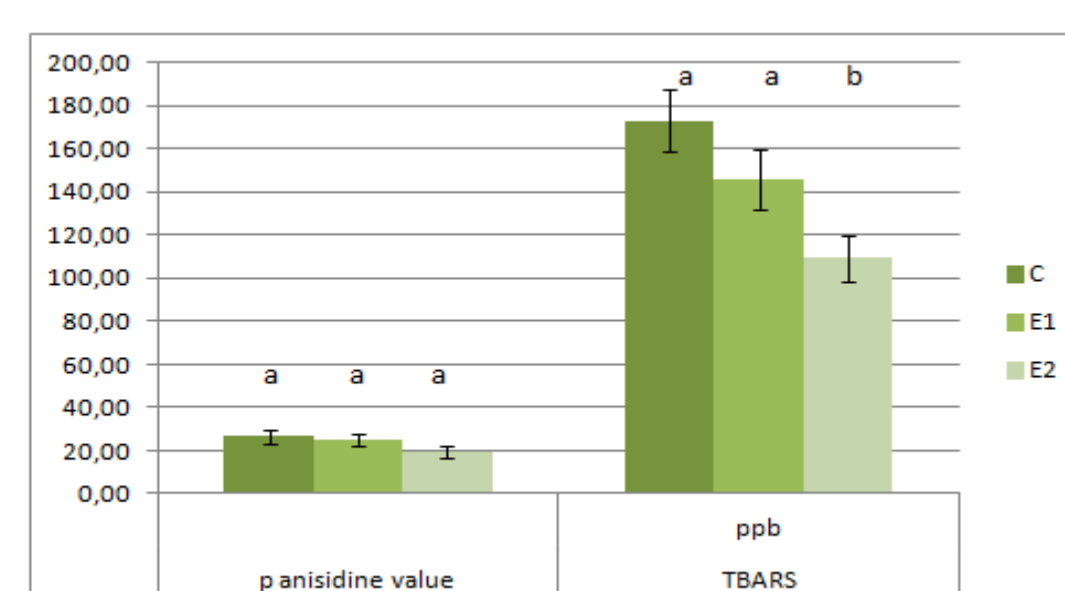


Breast meat peroxidation



The maintaining the freshness of meat can be controlled by preventing the production of metmyoglobin using antioxidants. The combination between cranberry leaves and walnut meal produce a combined antioxidant effect which led to significant decrease of metmyoglobin fraction while oxymyoglobin increased accordingly.

Figure 3. Secondary lipid peroxidation products



Primary peroxidation products the combination of CL and WM decreased the conjugated dienes formation in the first phase of peroxidation. The same effect was noticed for the secondary products, with significant effects in delaying the malonaldehyde formation.

• Conclusions

The results presented in the current study showed that the presence of cranberry leaves in broilers diets doesn't affect the performance parameters or the oxidation process occurrence. On the other hand, the combination of cranberry leaves and walnut meal affect the final body weight and the gain of broilers but at the same time the meat quality is significantly improved by delaying the oxidation process (both primary and secondary products).

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