Effects of *Artemisia herba alba* and Olive Leaf (*Olea europaea*) powder on growth performance, blood biochemical parameters and carcass yields of broilers

Nassim Moula[1], Asma Ait-Kaki[2], Mamadou Tandiang Diaw[3], Pascal Leroy[1] & Johann Detilleux[1]

[1]Fundamental and Applied Research for Animals & Health (FARAH), Sustainable Animal Production, ULg, Belgium

[2]Faculty of Science, Mhamed Bougara University of Boumerdes, Algeria

[3]Department of Animal Production, University of Thiès, Senegal

Corresponding author: Nassim.Moula@uliege.be

Aims

Like the Mediterranean countries, Algeria has a multitude of plants that can be used in poultry farming. The objective of this study was to evaluate the effects of adding *Artemisia herba alba* (white wormwood) and Olive Leaf (*Olea europaea*) in chicken diets, on their growth performances, blood biochemical parameters and carcass yield.

MATERIALS AND METHODS

- The study was conducted from April to May 2017 in the area of Chemini (Algeria).
- 60 one-day-old male broilers (industrial strain) were divided into 3 groups and 2 repetitions with 10 chickens each.
- Group 1 (Control): Standard commercial diet based on corn and soybean purchased on the local market.
- Group 2: *Artemisia herba alba* (Control diet with addition of 2% of Artemisia herba alba).
- Group 3: *Olea europaea* (Control diet with addition of 2% of *Olea europaea* leaves).

Results

Table 1. Evolution of the live weight (LW) and average daily gain (ADG) of chickens receiving the three diets.

Age	Diets				P-Value			R²
	Control	Artemisia	Olive leaves	Repetition	Age	diet	Age*diet	
LW (g)								
J0	39.76±25,70	38,82±25,70	39,96±25,70					
J14	273.71±26,38	339.67±27.09	347.15±26.38	ns	***	***	**	0.98
J28	950.95±26.38[a]	1019.13±26.38[b]	1095.47±27.11[b]					
J42	2117.42±26,38[a]	2230.10±27.09[b]	2336.66±27.88[c]					
DAG (g/j)				-	-	-	-	-
J0-J14	16.71	21.49	21.94	-	-	-	-	-
J14-J28	48.37	48.53	53.45	-	-	-	-	-
J28-J42	83.32	86.48	88.68	-	-	-	-	-
J0-J42	49.47	52.17	54.68	-	-	-	-	-
Carcass								
Yield (%)	70.52±0.62	71.84±0.59	70.21±0.49	ns	-	ns	ns	0.24

Table 2. Average values of some biochemical blood parameters.

Parameters' (g/l)	Diet-group			P-value		R²
	Control	Artemisia	Olive leaves	Repetition	Diet-group	
Glucose	2.24± 0.06[a]	2.05 ± 0.06[a]	1.90 ± 0.06[b]	*	**	0.50
Cholesterol	1.13± 0.05[a]	1.03 ± 0.05[ab]	0.95 ± 0.05[b]	ns	ns	0.18
Triglycerides	0.73±0.04	0.69±0.04	0.68±0.04	ns	ns	0.04
Urea	0.032±0.002	0.033±0.002	0,036±0,002	ns	ns	0.14
Total proteins	26.66±0.77	27.11±0.77	26,02±0.77	ns	ns	0.05

On a same row, means bearing a same letter are not significantly different ($p < 0.05$); ***: $P < 0.001$; ** $P < 0.01$; $P \geq 0.05$.
R2: coefficient of determination.

Conclusion

The results obtained in this study showed that the incorporation of olive leaves and artemisia powders into the broiler diet improves significantly body weight at slaughter (J42) but doesn't affect significantly blood biochemical parameters. These results can contribute to reduce the use of conventional poultry feed ingredients, mainly corn and soybean, which consequently reduce the importation and production costs of broilers in Algeria.