Phytosynthese
GROUPE LEHNING

INTERNATIONAL POULTRY SCIENTIFIC FORUM
ATLANTA (US), 2018

bonArea

50 1968-2018 itpsa

Efficacy of plant extracts (CleanActiv and AEN) on the performance of broiler chickens reared in experimental conditions compared to conventional ionophor program

THIBAUT CHABRILLAT[1], ISABELLE DEUVE RIOU[1], MARÇAL VERDÙ[2], GEORGINA FARRÉ[2], FRANCESC COTS[3], SYLVAIN KERROS[1].
[1]PHYTOSYNTHESE, 63200 MOZAC, FRANCE - [2]BON AREA AGRUPA, GUISSONA, SPAIN - [3]INDUSTRIAL TECHNICA PECUARIA S. A, BARCELONA, SPAIN

Due to the growing pressure of governments and consumers to reduce the use of antibiotics and coccidiostats in animal feed, new alternatives to prevent coccidiosis are now available beyond the use of vaccines. Plant extracts are commmonly known in Europe to reduce incidence of coccidiosis [1]. This trial was implemented to compare a plant extract digestive program (CleanActiv and AEN) with a conventional coccidiostat program and an untreated group.

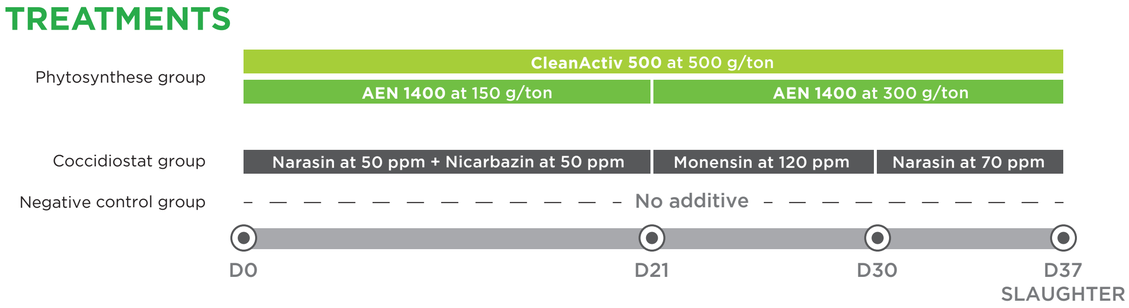
MATERIAL AND METHOD

- 4 920 broilers, mixed males and females Ross, reared in a private experimental farm.
- 24 pens of 205 broilers: 8 repetitions/treatment

Density: 16.4 broilers /m²
Feeds: Starter D0 to D21, Grower D21 to D30, Finisher D30 to D37 (slaughtering)

Control group (C-): no supplementation
Control group (C+): ionophor coccidiostat program
Experimental group (PE): plant extract group with **CleanActiv** and **AEN** products (titrated in terpens, phenols, organosulfurs and phenylpropanoids)

TREATMENTS



- **Recording:** feed intake, live weight and mortality measured at day 7, 21, 28 and 35 for each pen
- One bird by pen necropsied at day 19, 28 and 35 to determine coccidiosis lesion scores

RESULTS

FIGURE 1: LIVE WEIGHTS (G)

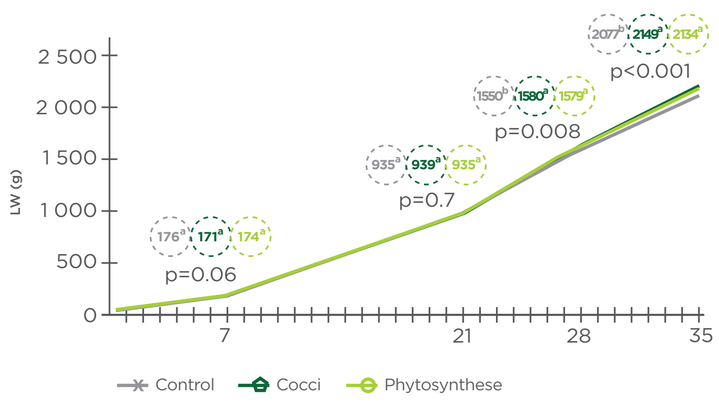


FIGURE 2: DAILY WEIGHT GAIN PER PERIOD (G/D)

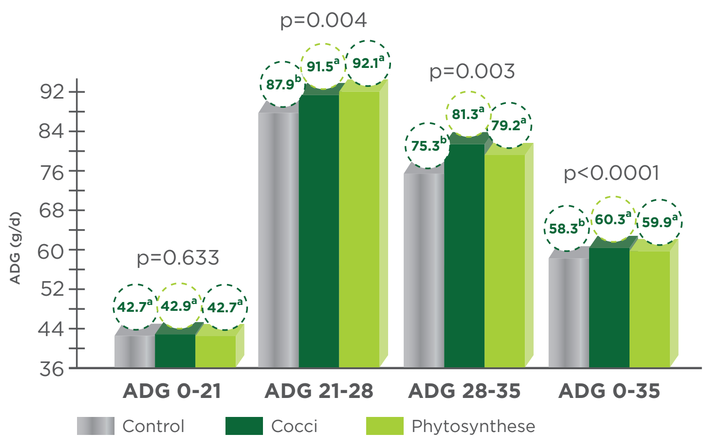


FIGURE 3: FEED CONVERSION RATIO PER PERIOD

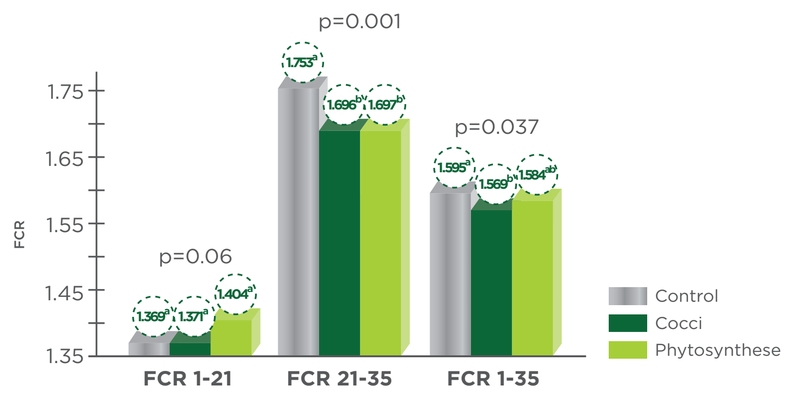
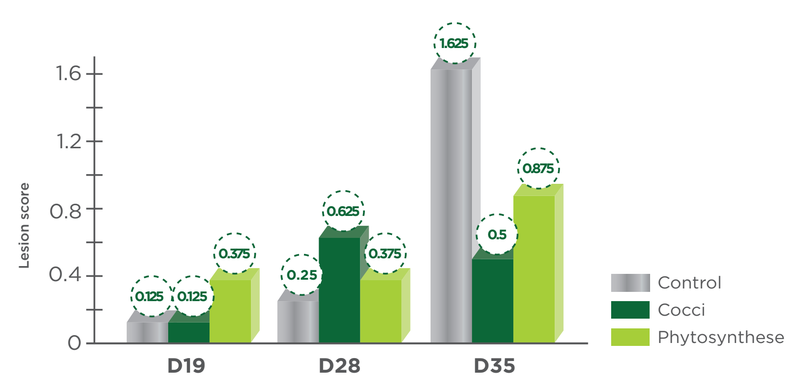


FIGURE 4: LESION SCORE (*E. MAXIMA* + *E. TENELLA*)



DISCUSSION AND CONCLUSION

At D28 and D35 live weights were higher for PE than C- (live weight at 35 days: 2.077 kg vs 2.134 kg; p<0.0001). The average daily gain (ADG) was higher for PE than C- (58.3 g/d vs 59.9 g/d; p<0.0001).
No significant differences were observed for LW, ADG or FCR between PE and C+ at any period. Regarding necropsies, *Eimeria maxima* and *Eimeria tenella* lesions were observed; due to experimental conditions and no artificial challenge, un-significant differences were obtained. Mortality was between 1.6 and 1.9 % with no significant difference.

JUIN *et al.* (2007) **[2]** and FORAT *et al.* (2009) **[3]** obtained similar results. These performances could be explained by a reduction of *Eimeria* invasion in epithelium cells **[4]** and improved immunity **[5]**.

Performances were improved in treated groups from 21 days, when the daily growth and risk of coccidiosis and enteritis became higher.

Plant extract programs are very promising for reducing the use of antibiotics and coccidiostats in the future

REFERENCES

[1] GROOT M. *et al.* (2011), *Natural Poultry Health*, RIKILT-Wageningen UR, 40 pp.

[2] JUIN H NACIRI M., VILA B., CALAFAT F., RECOQUILLAY F., MEDINA B. (2007), *Effets de l'utilisation d'actifs végétaux naturels protégés sur les performances de croissance de poulets Ross infectés ou non par des coccidies*, Septièmes Journées de la Recherche Avicole. Tours 344-347.

[3] FORAT M., CLEMENT F., RECOQUILAY F. (2009), *Effet de l'utilisation de complexe d'extraits végétaux chez le poulet en croissance, vacciné contre la coccidiose et challengé par une inoculation coccidienne à 14 jours*, Huitièmes journées de la Recherche Avicole, Saint Malo 442-445.

[4] BURTA SA, TERSTEEG-ZUDERVELDA M.H.G, JONGERIUS-GORTEMAKEBA B.G.M, L VERVEDEB L., VERNOOIC J.C.M (2013), *In vitro inhibition of Eimeria tenella invasion of epithelial cells by phytochemicals*, Veterinay Parasitology 191,374-378.

[5] MUTHAMILSELVANT T., KUO T.F, WU Y.C, YANG W.C (2016), *IHerbal remedes for coccidiosis control. A review of Plants, compounds, and anticoccidial actions*, Evid Based Complement Alternat Med 2016.2657981.