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SUMMARY

Three hundred of one day old chicks were used to study the effect of clopidol as a drug, *Ambrosia martima* and *Artemisia inculata* as a plant on controlling an prophylaxis of coccidiosis. These chickens were divided into 6 main groups.

Group (I) were administered the clopidol in ration and were divided into 3 subgroups (1, 2 and 3), infected with 10,000 sporulated oocysts to subgroups (1 and 2). Subgroup (3) considered a control subgroup.

Group (II) were administered *Ambrosia martima* in two forms: *Ambrosia martima* dried powder in ration or *Ambrosia martima* extract in water and divided into 4 subgroups (4, 5, 6 and 7) and infected with 10,000 sporulated oocysts to subgroups (4, 5 and 6). Subgroup (7) considered a control subgroup.

Group (III) were administered *Artemisia inculata* in two forms: *Artemisia inculata* dried powder in ration or *Artemisia inculata* extract in water and divided into 4 subgroups (8, 9, 10 and 11) and infected with 10,000 sporulated oocysts to subgroups (8, 9 and 10). Subgroup (11) considered a control subgroup.

Group (IV) were administered the mixture of the two plant in two forms, dried ground powders in ration or extracts in drinking water. They were divided into 4 subgroups (12, 13, 14 and 15) and infected with 10,000 sporulated oocysts to subgroups (12, 13 and 14). Subgroup (15) considered a control subgroup.

Group (V) were infected with 10,000 sporulated oocysts and untreated (control positive).

Group (VI) non infected and non medicated (control negative).

The efficacy of each feed additives was determined by recording the clinical signs, oocysts count, lesion score and pathological findings of the sacrificed chickens at the end of one and two weeks P.I.

In general the clinical signs, pathological lesions and oocysts count were mild in chickens which infected with *Eimeria* spp. at one week old. In general the chickens which treated with clopidol or extract of *A. martima* or extract of *Art. inculata* or the extracts of both plants showed no mortalities and the clinical sign, oocysts count, lesion score and pathological lesions were less severe than that chickens of other groups.

The mortalities were recorded in chickens which treated with the dried powder form *A. martima* or *Art. inculata* or with dried powder of both of them and in the chickens which infected at 3 weeks old and untreated. The mortalities were recorded within 6th day P.I.

The clinical signs were huddling, chilling, severe depression, reduction in feed intake and profuse bloody diarrhea which decreased gradually by the day 11th P.I.

The pathological findings, microscopically, the proventriculus of subgroups (1, 5, 9 and 13) after one week old revealed degenerative changes, focal coagulative necrosis, leucocytic

infiltration of the mucosal surface and focal necrosis of some compound glands. While two weeks P.I., the proventriculus showed atrophy, moderate hyperplasia and edema of some glands. The proventriculus of subgroups (4, 8 and 12) showed the same aforementioned lesions but more severe in addition to cystic dilatation, fibroblast proliferation and leucocytic aggregation among the glands.

The small intestine of chickens of subgroups (1, 5, 9 and 13) after one week P.I. showed massive necrosis, degenerative changes, severe leucocytic infiltration and atrophy of the gland. Two weeks P.I. revealed catarrhal enteritis

The caecum of chickens of subgroups (1, 4, 8 and 12) showed severe hemorrhagic enteritis and the developmental stages of *Eimeria* replaced the mucosal epithelial cells and the intestinal glands. The caecum of chickens of subgroups (5, 9 and 13) showed the same lesions but less severe.

The liver after one week P.I. revealed vacuolar and hydropic degeneration, thrombus formation in the portal vein, focal coagulative necrosis and leucocytic cell aggregation among the hepatocytes and around the portal area. Cholangitis and cystic dilatation of the bile ducts. Two weeks P.I. the lesions were milder.

The pancreas showed at the end of one week P.I. degenerative changes of the pancreatic cells of the acini, perivascular edema and few leucocytic cells. After two weeks P.I., few fibroblast proliferation was notice among the acini.

The lymphoid tissues (spleen and bursa of Fabricius) of all groups showed necrosis, lymphoid depletion and edema. Hyperplasia of the endothelial cells and vacuolations in the blood vessels wall. Two weeks P.I the lesions was milder.

The heart at the end of one week P.I. revealed focal myomalacia, edema, hemorrhages and leucocytic infiltration among the muscles. The wall of the blood vessels were thickened, vacuolated and surrounded by leucocytic cells. The cardiac lesions became milder in the sacrificed chickens after 2 weeks P.I.

The kidney lesions showed focal interstitial hemorrhage, congested blood vessels, degenerative changes, necrosis of the renal tubules. Perivascular, peritubular edema and perivascular leucocytic infiltration. Hypercellularity of some glomeruli and shrinkage of the glomeruli in other cases. Edema of the Bowman's capsule was observed in some cases. Two weeks P.I. the renal lesions were the same but less severe.

The brain after one week showed focal encephalomalacia, neuronal degeneration and Purkinji cell necrosis. The lesions became milder in chickens which sacrificed 2 weeks P.I.

It could be concluded that:

- 1) The chickens at 3 weeks old are highly sensitive to infection with *Eimeria tenella* while at one week old, the chicks are resistant.
- 2) *Eimeria tenella* induce harmful effect not only on the cecum but also on the proventriculus, small intestine, liver, kidney,

- heart, lymphoid organs due to the toxic metabolites which circulating in the blood.
- 3) Clopidol is good coccidiostat (79% treatment efficacy), prevent the mortality and improve the body condition but it has hepatotoxic and nephrotoxic effect.
 - 4) *Ambrosia martima* L. when administered to the chickens in the ration as dried powder form has no prophylactic effect on the coccidia and has harmful effect on the parenchymatous organs.
 - 5) The extract of *Ambrosia martima* when given in the drinking water as prophylactic to the chickens produce good coccidiostatic effect (81.36% treatment efficacy), produce mild degenerative changes on the liver, kidney, lymphoid organs and heart in addition to improving the body condition.
 - 6) *Artemisia inculata* also given in ration as dried powder, not affect the coccidia but has severe degenerative toxic effect on the heart, spleen, liver and kidneys.
 - 7) The extract of *Artemisia inculata* when added to the water as prophylactic lead to decreasing the clinical signs, lesions due to coccidiosis and has mild degenerative effect on the parenchymatous organs (77.8% treatment efficacy),.
 - 8) When adding the mixture of the extract of *Artemisia inculata* and the extract of *Ambrosia martima* on the water lead to the same results when adding one of them only (74.6% treatment efficacy).