RESEARCH FINDINGS ON ND VACCINATION AND DEWORMING

PRESENTED AT THE “ENHANCING CHICKEN PRODUCTIVITY THROUGH PARASITE MANAGEMENT FOR EFFECTIVE NEWCASTLE DISEASE VACCINATION IN KENYA – MBEERE STAKEHOLDERS WORKSHOP ON 4TH DECEMBER 2013”

BY

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Newcastle disease (ND) is the most important poultry disease in the world, causing devastating losses in both commercial and village chickens.

As a viral disease, it can only be effectively controlled through vaccination.
- Parasites stress birds through nutrient consumption, blood sucking and irritation;

- There is a high parasite prevalence levels in chickens of Eastern province (Mbeere) - 90 ÷ 96% (Maina, 2005; Sabuni, 2009)

- Stress has been reported to cause immunosuppression (Njagi et al., 2010).
Why was the study done?

- This study was carried out to check on the extent to which these parasites (ecto- and endo-) may suppress immune response to ND vaccination.

- This was done through monitoring of antibody titers after selective parasite treatments followed by ND vaccination.
MATERIAL AND METHODS

Study area
Agricultural activities practiced
Experimental birds: Seventy two chickens from Mbeere District were used for the study.

Purchase of chicken from farmers

Transport of chicken to Kabete for the experiment
Findings from examination of the birds

Fig 1: *Tape worms*

Fig 2: *Round worm*

Fig 3: *Lice*

Fig 4: *Coccidia*
Table 1: Experimental chicken groups, showing parasite and coccidia treatments and Newcastle Disease vaccination

<table>
<thead>
<tr>
<th>Group of chicken</th>
<th>Number of chicken in a group</th>
<th>Endoparasites treatment</th>
<th>Ectoparasites treatment</th>
<th>Newcastle Disease vaccination</th>
<th>Coccidia treatment</th>
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<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Tolrazuril (Intracox)</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>Albendazole</td>
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<td>Tolrazuril (Intracox)</td>
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<tr>
<td>3</td>
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<td>Sevin+permethrin</td>
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<td>Tolrazuril (Intracox)</td>
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</table>
Fig 1: Experimental chickens in cages, University of Nairobi.

Fig 2: AVIVAX-F Vaccine

Fig 3: Drugs used for treatment

Fig 4: Investigator performing hemagglutination inhibition test
Examination and identification of the parasites

- Endo-parasites were physically examined
- Ectoparasites were examined physically
- Blood was collected from the birds on weekly basis for six weeks and serum tested using Hemagglutination inhibition
RESULTS

Ectoparasites treatment

Percentage

Before

After

Treatment of ectoparasites
Endoparasites treatment

Before

After

Percentage
ND protection for vaccinated and non vaccinated groups

ND protection

Antibody levels

Groups

Non vaccinated

Vaccinated

Non vaccinated

Vaccinated

0

1000

200

800

400

600

200

0
Total parasite control vs partial parasite control

ND protection

Antibody levels

Vaccinated groups

Partial parasite control

Total parasite control

Partial parasite control

Total parasite control
Conclusion

- This study has shown that parasite control results in improved immune response to ND vaccination by the village chicken.

- Ecto- or endo-parasites combined treatments gives better immunity level to NDV than treatment of ecto-parasites or endo-parasites alone.

- Albendazole at a dosage of 20mg/kg bwt is both safe and efficient for helminth treatment (except Gonngylonema inguivicola).
Acknowledgment

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