

Table (2): Results of HI antibody titers in sera of chickens vaccinated against ND using different vaccination models. (n= 25)

| Group No. | Vaccination | | | Days of age | | | | | | | | |
|-----------|------------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 1 st | 2 nd | 3 rd | 0 | 7 | 14 | 19 | 26 | 33 | 40 | | |
| 1 | BL | NL | NB | 2.48 ± 1.23 | 1.92 ± 1.19 | 2.28 ± 1.48 | 3060 ± 1.38 | 3.56 ± 1.02 | 4.04 ± 1.14 | 5.20 ± 1.66 | | |
| 2 | | | LB | | | | | | 5.57 ± 1.20 | | | |
| 3 | | | LL | | | | | | 5.20 ± 1.20 | | | |
| 4 | | LL | LB | | | | | 4.64 ± 1.09 | 6.33 ± 1.32 | | | |
| 5 | | | NB | | | | | 5.25 ± 0.89 | | | | |
| 6 | | | LL | | | | | 7.21 ± 1.78 | | | | |
| 7 | NB | NL | NB | | | 2.48 ± 1.23 | 1.92 ± 1.19 | 1.84 ± 1.37 | 3.16 ± 1.12 | 3.92 ± 1.22 | 4.80 ± 0.97 | 6.00 ± 1.67 |
| 8 | | | LB | | | | | | | | 7.31 ± 2.25 | |
| 9 | | | NL | | | | | | | | 5.77 ± 1.87 | |
| 10 | | LL | NB | | | | | | | 5.73 ± 1.61 | | |
| 11 | | | LB | | | | | | | 6.88 ± 1.01 | | |
| 12 | | | LL | | | | | | | 5.83 ± 1.47 | | |
| 13 | Control negative | | | | | | | 1.52 ± 1.23 | 0.96 ± 1.25 | 0.0 | 0.0 | 0.0 |

Table (3): Results of weekly mean body weight of ND vaccinated chicken groups (n=25).

| Group No. | Vaccination | | | Weeks of age | | | | | | | Conversion Rate | | | | |
|-----------|------------------|-----------------|-----------------|--------------|--------------|---------------|---------------|--------------|----------------|-----------------|------------------|----------------|------------------|-----------------|------|
| | 1 st | 2 nd | 3 rd | 0 | 1 | 2 | 3 | 4 | 5 | 6 | | | | | |
| 1 | LB | NL | N B | 38.25± 3.45 | 97.50± 10.62 | 255.65± 29.94 | 478.5± 41.95 | 623.6± 45.87 | 836.8± 88.6 | 1139± 129.2 | 2.40 | | | | |
| 2 | | | LB | | | | | | 857± 99.4 | 1191± 110.8 | | 2.29 | | | |
| 3 | | | LL | | | | | | 856.4± 2.7 | 1154± 82.1 | | | 2.55 | | |
| 4 | | LL | LB | | | | | 629.5± 53.6 | 901± 58.1 | 1285± 104.2 | 2.10 | | | | |
| 5 | | | N B | | | | | | 875± 30.8 | 1061± 35.6 | | 2.37 | | | |
| 6 | | | LL | | | | | | 898± 97.9 | 1156.7± 85.5 | | | 2.12 | | |
| 7 | NB | NL | N B | | | 97.50± 10.62 | 256.18± 20.55 | 540± 40.31 | 692± 1.22 | 942.5± 90.6 | 1295± 140.4 | 2.32 | | | |
| 8 | | | LB | | | | | | | 918.6± 6.1 | 1281.6± 114.3 | | | 2.16 | |
| 9 | | | NL | | | | | | | 898.3± 96.4 | 1238± 77.9. | | 2.32 | | |
| 10 | | LL | N B | | | | | | 615.5± 64.12 | 499± 30.28 | 615.5± 64.12 | 911.2± 97.9 | | 1125± 105.8 | 2.35 |
| 11 | | | LB | | | | | | | | | 959.7± 97.0 | | 1226.5± 95.1 | |
| 12 | | | LL | | | | | | | | | 874.7± 84.2 | 1253.5± 119.1 | 2.23 | |
| 13 | Control negative | | | 38.25± 3.45 | 97.50± 10.62 | | | 261±37.22 | | 499.5±7.37 | 875.5± 101.6 | 1311± 102.3 | 1311± 102.32 | | 2.07 |

Table (1): Results of MG and MS plate agglutination test.

| Age | No. of samples | MG | | MS | |
|--------|----------------|------------|----|------------|----|
| | | No. of +ve | % | No. of +ve | % |
| 1 day | 25 | 9 | 36 | 44 | 11 |
| 7 days | 25 | 7 | 28 | 60 | 15 |

Table (4): Results of challenge test on ND vaccinated chickens.
(n= 20 chickens/group)

| Group No | Vaccination | | | Challenge test | |
|----------|------------------|-----------------|-----------------|-----------------|-----------------|
| | 1 st | 2 nd | 3 rd | No. of survived | Protection rate |
| 1 | LB | NL | NB | 17 | 85 |
| 2 | | | LB | 19 | 95 |
| 3 | | | LL | 18 | 90 |
| 4 | | LL | LB | 20 | 100 |
| 5 | | | NB | 19 | 95 |
| 6 | | | LL | 20 | 100 |
| 7 | NB | NL | NB | 17 | 85 |
| 8 | | | LB | 20 | 100 |
| 9 | | | NL | 20 | 100 |
| 10 | | LL | NB | 19 | 95 |
| 11 | | | LB | 20 | 100 |
| 12 | | | LL | 20 | 100 |
| 13 | Control negative | | | 20 | 0 |

Table (5): Mean lesion score of CRD in ND vaccinated Chickens.
(n=10 chickens)

| Group No | Vaccination | | | Lesion score |
|----------|------------------|-----------------|-----------------|--------------|
| | 1 st | 2 nd | 3 rd | |
| | | | | Mean |
| 1 | LB | NL | NB | 1.6 |
| 2 | | | LB | 1.4 |
| 3 | | | LL | 1.1 |
| 4 | | LL | LB | 0.9 |
| 5 | | | NB | 0.9 |
| 6 | | | LL | 1.3 |
| 7 | NB | NL | NB | 1.2 |
| 8 | | | LB | 1.2 |
| 9 | | | NL | 1.9 |
| 10 | | LL | NB | 0.9 |
| 11 | | | LB | 0.9 |
| 12 | | | LL | 1.5 |
| 13 | Control negative | | | 0.6 |

Fig (2): Protection rate of challenged ND vaccinated chickens.

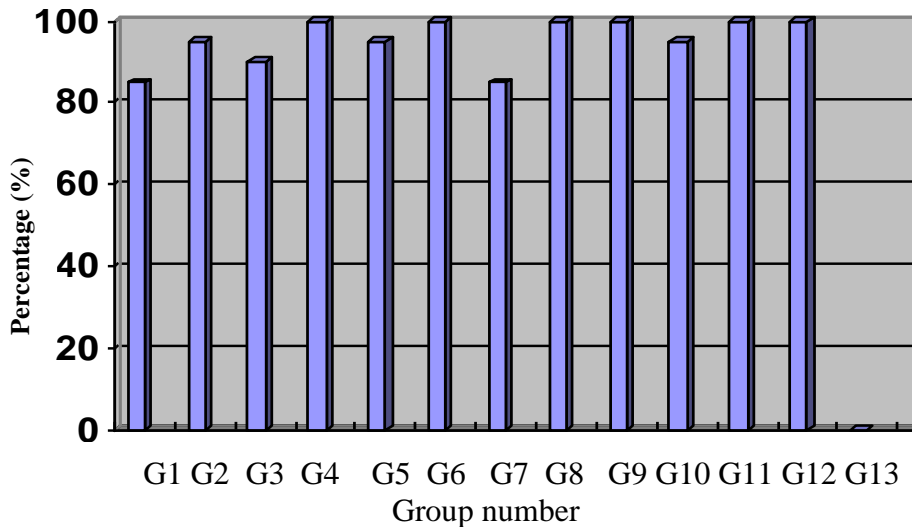


Fig (4): CRD lesion score in 40 days ND vaccinated chickens.

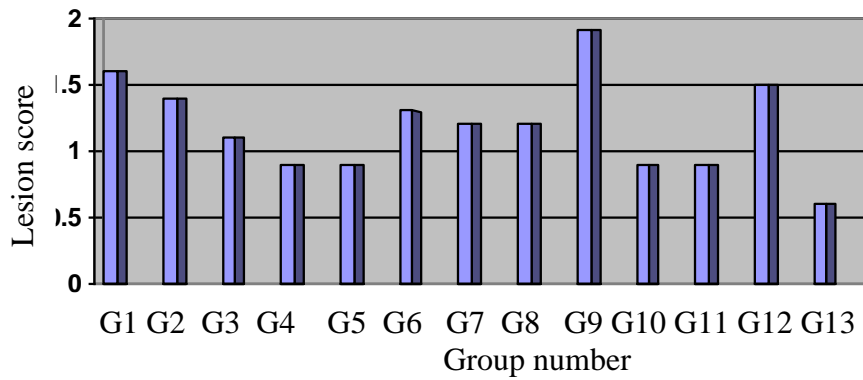
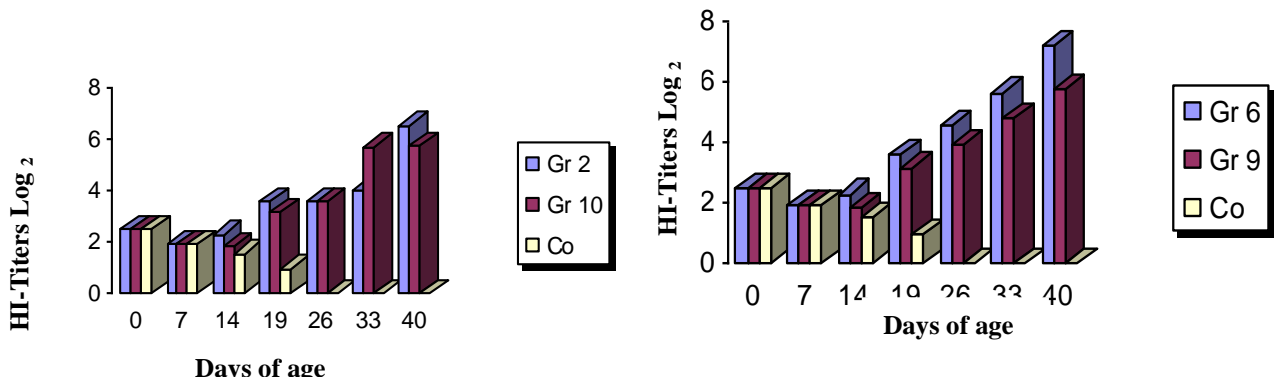


Fig (1): Level of HI antibody log₂ titers in sera of chickens vaccinated against ND



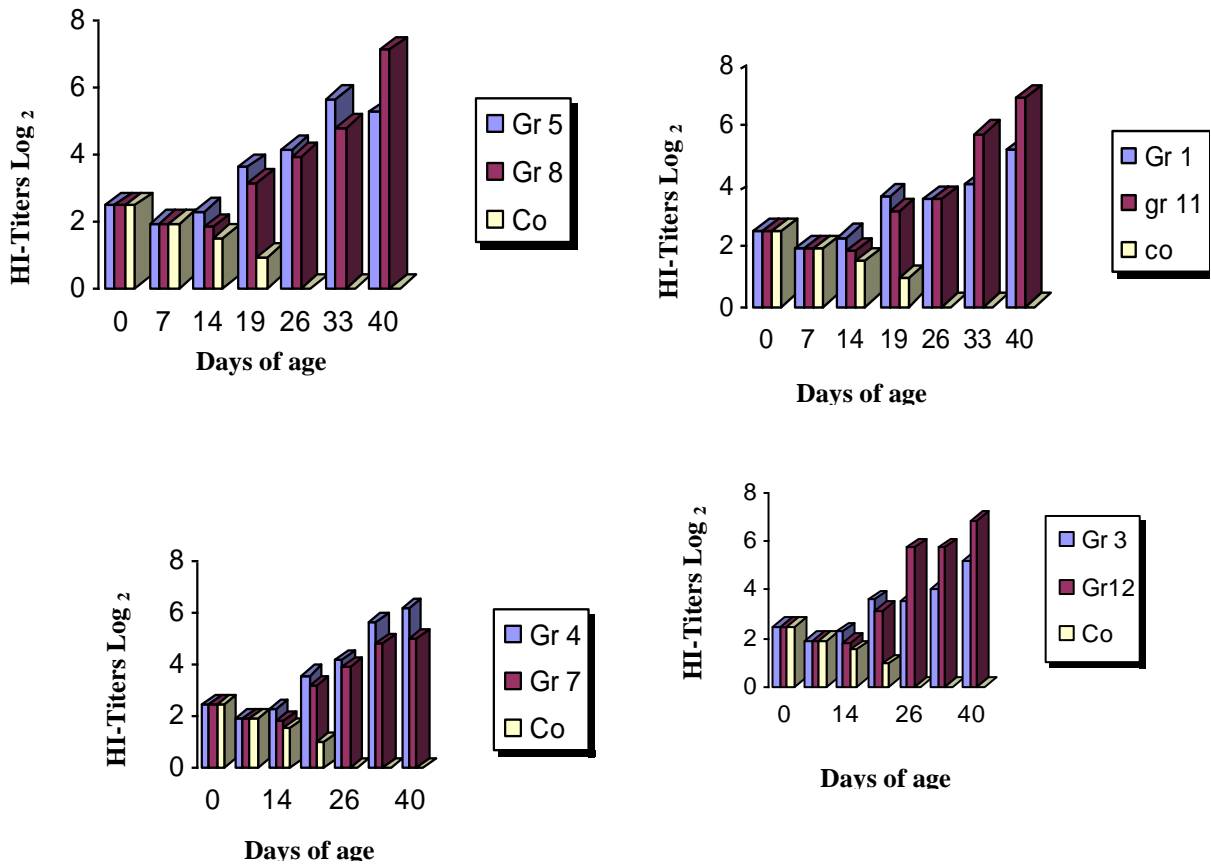


Fig (3): Conversion rate of 40 days ND vaccinated chickens.

