

REVACCINATION OF BROILER CHICKENS IN THE FIELD IN A REGION WITH HIGH INFECTION PRESSURE BY GI 23 GENOTYPE

Edmilson Freitas^a, Gustavo Schaefer^a, Priscila Diniz Lopes^a, Fábio Cristiano Vieira^a, Gabrielle Nellis Bragaglia^a, Adriane Holtz Tirabassi^a, Eduardo Leffer^b, Djalma Deschk^b.

^aVaxxinoa Brasil. R. Cel. José Nunes dos Santos, 639 - Jardim Madalena, Vargem Grande Paulista – São Paulo state, Brazil, zip code: 06730-000.

^bCooperativa Coopavel Agroindustrial. BR-277, 591 – Parque São Paulo, Cascavel – PR, 85803-490.



Introduction

After the introduction of a new variant, genotype GI 23 (VAR2), in poultry flocks in southern Brazil in mid-2021, there was a marked increase in the frequency of Infectious Bronchitis (IB), productive losses due to reduced zootechnical performance and partial and total condemnations of broiler chickens slaughtered. Vaccination is the most efficient way to prevent infection by the infectious bronchitis virus (IBV). In the most cases, a single dose on the first day (in the hatchery) has been sufficient for chickens. In several countries, revaccination of broiler chickens in the field is frequently used, especially in places with high infection pressure. The aim of this study was to evaluate the revaccination of broiler chickens in the field in a region with high infection pressure by the GI 23 genotype during three consecutive production cycles.

Materials and Methods

In this study, broiler flocks from 17 farms, with a housing capacity of approximately 650,000 birds, located in a specific region of western Paraná in southern Brazil with high infection pressure by IBV, more specifically by the GI 23 genotype, were selected. Previously, these farms had a positive diagnosis for this genotype and showed an increase in both partial condemnations and total condemnations at slaughter. After confirmation of the diagnosis of infection by the GI 23 in the region, a strong cleaning and disinfection work was carried out in 100% of the poultry houses. Initially, this cleaning consisted of complete remove of the litter, washing of all poultry facilities and their used equipments. In addition, all poultry houses were disinfected using disinfectant products. An initial downtime period of approximately 30 days before the first revaccination cycle was also instituted. In subsequent cycles these downtime periods were approximately 15 days. Before the introduction of the new vaccination protocol, this region had a partial condemnation rate for airsacculitis of 17% and a total condemnation rate of 10% at slaughter. Initially, only vaccination of chicks via spray on the first day of life in the hatchery was used. For this vaccination, two vaccines were used concomitantly: one containing genotype GI 11 (BR-1) and the other containing genotype GI 1 (Massachusetts). After diagnosis the GI 23 genotype in that region, a new vaccination protocol was introduced, which consisted of revaccinating broiler flocks in the field using the same vaccines at 18 days of age. This procedure was carried out in three production cycles in all poultry houses in the selected region. Revaccination of broiler chicken flocks was performed using drinking water. Both vaccination in the hatchery and revaccination in the field were carried out by trained professionals. At slaughter age, broilers flocks were slaughtered and data on partial condemnations, for aerosculitis, and total condemnations were compiled. A summary of the entire execution of this study can be seen in Figure 1.

Results and Discussion

The results observed in the Graph 1 demonstrate that after the first field revaccination cycle, it was observed that the average percentage of total condemnations of broiler flocks from farms diagnosed with GI 23 before revaccination dropped from 10 to 1%. In subsequent cycles, total condemnations decreased to 0.0%. Regarding partial condemnations for aerosacculitis, there was a decrease in the average rate of condemnations from 17% to 7% in the first cycle, in the second cycle this rate dropped even further to 4% and in the last cycle to 0.0%. This study demonstrated a significant decrease in partial and total condemnations at the end of the three revaccination cycles with the association of vaccines of GI 11 and GI 1 genotypes in broiler flocks located in a region with high infection pressure by the GI 23 genotype.

Conclusions

Vaccination protocol introduced with a vaccination in the hatchery and revaccination in the field showed a significant improvement in the rate of partial and total condemnations in broiler chickens. Association of vaccines containing the GI 1 and GI 11 genotypes was shown to be highly effective in broilers flocks revaccinated in the field. Regions with high infection pressure by the GI 23 genotype, field revaccination in broiler chickens flocks with GI 1 and GI 11 genotypes is recommended.

Graph 1: Distribution of cases of IBV infection diagnosed in Paraná (%) in 2021 and 2022.

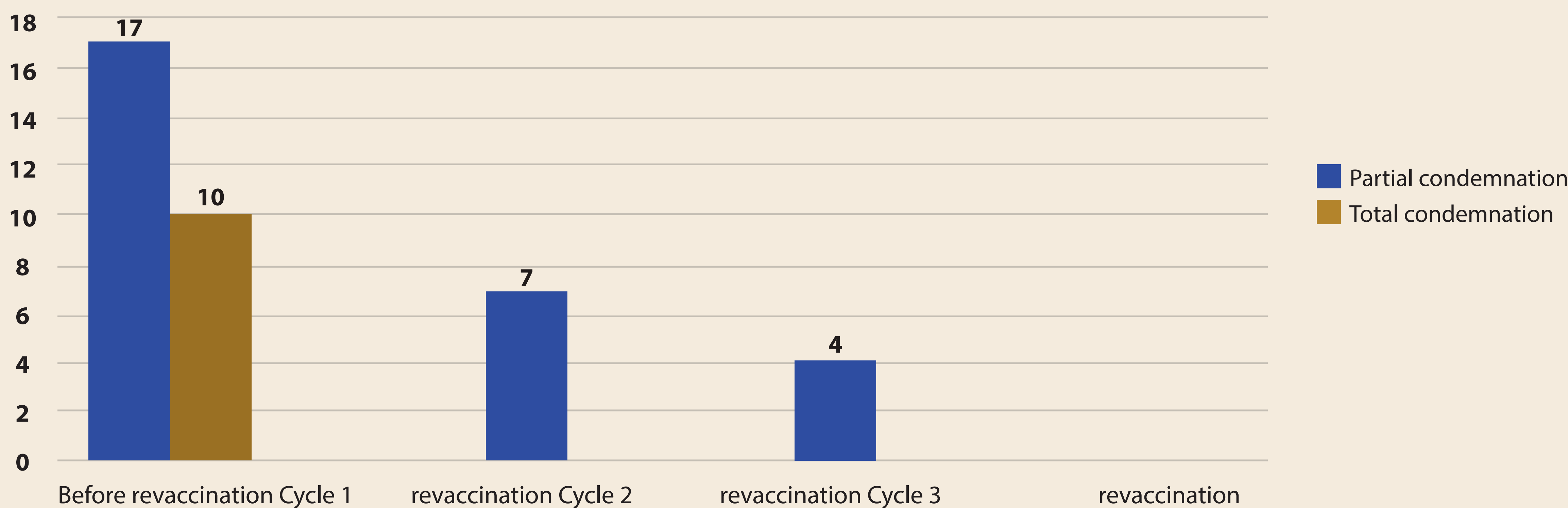
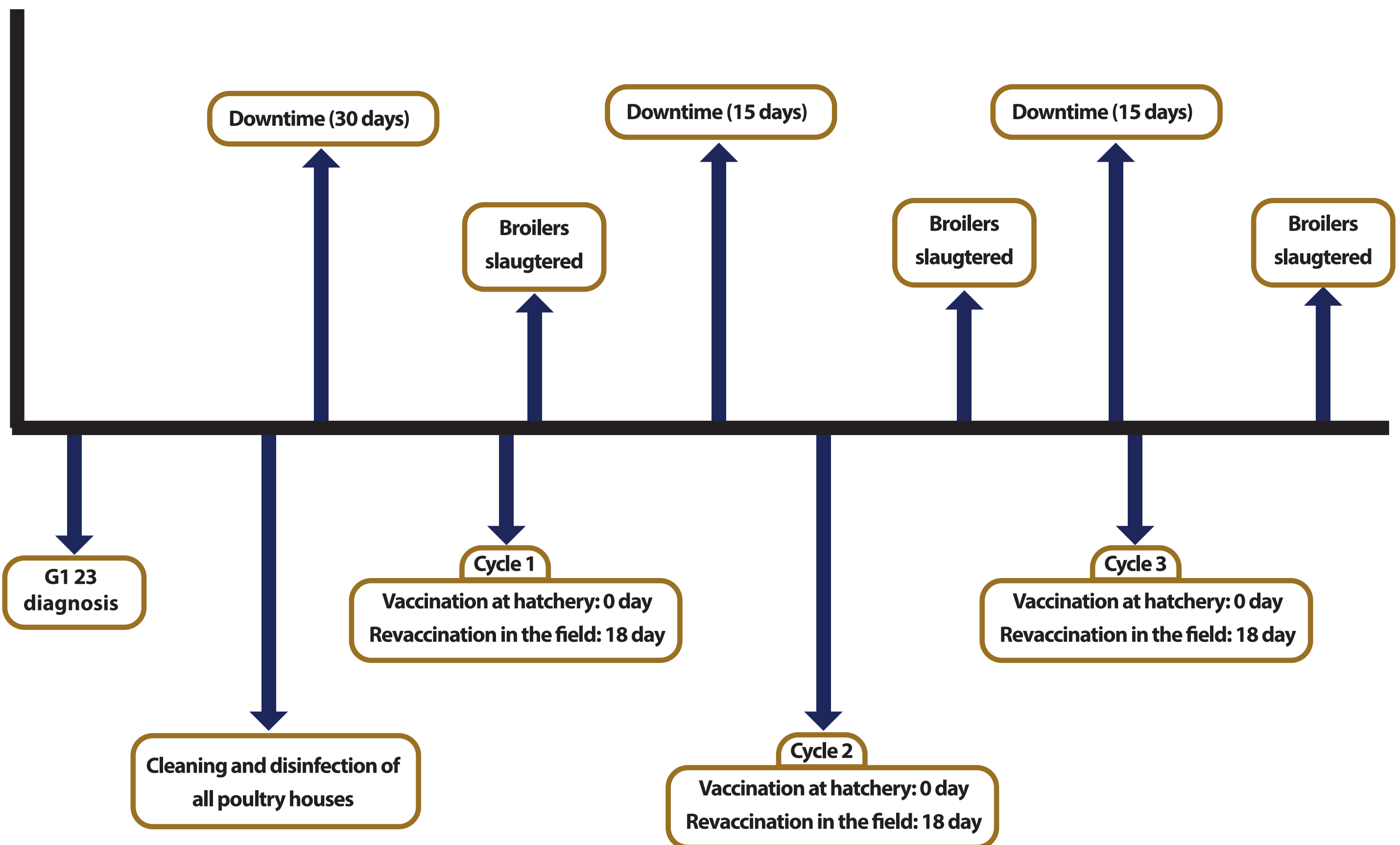


Figure 1: Timeline showing the entire execution of the study conducted in a region of Paraná state with high infection pressure by GI 23.



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