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Control of mastitis and Somatic Cell Count in *Mediterranean buffaloes* using **STARTVAC® vaccine**: comparison of two clinical trials

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CONCLUSIONS:

- Two different clinical trials based on STARTVAC® vaccine use were evaluated for the first time in dairy Mediterranean Buffalo;
- Protocol B (based on 3 administrations) showed better prophylactic properties against mastitis due to *S. aureus* than Protocol A (2 administrations);
- A better trend of SCC was also detected using Protocol B than Protocol A;
- The vaccine employment in buffalo represents an interesting challenge, even though its practice use should be suggested in association with a good herd health management.

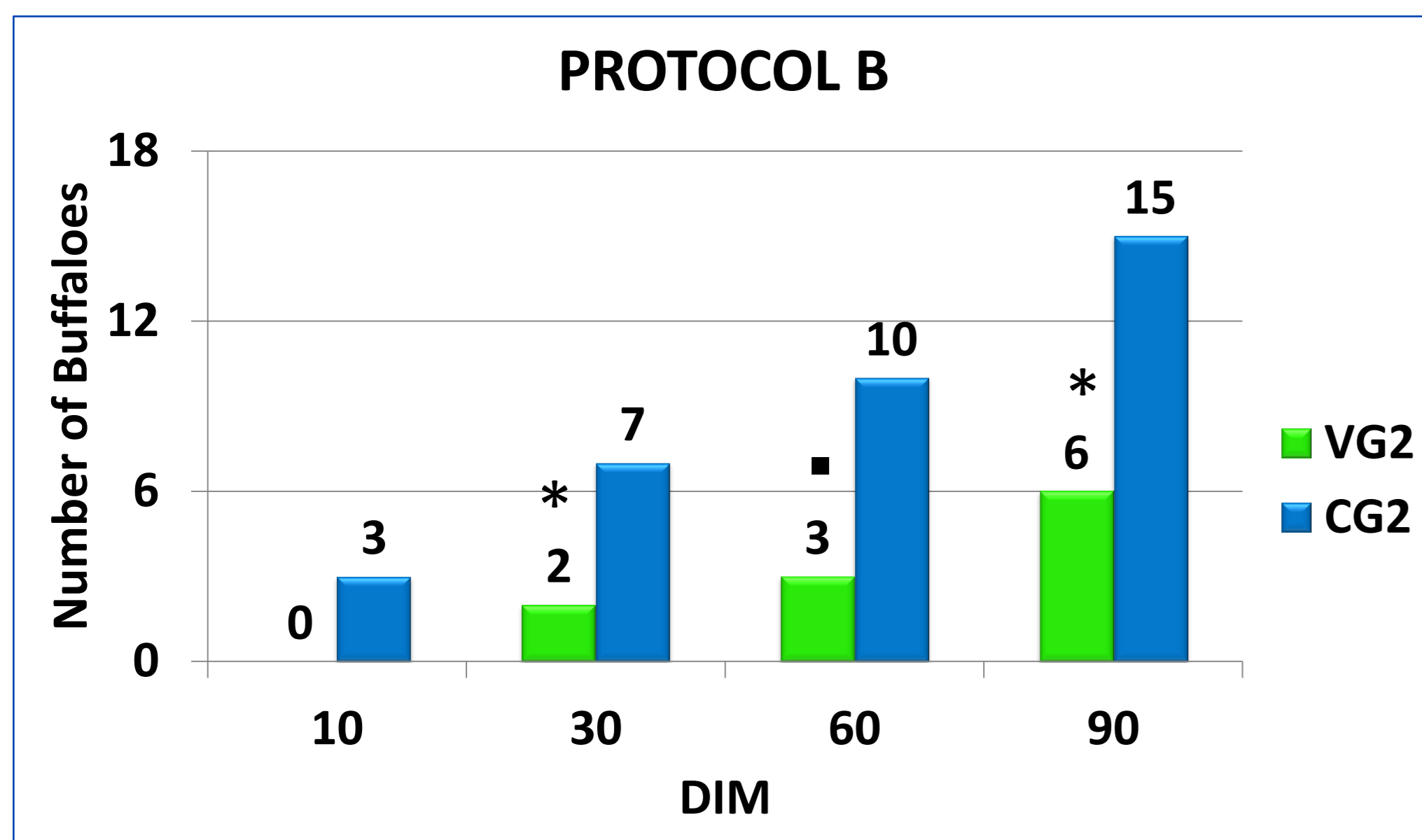


BACKGROUND AND AIMS:

- Staphylococcus aureus* (*S. aureus*) is considered one of the most important udder pathogens in dairy buffaloes;
- it can cause mastitis and intramammary infection (IMI), with a prevalence of positive samples up to 55% in infected herds;
- it causes considerable economic loss for farmers and dairy industry;
- The aim of the current study:** to evaluate the prophylactic effectiveness of inactivated vaccine, on *Mediterranean buffaloes* (*Bubalus Bubalis*) mastitis due to *Staphylococcus aureus* infection.

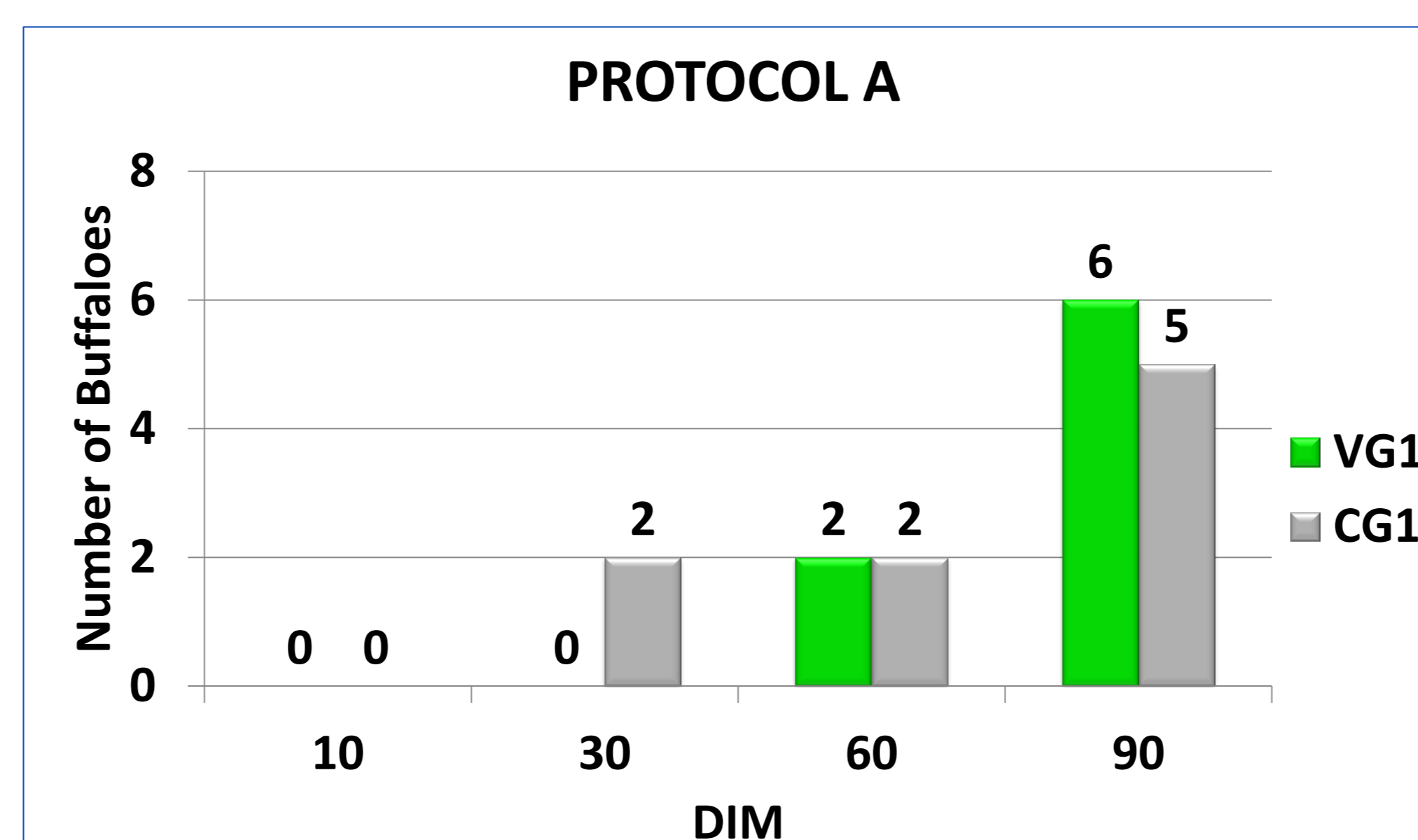
RESULTS:

Incidence of mastitic buffaloes at several DIM



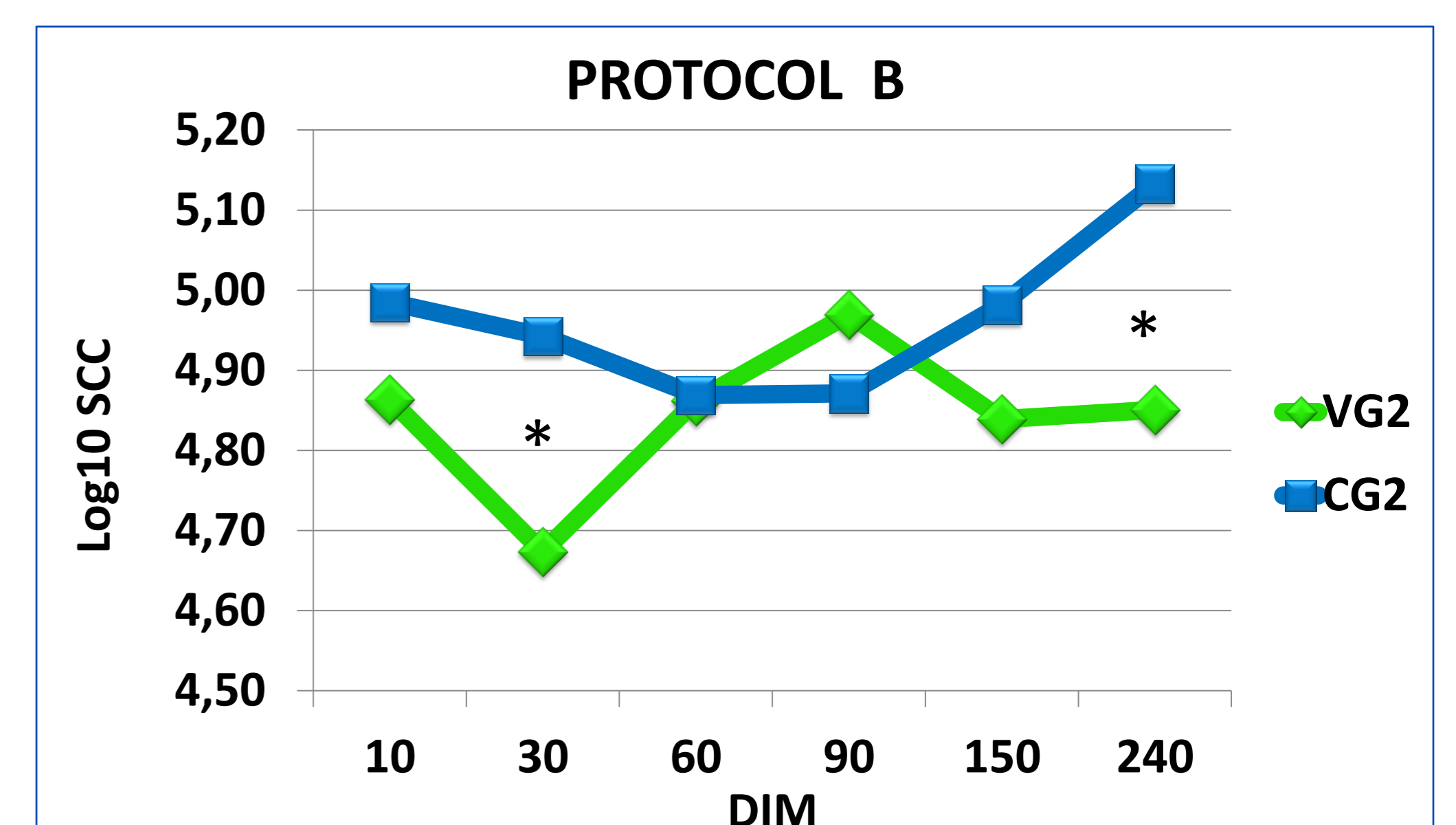
* $P = 0.01$, * $P < 0.01$
VG2 = Vaccinated Group 2 - CG2 = Control Group 2

Incidence of mastitic buffaloes at several DIM



No significant statistical difference
VG1 = Vaccinated Group 1 - CG1 = Control Group 1

Trend of Log₁₀ SCC at several DIM



* $P = 0.05$
VG2 = Vaccinated Group 2 - CG2 = Control Group 2

- 480 bacteriological milk culture (BC) and somatic cell counts (SCC) analysis were performed;
- Only for the Protocol B, significant statistical differences were found about mastitis prevalence between VG2 and CG2 at 30 (VG2.2/30 vs. CG2.4/27; $P < 0.05$), 60 (VG2.1/28 vs. CG2.3/23; $P = 0.008$) and 90 (VG2.3/27 vs. CG2.5/20; $P = 0.006$) DIM
- No significant differences were found considering *S. aureus* IMI and *E. coli* mastitis, between the two protocols.
- No significant differences were detected on means SCC values between VG1 and CG1
- Higher means milk yields were recorded in both the vaccinated groups (G1 - VG2) than in the control ones (CG1 and CG2)



MATERIAL AND METHODS:

- Two different I.M. vaccine administration protocols (STARTVAC®, HIPRA, Spain), were evaluated on 60 buffalo heifers: 30 Protocol A (Vaccinated group 1-VG1) and 30 Protocol B (Vaccinated group 2-VG2) (Figure 1);
- Each protocol was characterized by a control groups (CG1-CG2) and lasted one year (December 2011- November 2013);
- A composite milk sample (4-quarter pool) was collected for each animal to perform SCC, BC and CMT at 10, 30, 60 and 90 DIM; Dairy milk yields were monthly recorded after milking until drying-off;
- Buffaloes producing milk with $SCC > 200 \times 10^3$ Cells/mL and positive BC to *S. aureus* were considered as affected by mastitis and in end-point phase.

