The aim of this study was to determine the consequences of the infection of BVDV genotype II (BVDV-2) in calves with preexisting immunity to BVDV-1 (induced by infection with wild type BVDV (Group A, 4 calves), or induced by vaccination with a killed BVDV-1 product (Group B, 2 calves). Group A and B were intranasally exposed to a field isolate of BVDV-2 (25ml x 10^-7.8 TCID50/ml). Calves of Group A had erosions on the oral mucosa from 3 to 4 day post-challenge (DPC); moreover, intense salivation, mucous nasal secretion and sporadic diarrhea were observed from 4-14 DPC. Only one calf of Group B had diarrhea at 5 DPC. The average value of peripheral blood leukocytes (PBL) previous to BVDV-2 challenge was 8,775 PBL/ml (±603) in calves of Group A and 9,975 PBL/ml (±1308) in calves of Group B. After BVDV-2 challenge there was leukopenia in Groups A and B. The minimal number of PBL of 5,875 PBL/ml (±311) was observed in Group A at 6 PDC (P <0.05). There were differences (P <0.05) in the average of PBL during the 17 DPC among challenged animals and uninfected controls. Moreover, a difference in the number of blood lymphocytes was observed at 6-7 DPC between virus exposed and control calves. BVDV was isolated from ocular swabs of 3 calves of Group A at 13 and 17 DPC and from PBL at 9 and 11 DPC. The neutralizing antibody titer (NT) to both genotypes of BVDV was higher (P <0.05) in calves of Group A. Previous to virus challenge calves in this group had NT of 1:125 (geometric mean) and 1:128 to BVDV-1 and -II, respectively. The NT rose to 1:2048 at 17 DPC to both Genotypes of BVDV. Calves in Group B had a NT of 1:16 to both BVDV-1 and -II previous to BVDV-2 challenge. At 17 DPC the NT rose to 1:64 and to 1:181 to BVDV-1 and -II, respectively. These results allow us to conclude that antibodies generated by natural infection or vaccination with BVDV-1 increased for BVDV-1 and -2 after the experimental challenge with BVDV-2.

Keywords
Bovine Viral Diarrhea Virus, BVDV, Experimental Infection, Genotypes, Immunity, Killed Vaccine.