

SEROLOGICAL SURVEY OF CAPRINE ARTHRITIS- ENCEPHALITIS VIRUS INFECTION IN SIBIU COUNTY, ROMANIA

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INTRODUCTION

Caprine arthritis-encephalitis (CAE) is an economically important viral disease of goats, caused by a single-stranded RNA lentivirus belonging to the Retroviridae family, Orthoretrovirinae subfamily. CAE virus (CAEV) infection is widespread among dairy goats in most industrialized countries. Clinical disease in goats includes encephalitis in kids, chronic arthritis, inflammatory mastitis and progressive respiratory disease in adults. Transmission of CAEV occurs generally via colostrum and milk consumption, but horizontal transmission also contributes to disease spread. Most goats infected remain virus positive for life, generally asymptomatic and can develop CAE months to years later (Balbin & Mingala, 2017). Infection with CAEV in goats from Romania has been reported (Gurău et al., 2015 ; Enache et al., 2017).

The aim of the study was to investigate by AGID the serological prevalence of CAEV infection in goat herds from a semi-intensive goat raising area located in Sibiu county.

MATERIALS AND METHODS

A number of **15,947** serum samples were collected over a **3 year period** and analyzed using a commercial Agar Gel Immunodiffusion (AGID) test. The samples were taken randomly from goat herds from 6 villages from Sibiu county: Arpaşu de Jos, Avrig, Cârţişoara, Laslea, Porumbacul de Jos, Şelimbăr (Fig. 1). All samples were analyzed using a commercial Agar Gel Immunodiffusion (AGID) test (Porquer Montpellier, France) according to the manufacturer's instructions. The analysis of collected data was realized using commercially available spreadsheet software (Excel 2007).

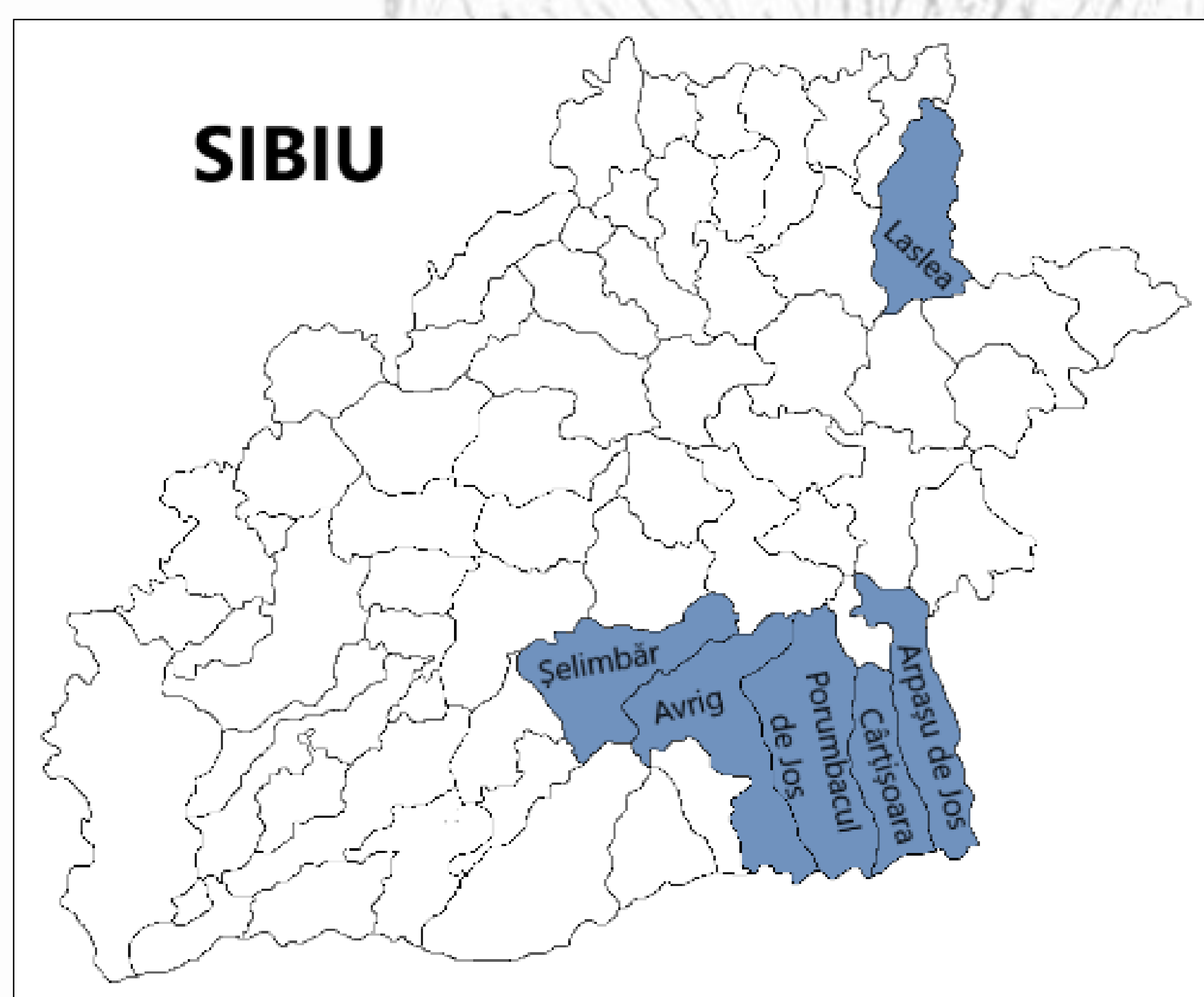


Figure 1 : Assay-sampling from all 6 villages from Sibiu

RESULTS AND DISCUSSIONS

The distribution of the results obtained in all 6 villages is presented in table 1. A total of 129/5621 (2.29%) serum samples were positive for CAEV in the AGID in the 1st year. Seropositive animals were present in 5/6 villages, indicating widespread infection. In the 2nd year the number of positive samples increased 275/7766 (3.54%). The results have shown that the overall seroprevalence was 9.06% higher in the last year of the study than in previous two years in which values of 3.54% and 2.29% were recorded. The highest difference was found in Laslea with 17 positive samples (1.63%) in the first year and 86 positive samples in the 3rd year (14.90%).

REFERENCES

- Balbin M.M., Mingala C.N., 2017, Emerging and re-emerging Infectious Diseases of Livestock, Springer, 191-213
- Enache D.A., Baraitareanu S., Dan M., Gurau M.R., Otelea F., Dobre A., Danes D., 2017, Preliminary results of mvv and caev seroprevalence in Romanian sheep and goats, Scientific Works. Series C. Veterinary Medicine, LXIII(1) : 95-100
- Gurău M.R., Baraitareanu S., Danes D., 2015, Serological survey of caprine arthritis-encephalitis virus infection in a southeastern Romanian farm, Scientific Works. Series

Table 1: Distribution of CAEV seropositive samples according to the herd origin

VILLAGES	RESULTS								
	1 st year			2 nd year			3 rd year		
	Samples	+	%	Samples	+	%	Samples	+	%
Arpaşu de Jos	341	0	0	1277	12	0.94	361	21	5.82
Avrig	1701	56	3.29	1622	86	5.30	526	34	6.46
Cârţişoara	254	2	0.79	337	3	0.89	116	4	3.45
Laslea	1042	17	1.63	2111	77	3.65	577	86	14.90
Porumbacul de Jos	866	7	0.81	994	43	4.33	300	32	10.67
Şelimbăr	1417	47	3.32	1425	54	3.79	680	55	8.09
TOTAL	5621	129	2.29	7766	275	3.54	2560	232	9.06

Two main CAE developmental patterns were observed in the studied flocks. From year one to year three, in 50% of the locations, there was a steady, from 2 to 10 fold increase, of the positive animals (from 3.29 to 6.46% and 0.81 to 10.67% respectively), while in the other 50%, a sudden of 2 to 5 fold increase (3.32 to 8.09% and 0.0 to 5.82%, respectively), was noticed (Fig. 2). These data supported the impact of differentiated raising systems' and biosecurity measures' implementation in various flocks.

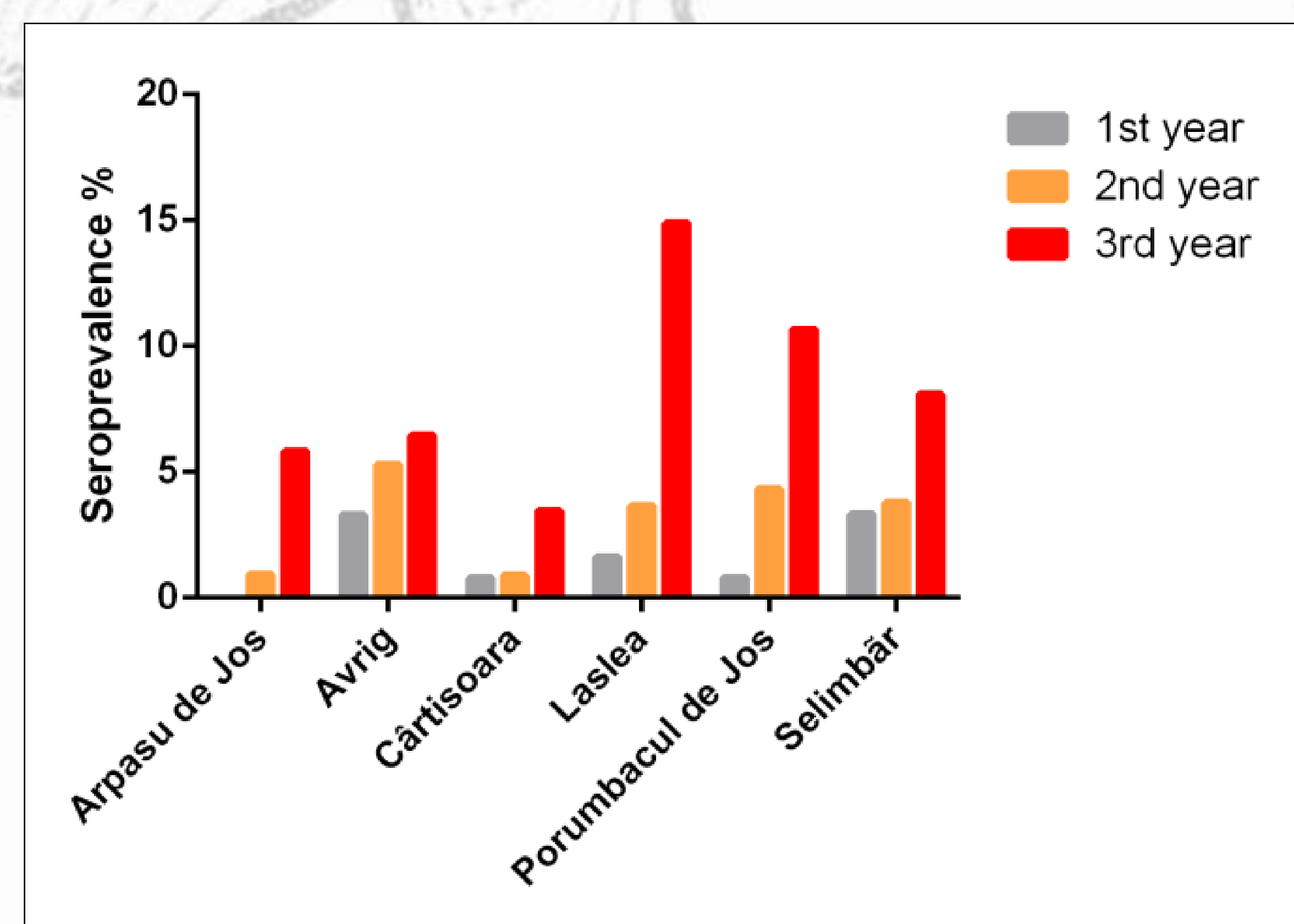


Figure 2: Comparison of the CAEV seropositive goats in all 6 villages from Sibiu

The movement of animals among dairy farms might increase the risk to introduce infected goats and cause higher seroprevalence in those farms. At national level, the seroprevalence (38.46%) reported by Gurău et al. (2015) is much higher, due to the restricted area (Brăila County) of the analyses carried out by they authors.

CONCLUSIONS

The obtained data provided useful information on the influence of herd health management factors in controlling the spreading of CAE in the selected flocks. Proper prevention and control measures must be designed to prevent further economic losses due to CAEV infection in the area.