



# Rotaviruses A, B and C detected on pig farms in the Czech Republic

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## INTRODUCTION

So far, rotavirus groups A, B, C, and H have been detected in pigs; all of these rotavirus species can cause diarrhea in pigs. Rotavirus B (RVB) is more often detected in older animals and its economic and clinical importance is smaller. Currently, with the development of modern molecular-biological diagnostic methods, Rotavirus C (RVC) is being detected with increasing rate, and in some studies it is reported as the main single cause of neonatal diarrhea in piglets.

## RESULTS

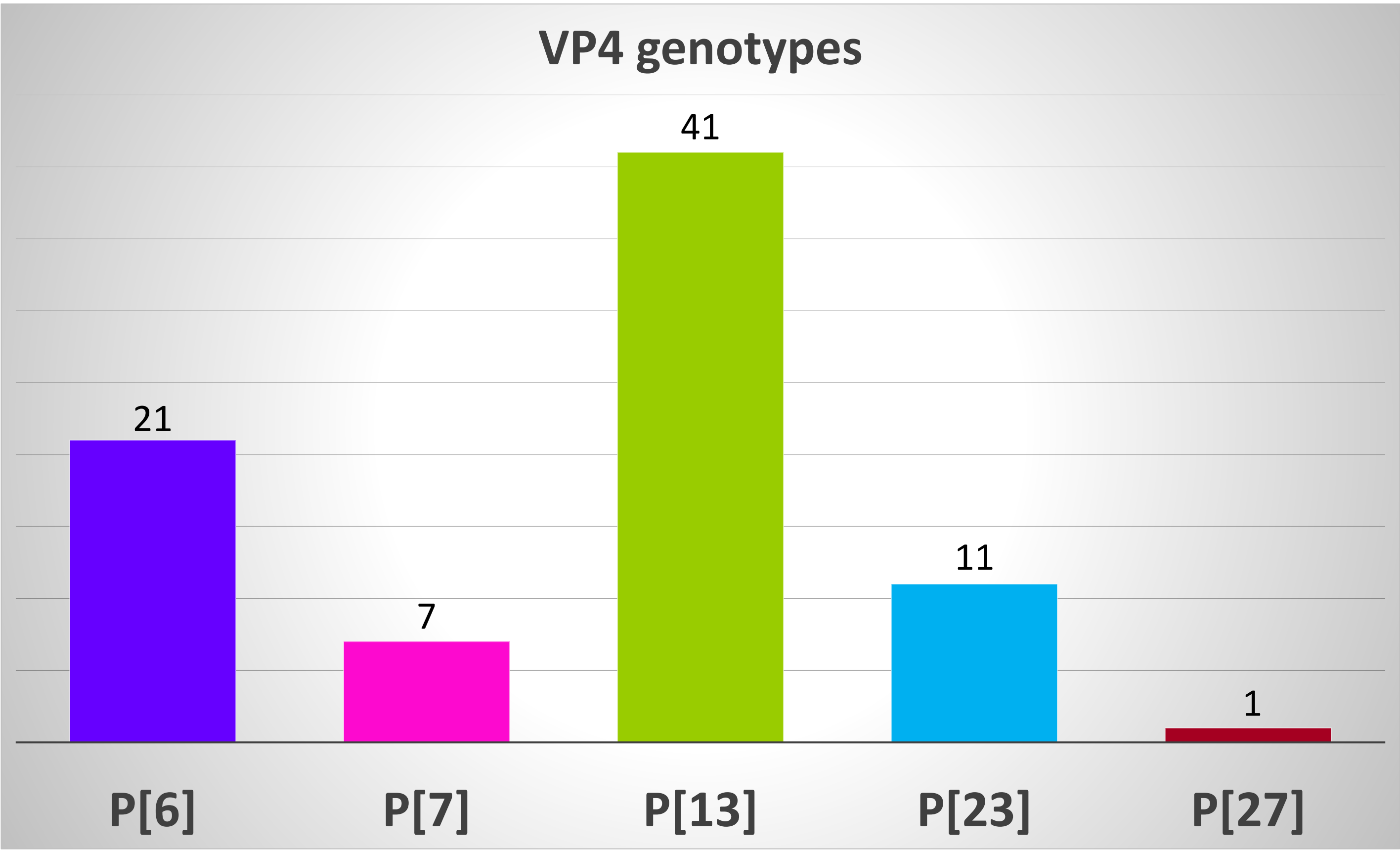
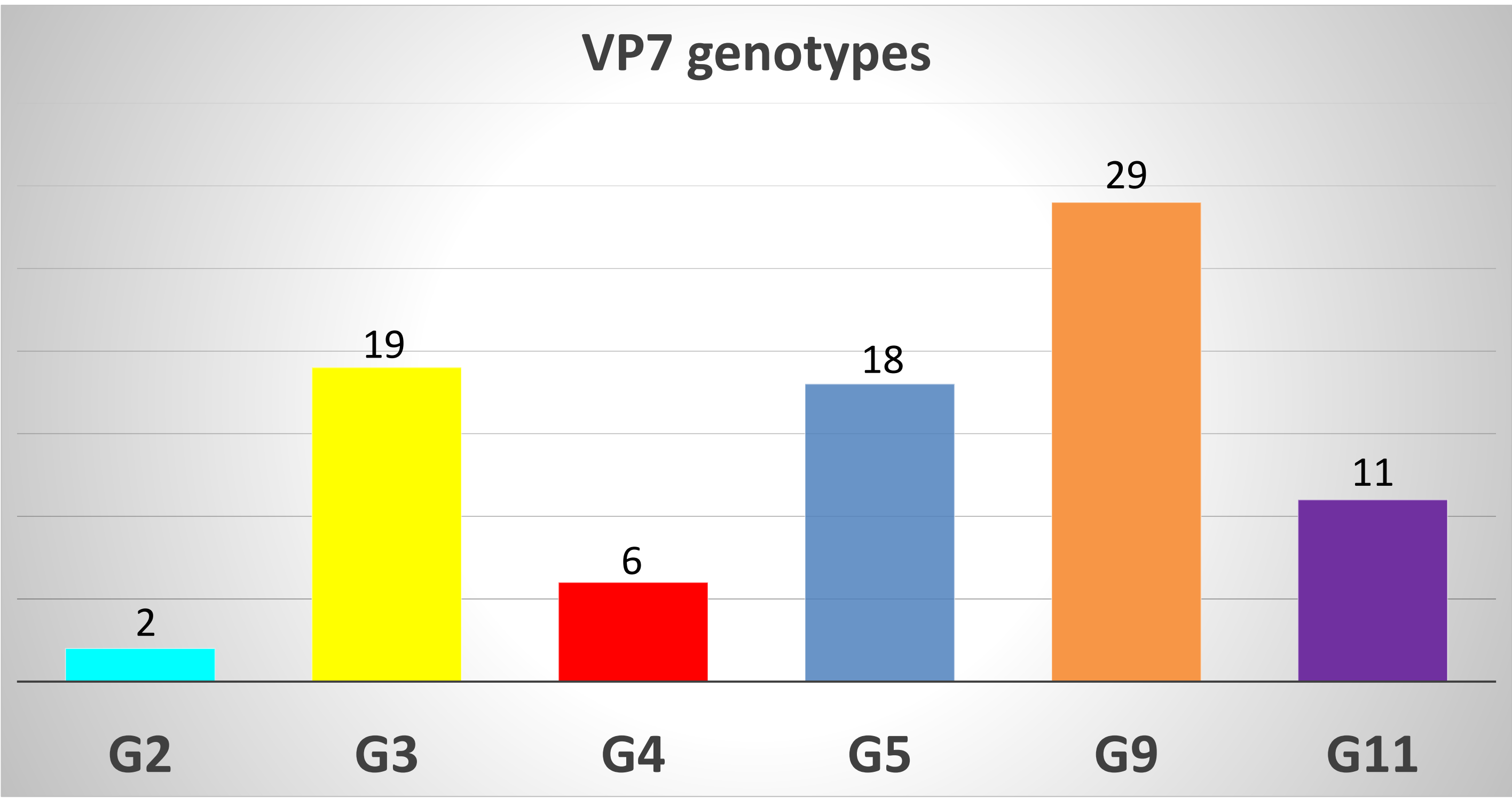
Over 62% of the samples came from suckling piglets, the rest of the samples were taken from piglets after weaning. Rotavirus A was detected most often, either alone or in co-infection with other types of RV, occurring in 67.7% of all examined samples. Rotaviruses B and C were more often detected in combination with other RVs, only seven samples were found to be infected with only one of these rotaviruses. In the category of suckling piglets, at least one of the three monitored rotaviruses was detected in 39.4% of the examined samples. In older piglets after weaning, all of th samples were positive for RV, which in this age category mostly occurred in co-infection (89.6% of samples contained two or three types of rotavirus).

Prevalence of rotavirus in samples from different age categories			
	Suckling piglet	Weaned piglet	Total
RVA+	20	1	21
RVB+	4	2	6
RVC+	5	2	7
RVA+B+C+	3	28	31
RVA+B+	11	14	25
RVA+C+	9	0	9
RVB+C+	0	1	1
Negative	27	0	27
Total	79	48	127

- **RVA** - the most prevalent rotavirus – in **86% of RV-positive** samples
- **co-infections** in weaned piglets – 89.6% of samples with two or three rotaviruses
- 100% of samples from weaned piglets positive for RVs

## Material and methods

- ❖ **127 stool samples** from domestic pigs (*Sus scrofa* f. *domestica*)
- ❖ different age categories collected during from July 2023 to June 2024
- ❖ most of the samples from animals with symptoms of **gastrointestinal disease**
- ❖ examined in real-time PCR with a hydrolysis probe
- ❖ detection of **RVA, RVB and RVC**
- ❖ sequencing of RVA genes coding whole **VP7** and partial **VP4**
- ❖ determination of RVA genotypes



## Conclusions

- ✓ Rotaviruses are the most often detected etiological agents connected with diseases of GIT in suckling as well as weaned piglets.
- ✓ **RVC** was detected more frequently in the **post-weaning** group of piglets (64.6% of RVC-positive samples) than in suckling piglets (34.4% of RVC-positive samples).
- ✓ The most frequent RVA G-type – **G9** (33.7%) combined usually with P[13] or P[23], next **G3** (in 22.1%) and **G5** (21%)
- ✓ The most abundant P-types were **P[13]** and **P[6]** which were detected in 47.7% and 24.4%, respectively.
- ✓ Sequencing analyzes of detected RVs make it possible to verify the effectiveness and completeness of the diagnostic methods used.

### ACKNOWLEDGEMENT

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