

# Investigating the contribution of blood-feeding flies to the risk of African swine fever virus spread in France

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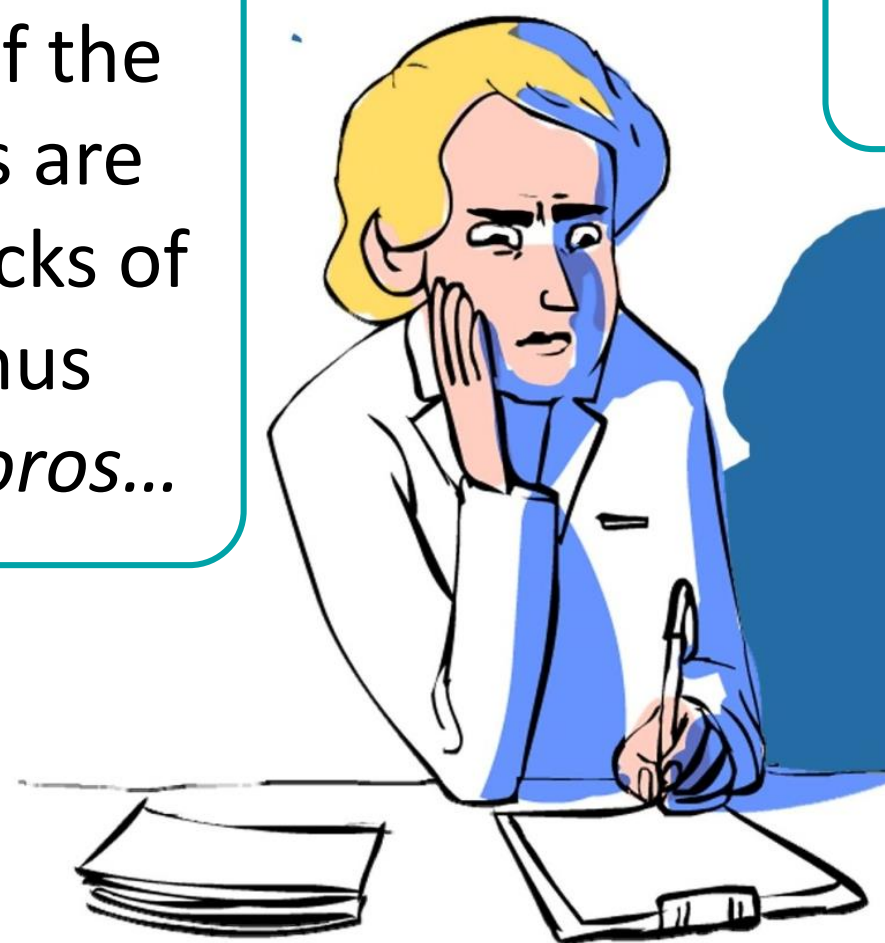
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## Background

Right... The only **biological vectors** of the ASF virus are the soft ticks of the genus *Ornithodoros*...



But they are not present in the European regions affected by ASF. Still, there seems to be a **seasonality** of ASF outbreaks with more notifications during the **summer** when **flies are highly abundant**...

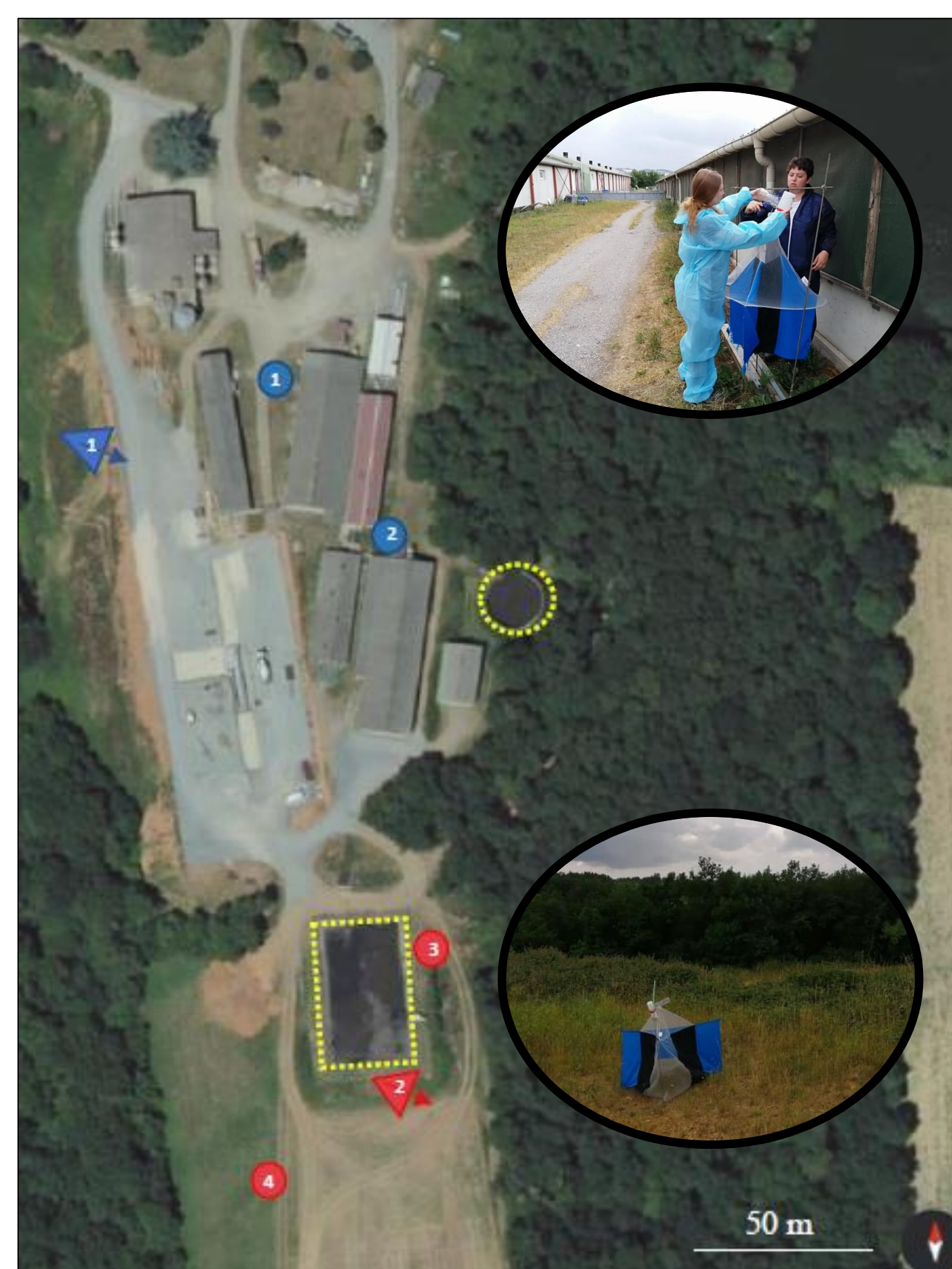
Why couldn't other blood-feeding flies, like *Stomoxys calcitrans* (stable flies) or tabanids, play the role of **mechanical vectors** and allow virus **spillover** between wild boar and domestic pigs? It looks like many scientists start looking into this. And yet, very little information is available on the presence of flies in farms...

## Research questions

1. What is the **abundance** of blood-feeding flies in pig farms?
2. Which **types of farms** are associated with higher blood-feeding fly densities?
3. Can blood-feeding flies act as « **bridge hosts** » between wild boar and domestic pig populations?
4. What is the **risk of ASF virus introduction** into farms via blood-feeding flies?

## Capturing blood-feeding flies in pig farms

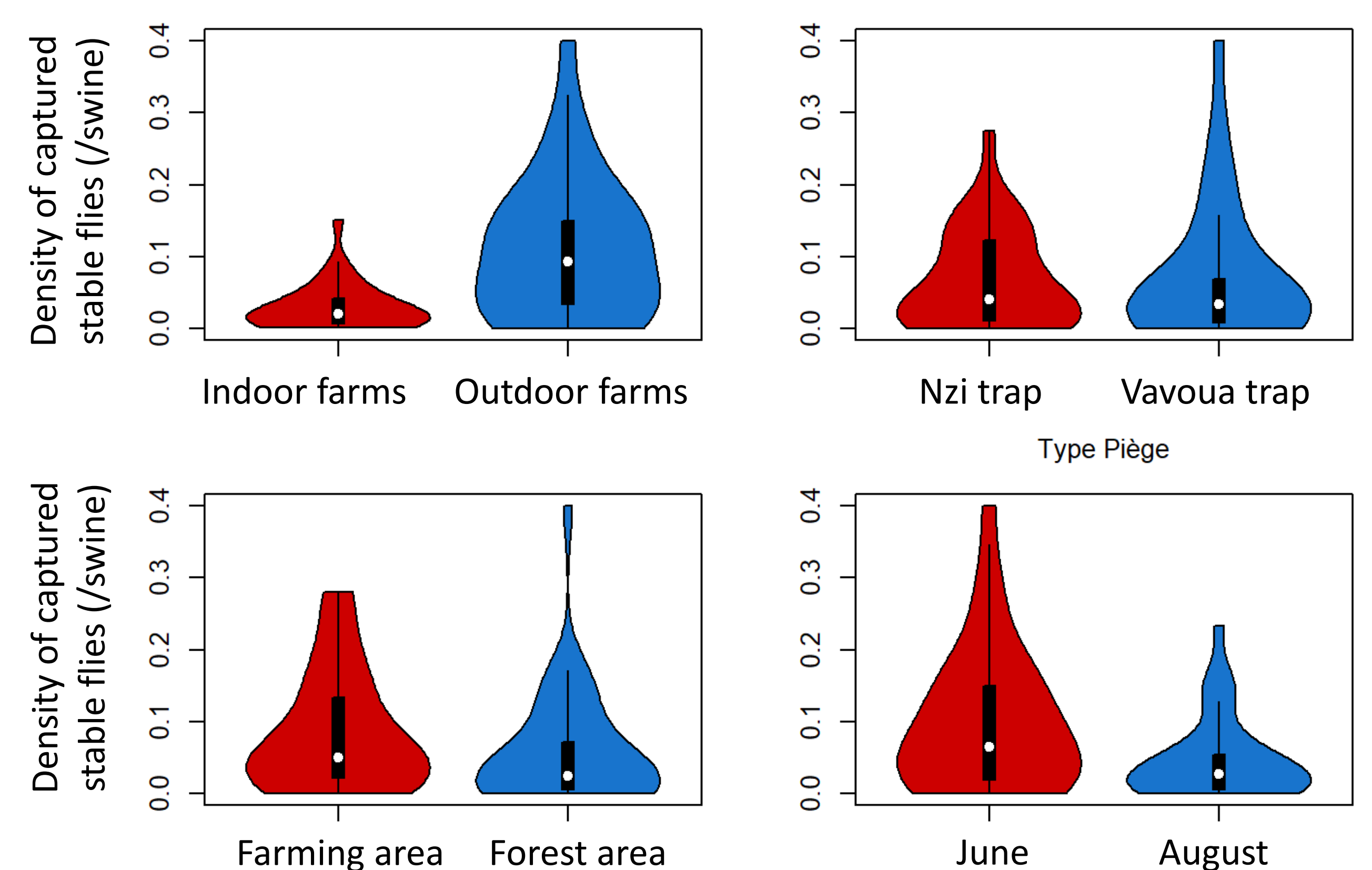
- **8 farms around Toulouse**  
4 outdoor farms  
4 indoor farms
- **2 types of site per farm**  
3 inside the farming area  
3 outside (forest area)
- **2 types of traps per site**  
Vavoua traps (for stable flies)  
Nzi traps (for tabanids)
- **2 capture sessions (3 weeks)**  
June 2022  
August 2022



## Results



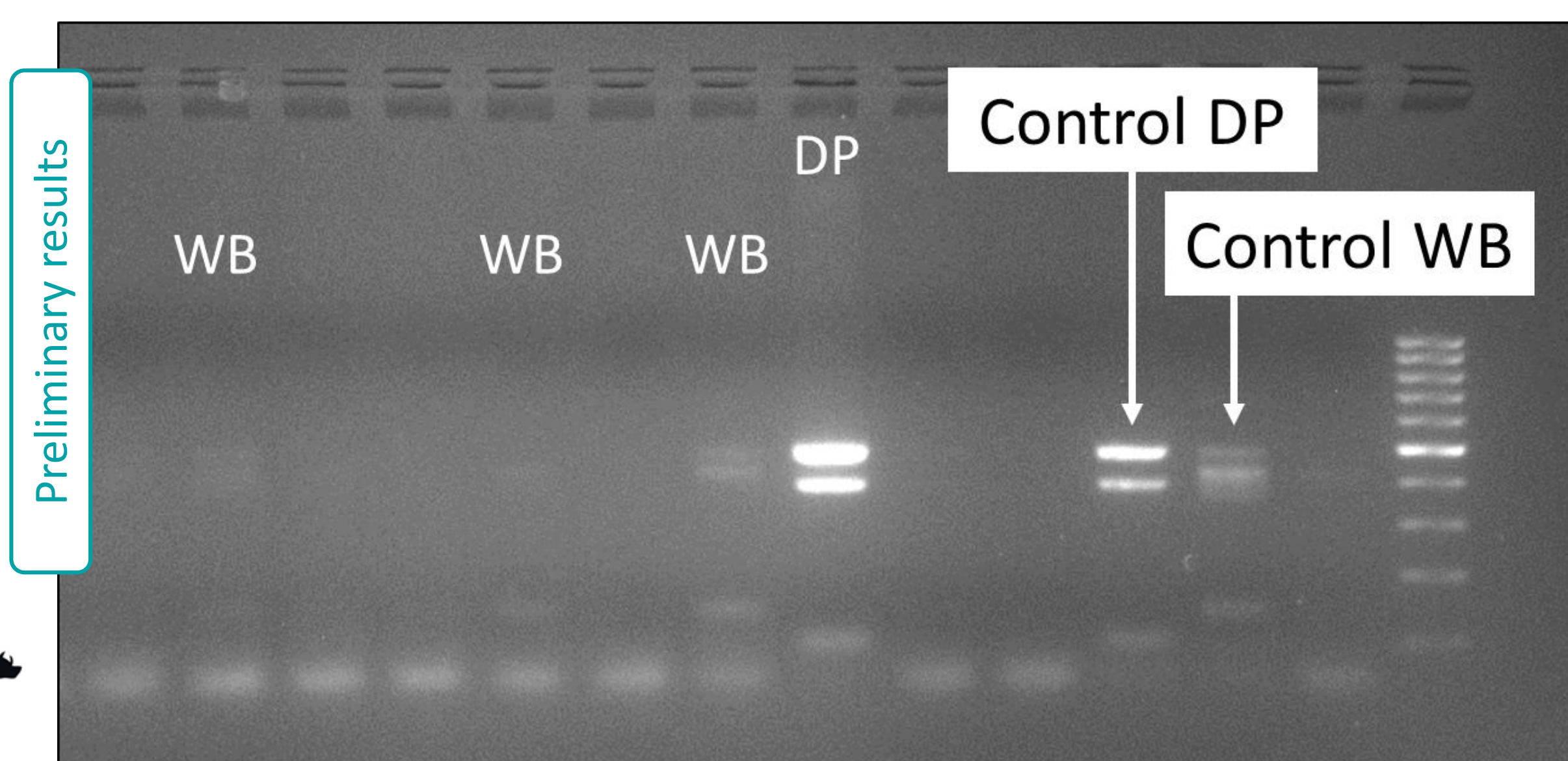
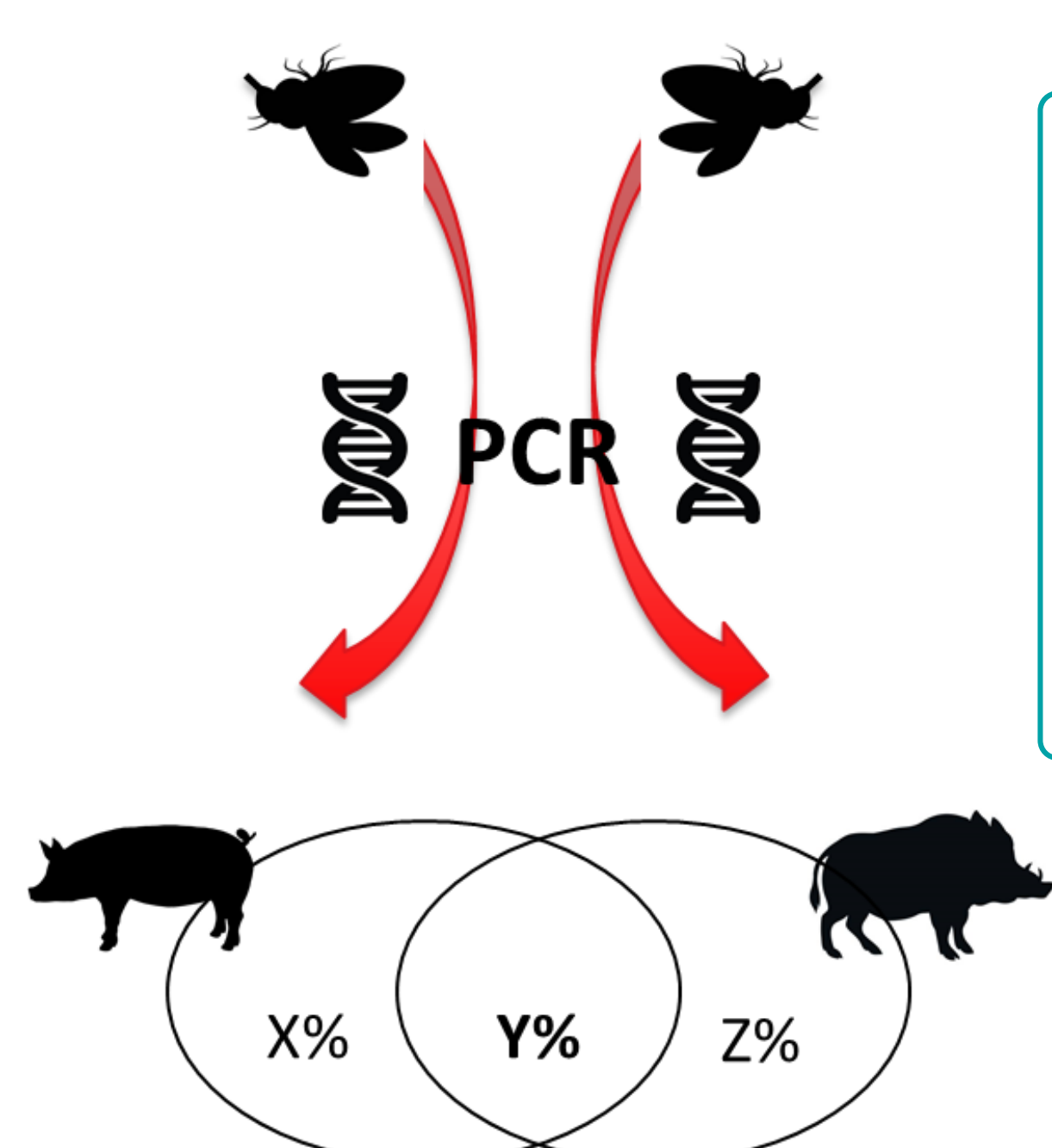
Total number of captured stable flies = **19,480** individuals



## Key messages

1. Stable flies can be found in both outdoor and indoor pig farms and in both farming and forest areas
2. The number of captured stable flies is higher in indoor farms ( $p < 0.01$ )
3. The density of captured stable flies is higher in outdoor farms ( $p < 0.01$ )
4. The density of captured stable flies increases as we get closer to the pigs ( $p < 0.01$ )

## Perspectives and impact



So, blood-feeding flies are present in pig farm surroundings, and at higher densities in outdoor farms.

Also, we are starting to find empirical evidence that stable flies can bring wild boar blood within pig farming areas.

We now need to use this new knowledge to update the estimated risk of ASF virus introduction into pig farms and assess what it means for ASF outbreak management.

