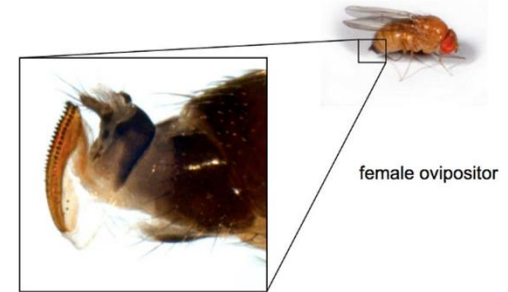


Fundamentals of *Drosophila suzukii* biology in the Netherlands

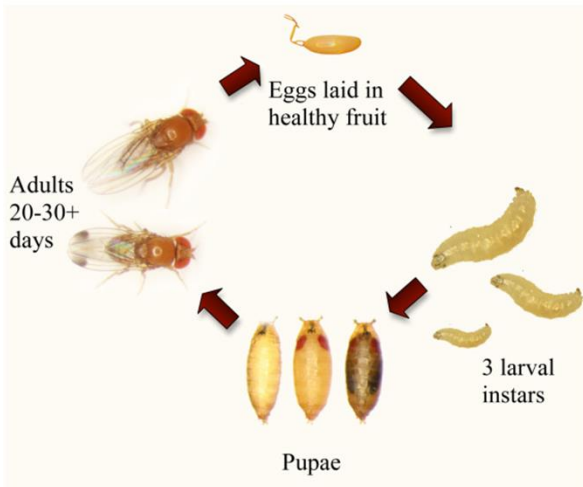
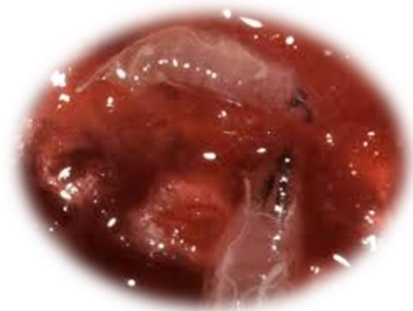
Aurore Panel · Bart Pannebakker · Herman Helsen ·
Bregje Wertheim

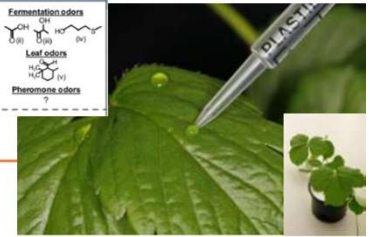
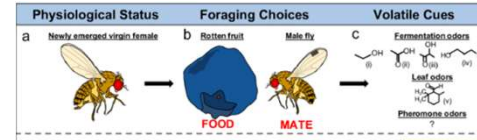


2012



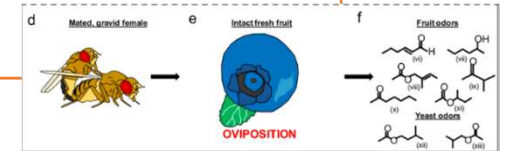
female ovipositor





PhD 3: Improving natural enemies

PhD 2: Volatile based push-pull strategy

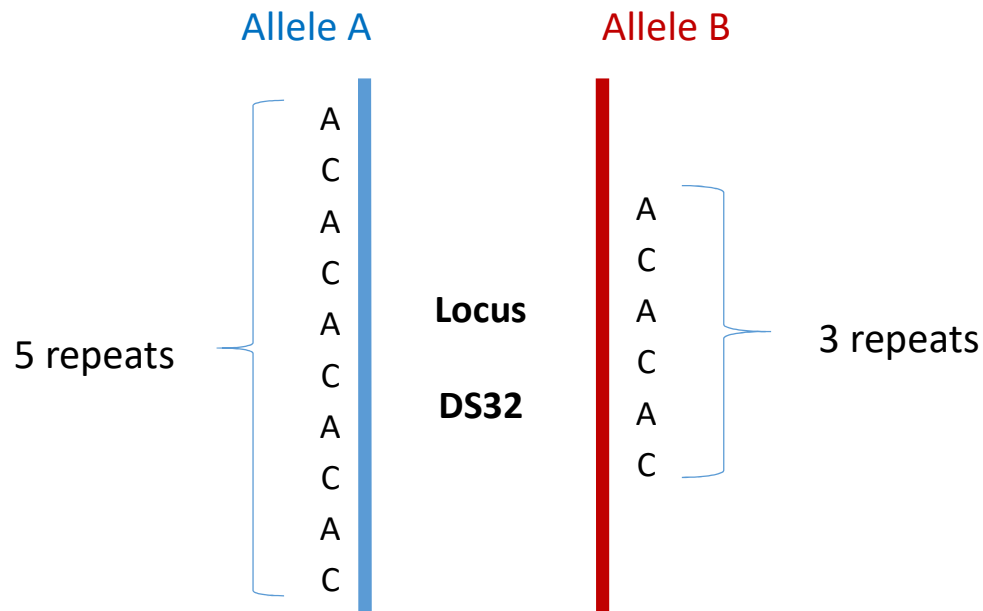
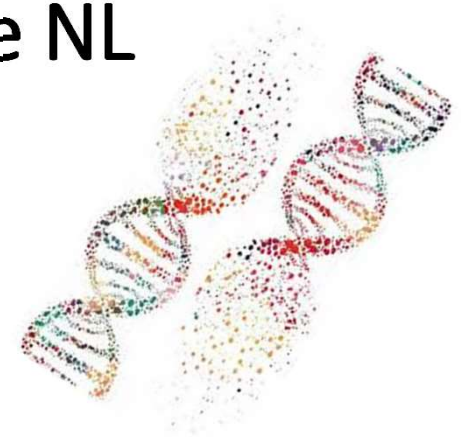


PhD 1: Fundamentals of *D. suzukii* biology

- What population? Genetic structure?
- Population dynamics/seasonal buildup
- Life-history traits (mortality and reproduction)

Population genetics of *D. suzukii* in the NL

=> Microsatellite analysis **in space** and **time**



-2016, 2017, 2018

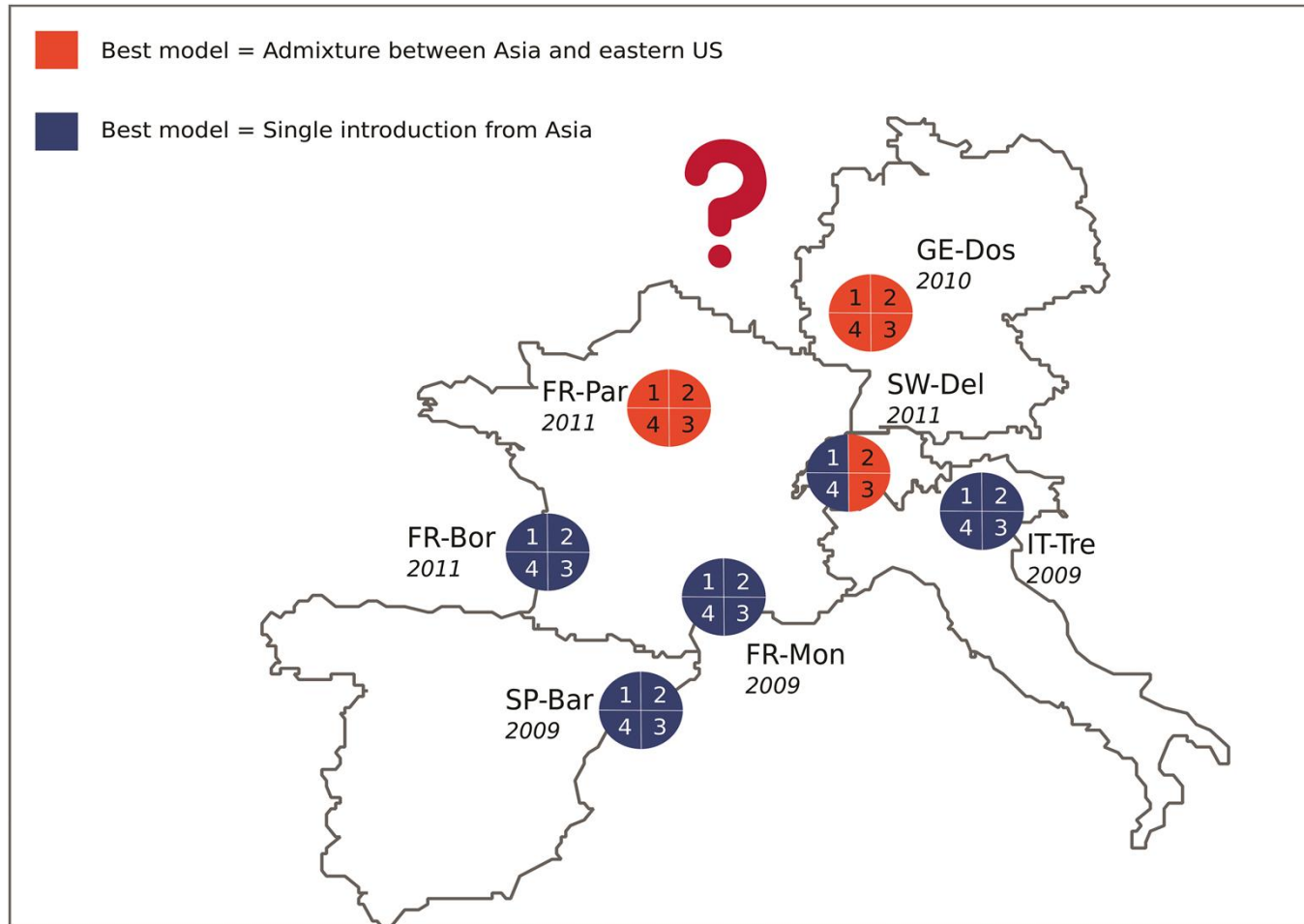
-90 flies/year

-9-10 microsatellites

-located on 2 autosomal chromosomes

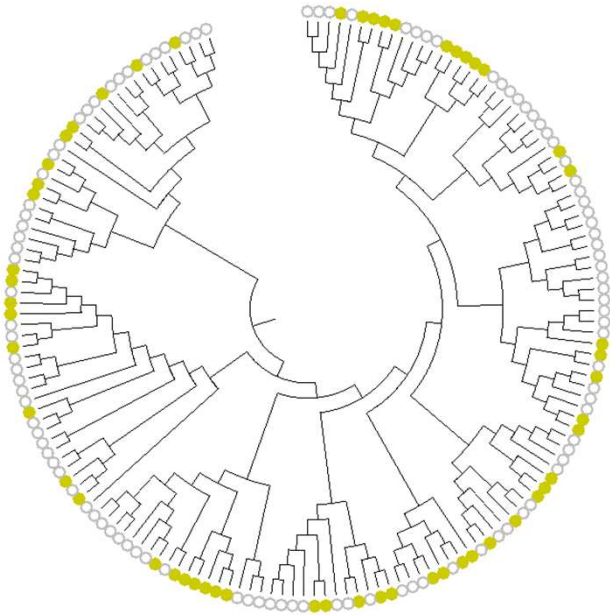
- ✓ Population **origin?** Collaboration—combine Dutch dataset with European dataset
- ✓ **Stable** population?
- ✓ Influx of other populations via **fruit importations?**

Admixed or non-admixed **origin** of *D. sukuzii* in Europe inferred for each sample sites. Potential source ...

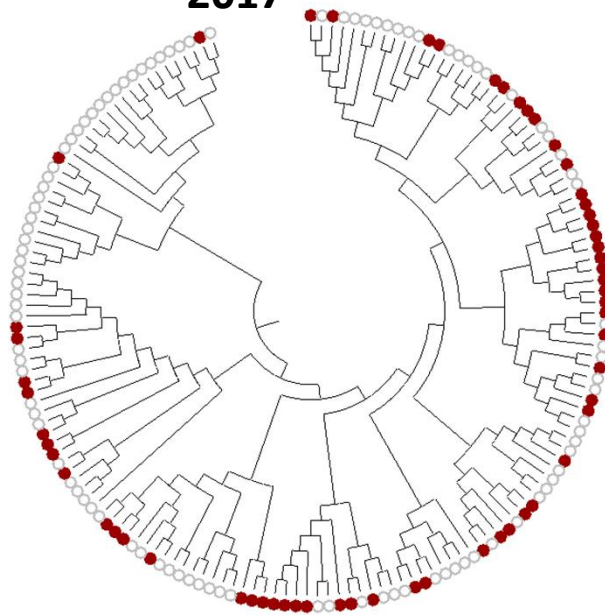


FIRST CONCLUSIONS:

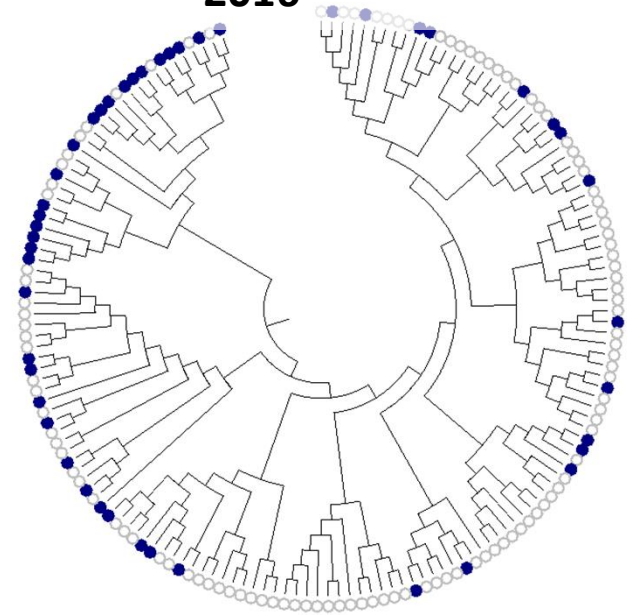
Samples of
2018



Samples of
2017



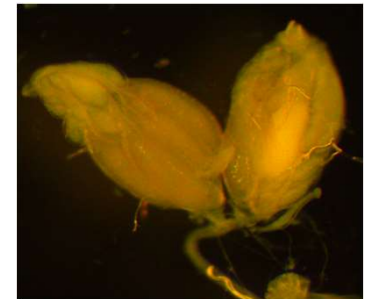
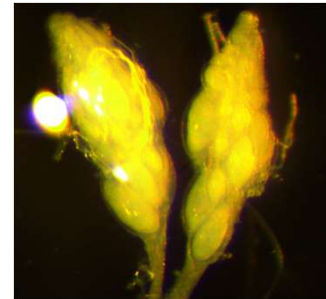
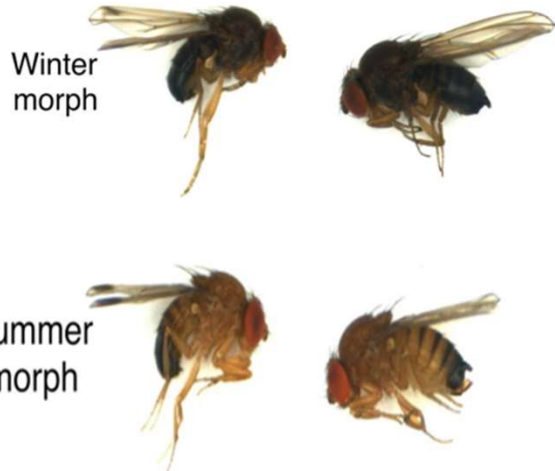
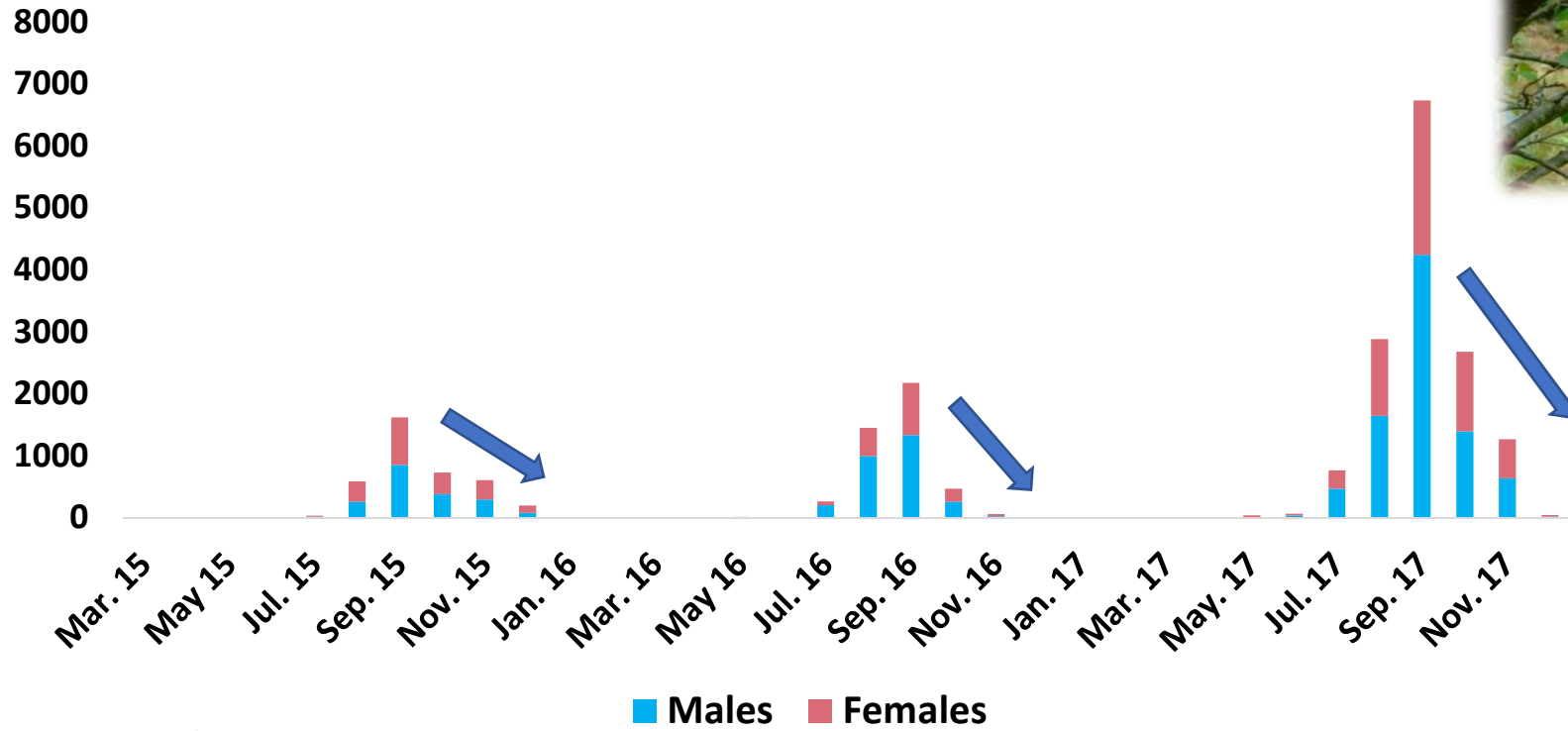
Samples of
2016



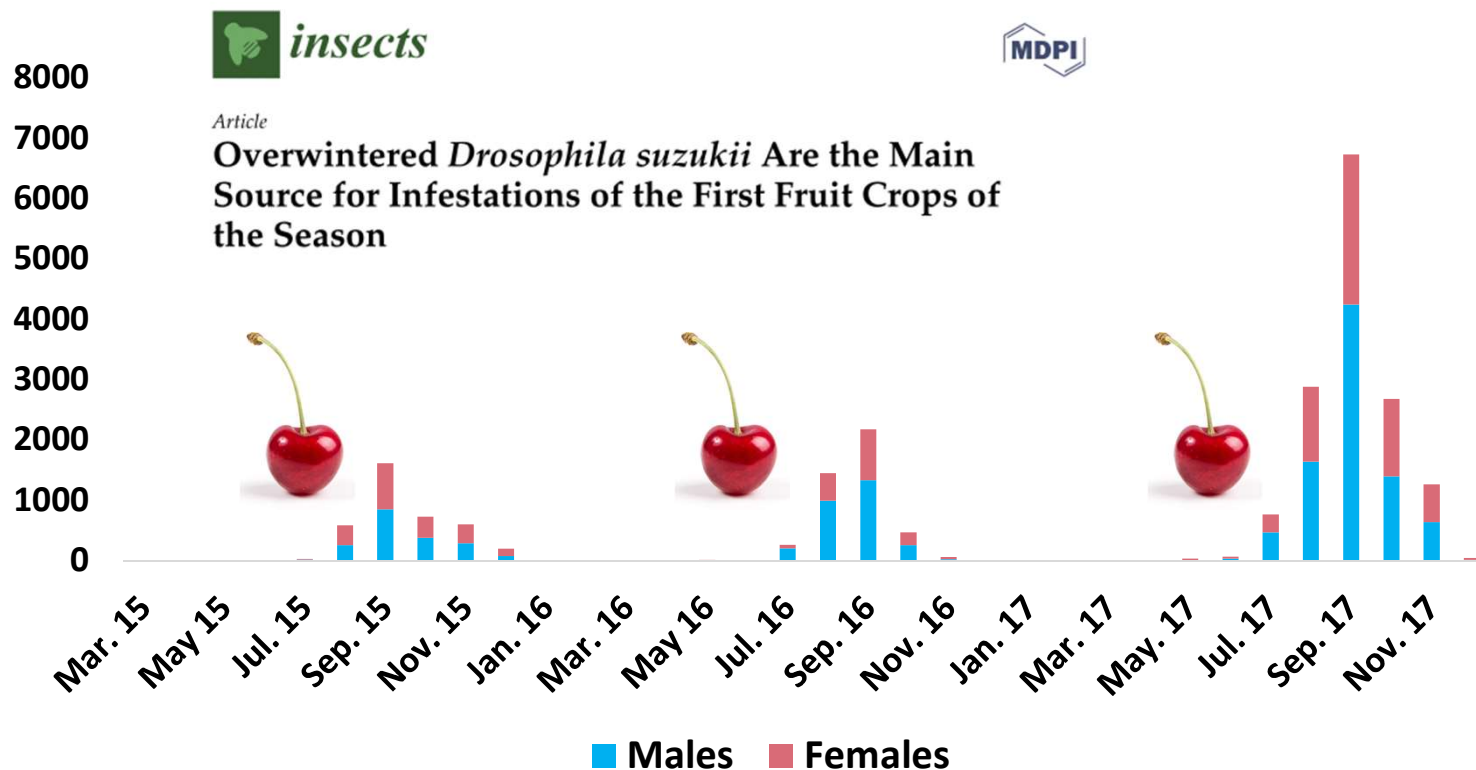
-**Genetically stable** population in the Netherlands

-Probably **local** population...

Mean number *D. suzukii* adults/trap/month in Dutch orchards



Biology and population dynamics of *D. suzukii*



-Field trials, lab assays, field monitoring program

-**Overwintered females** predominantly infest the first commercial fruit crops

Life-histories of *D. sukuzii* morphotypes

Summer morph



-Co-occurrence in **autumn** and **late spring**

-Expected to show **different trade-offs** in their life-history traits (survival and reproduction)

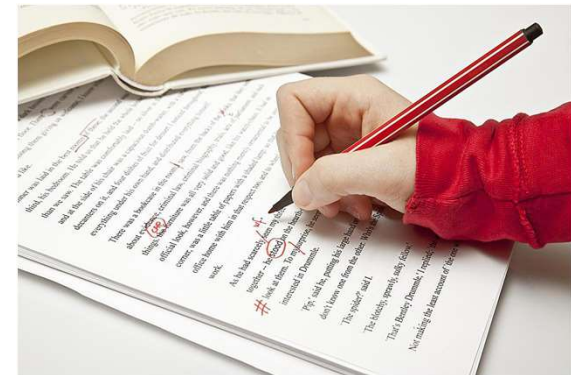
Winter morph



-**Contribution** to the population growth?

-Vulnerabilities?

-Which trade-offs are **most influential for their fitness**?





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Thanks for your attention!

Acknowledgements:

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Dicke · Leo Beukeboom · Ido Pen · Sarah Panel