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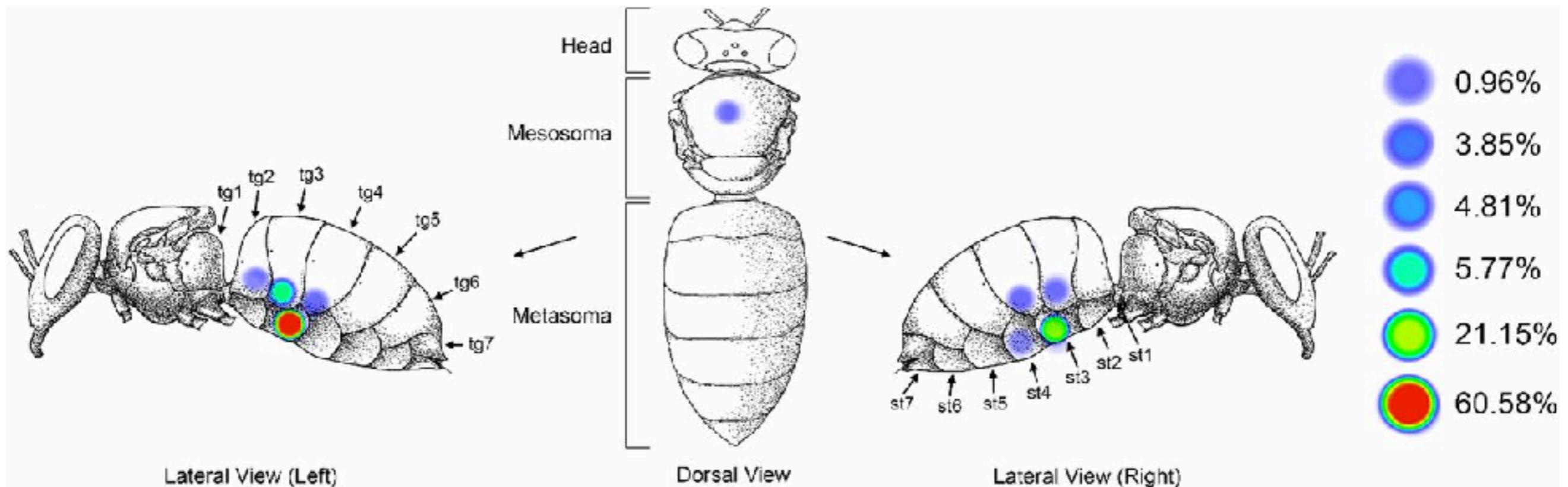
Varroa og behovsbaseret bekæmpelse



Varroa destructor feeds primarily on honey bee fat body tissue and not hemolymph

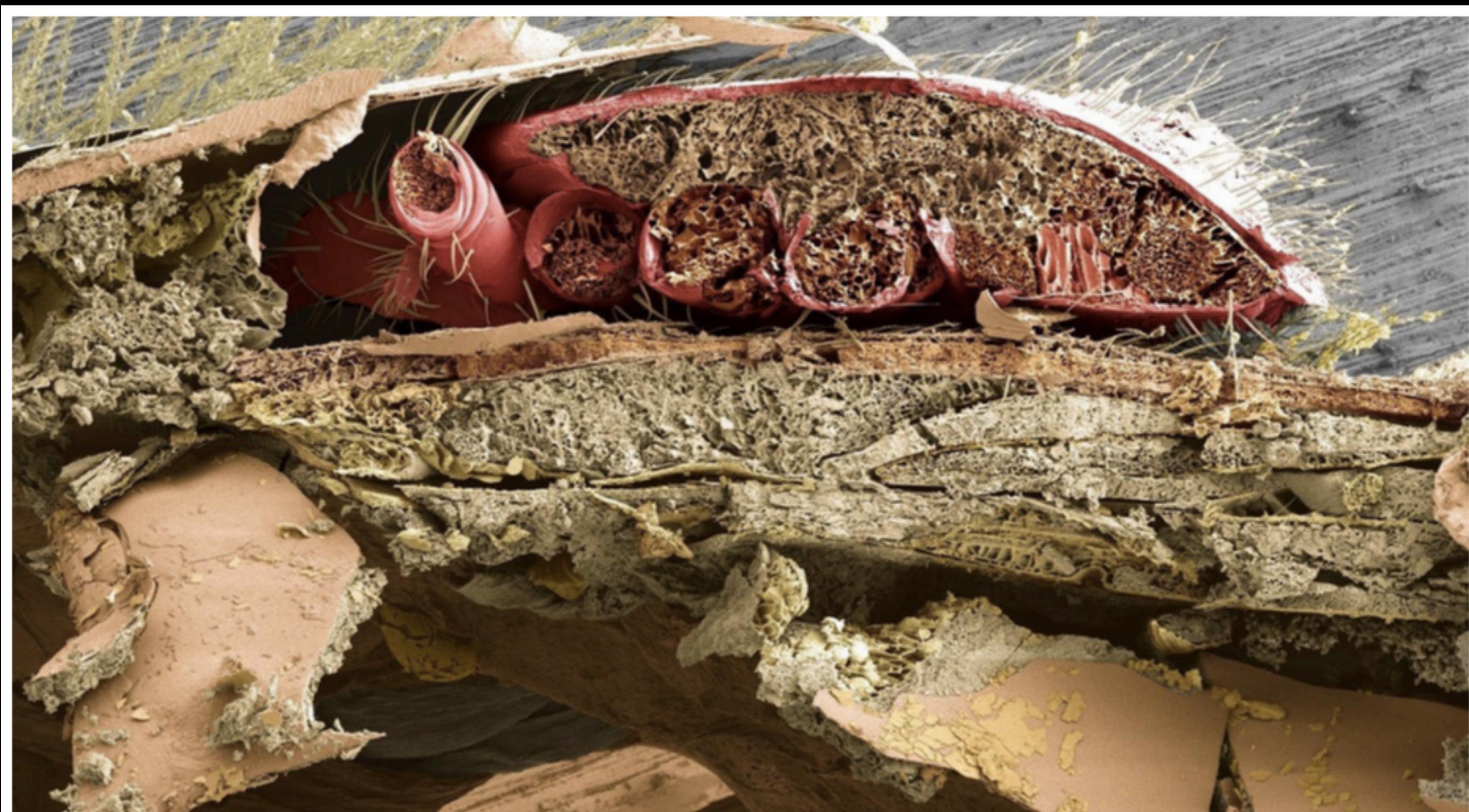
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Hvor sidder varroamiden?

Varroa på en bi



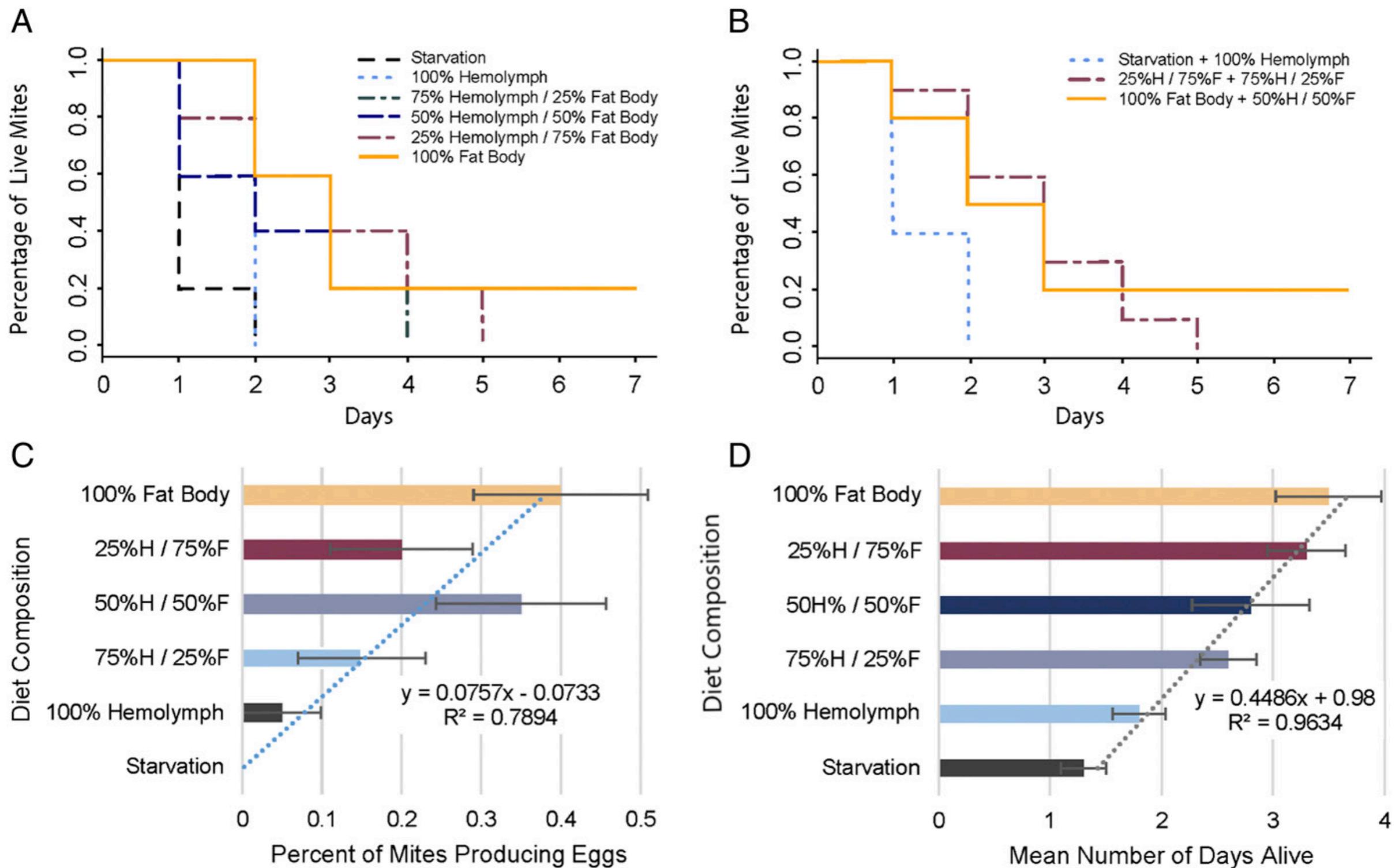
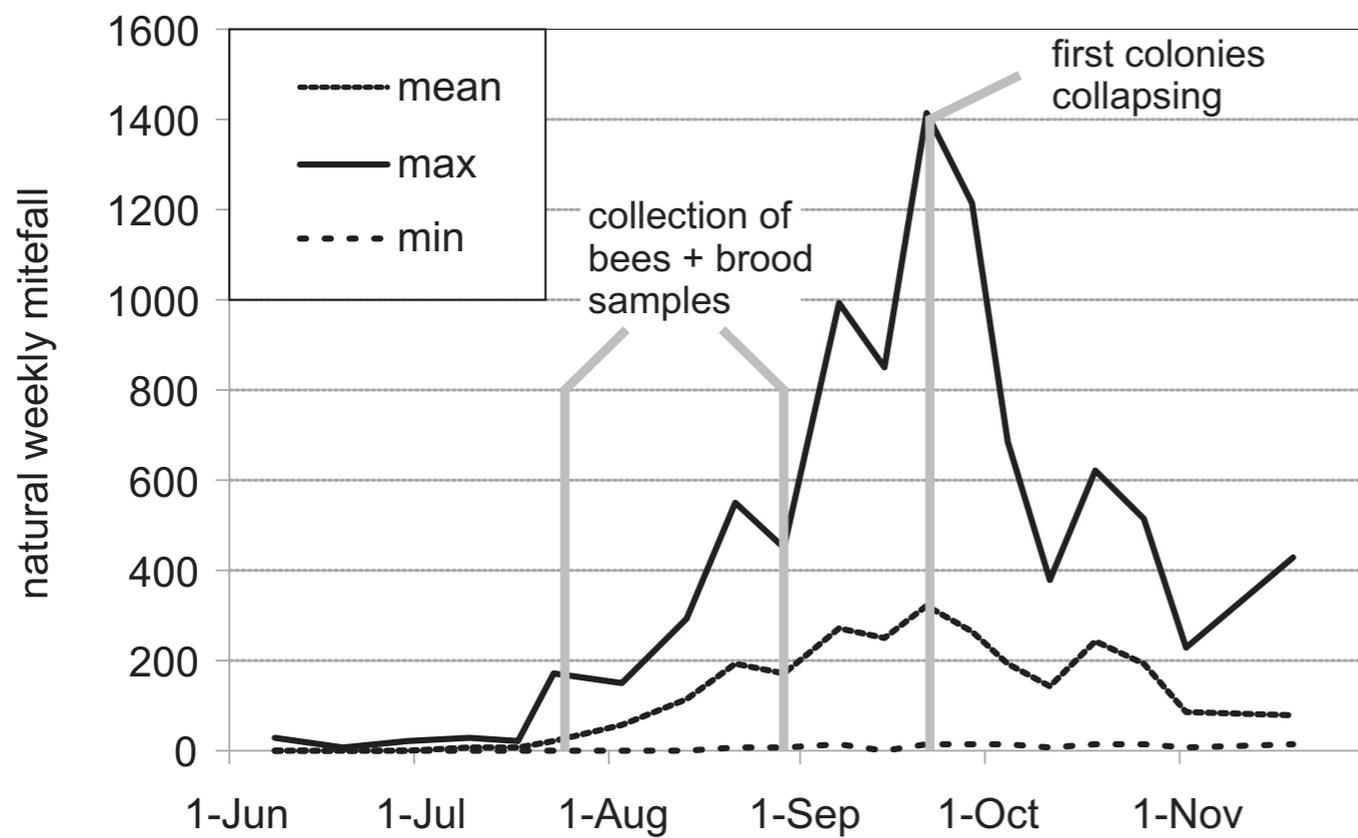


Fig. 7. Mites fed honey bee fat body tissue survived longer and produced more eggs than mites provisioned with hemolymph. High mortality was observed across treatments, likely because of the artificial setting. After 3 d, mites receiving 0%:100% and 25%:75% hemolymph:fat body as their diet maintained survivorship at 60%, while the 100%:0% hemolymph:fat body and the starvation control had already exhibited full mortality. Final sample size consisted of 15 mites per treatment. (A and B) Survivorship curve showing starvation control and all five host tissue diets (A). (B) Representation of the same data with levels combined that show no difference in survivorship. Note: mites provisioned hemolymph and mites given no food showed no difference in survivorship. However, survivorship differed substantially between the hemolymph treatment and all treatments given any level of fat body ($\chi^2 = 16.1$, $P < 0.001$). (C) Egg production differed between treatment diets (ANOVA: $P < 0.004$). A positive linear relationship was observed between egg production and the amount of fat body in the diet of the mite ($R^2 = 0.7894$). (D) Average survivorship of mites differed by diet. Survivorship and the ratio of fat body by volume adhere to a strong positive linear relationship ($R^2 = 0.9634$).

Pathogenesis of varroosis at the level of the honey bee (*Apis mellifera*) colony

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Varroa midenedfald forudsiger dage til kollaps, immunaktivitet, bifamiliens størrelse og vækst.

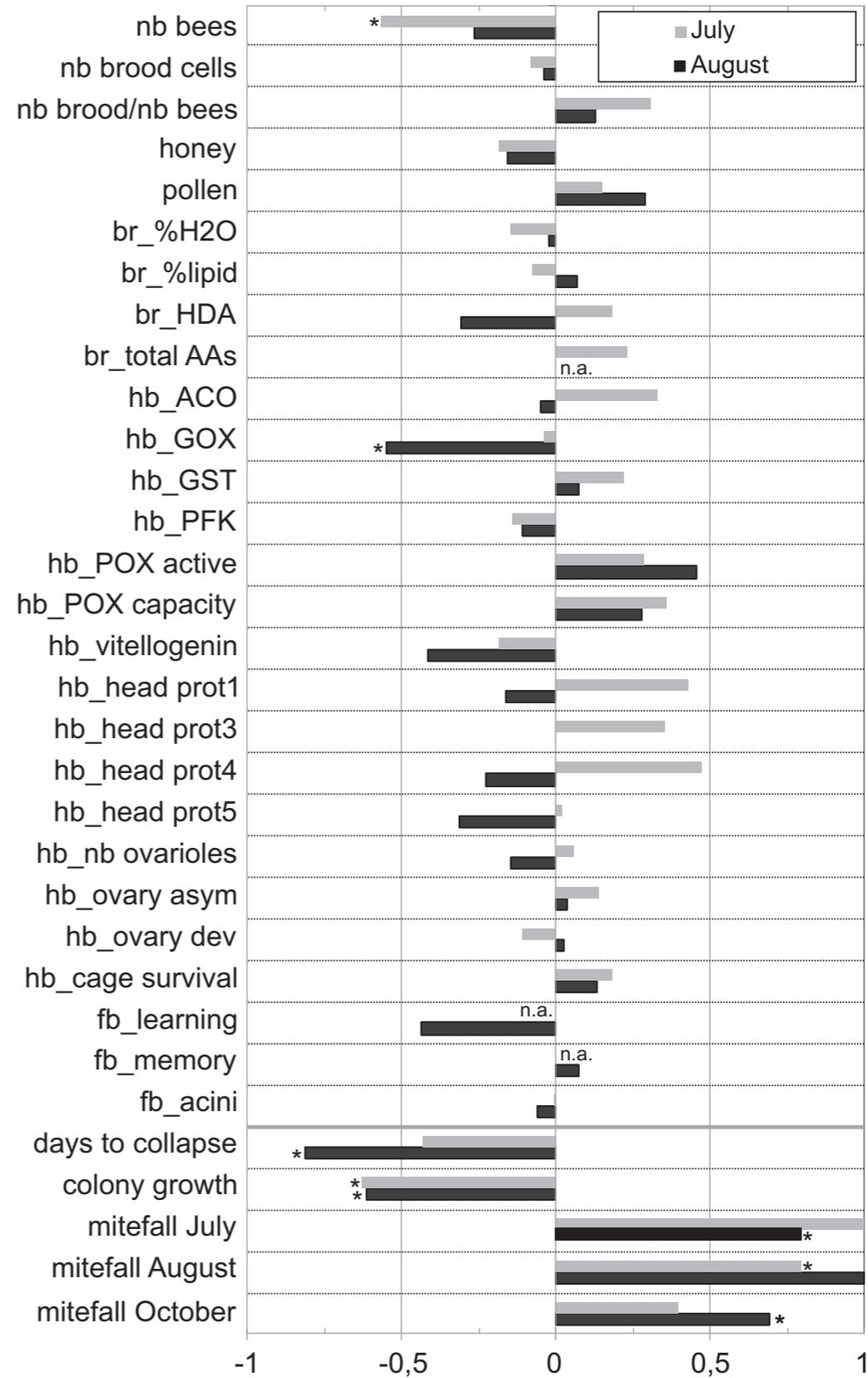
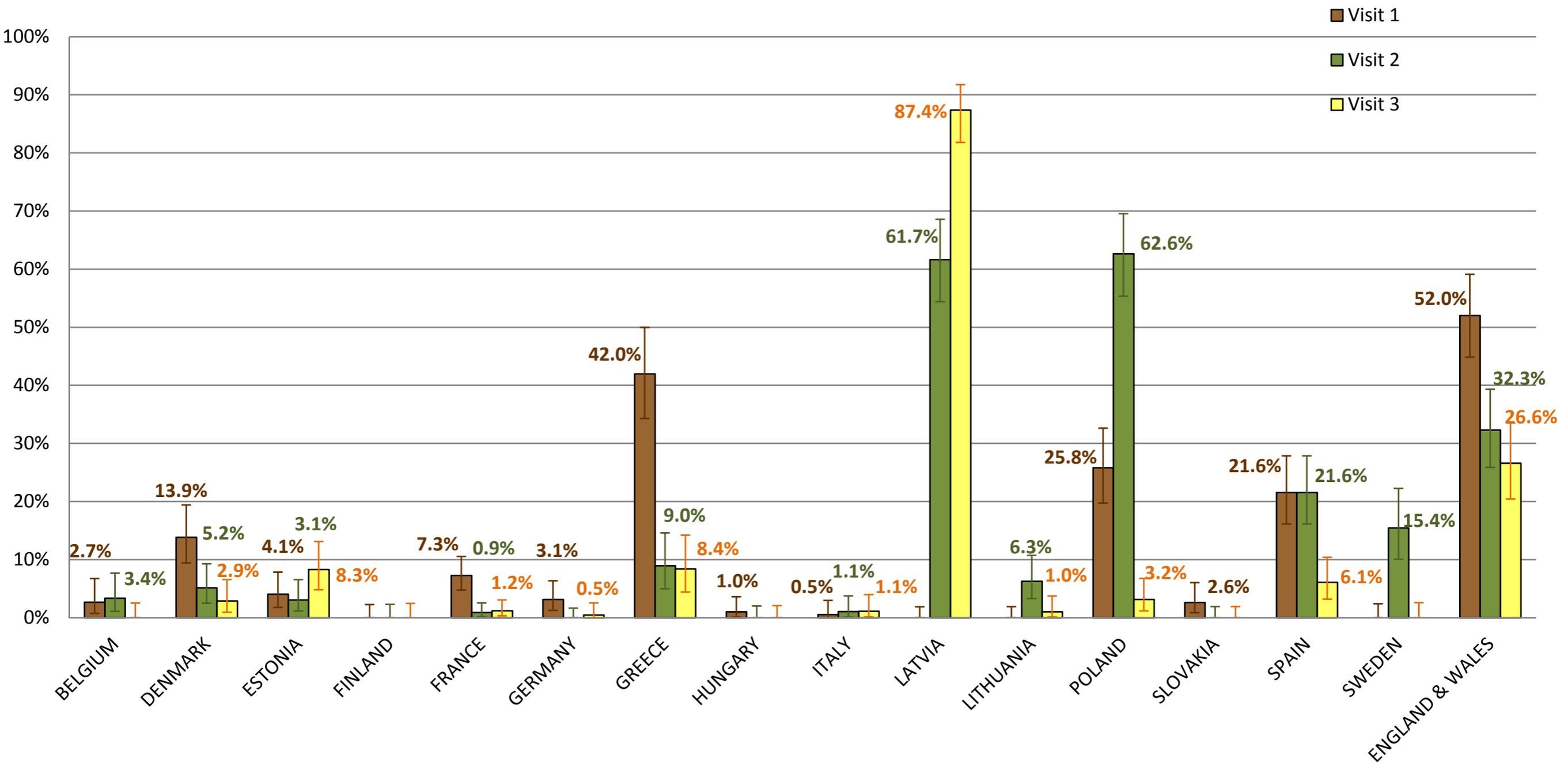


Fig. 3. Correlations between colony physiology and natural mitefall. The charts give Spearman's correlation coefficients between indicators of colony physiology and the indicator of disease progression (natural mitefall). Stars indicate significant correlations ($P < 0.05$) after correction of P-values for multiple testing. Abbreviations of indicators as in [Table 1](#). N.a.: not analysed.

Kan behov bedømmes?

- Husker I Epilobee?
- EUs overvågningsprojekt for honningbi sundhed
- Liste med symptomer:
Varroa på bi, deforme vinger,
bi med lammelse, død yngel,
forvredne larver
- Midetal og virusmål
- Det arbejder vi på





Forekomstst varroasyge

Danmark:

13.9% Efterår, 5.2% Forår, 2.9% Sommer



Varroamider





Deform vingevirus



Misfarvet bi, akut biparalysevirus



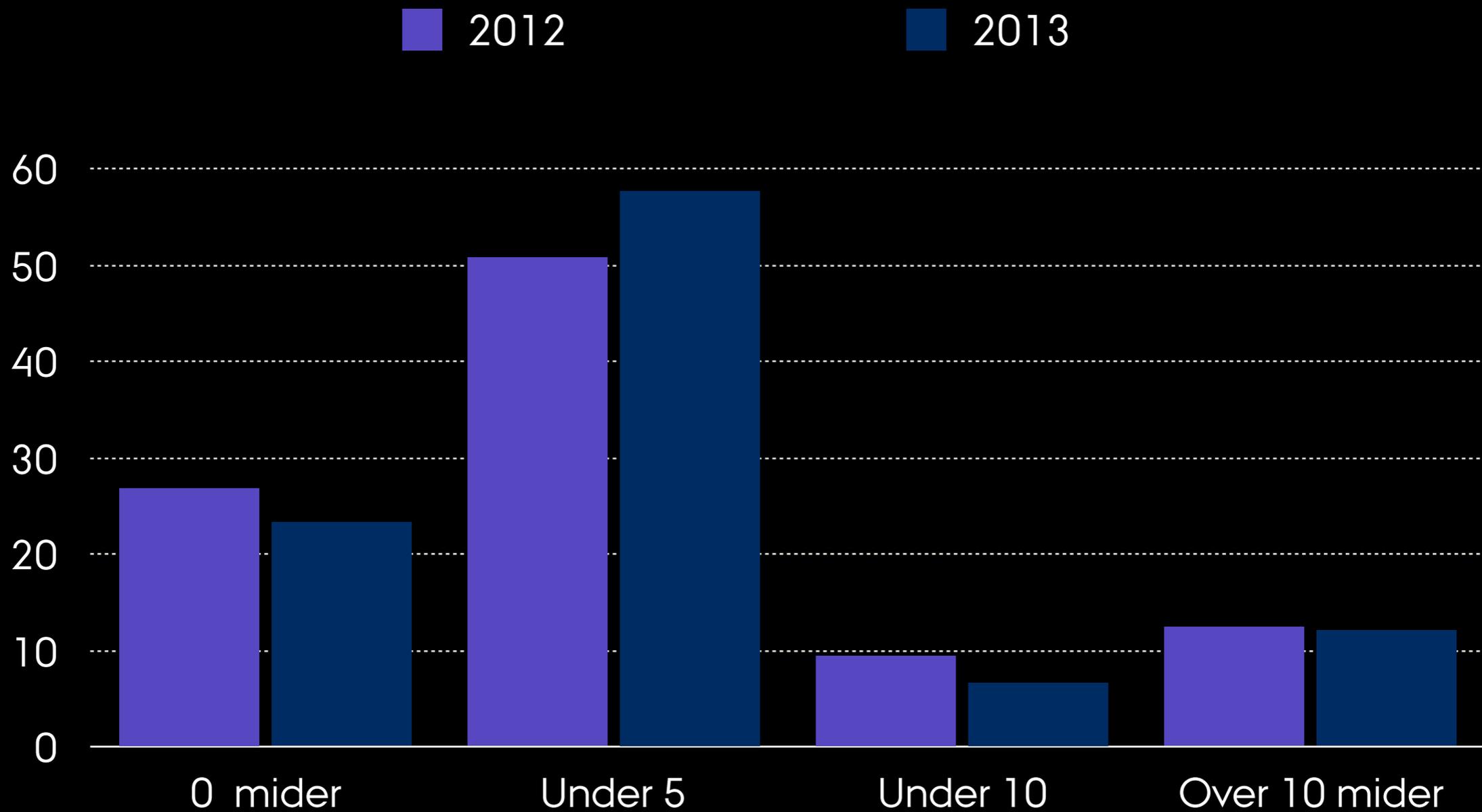
Opbidte cellelåg



Misfarvet yngel

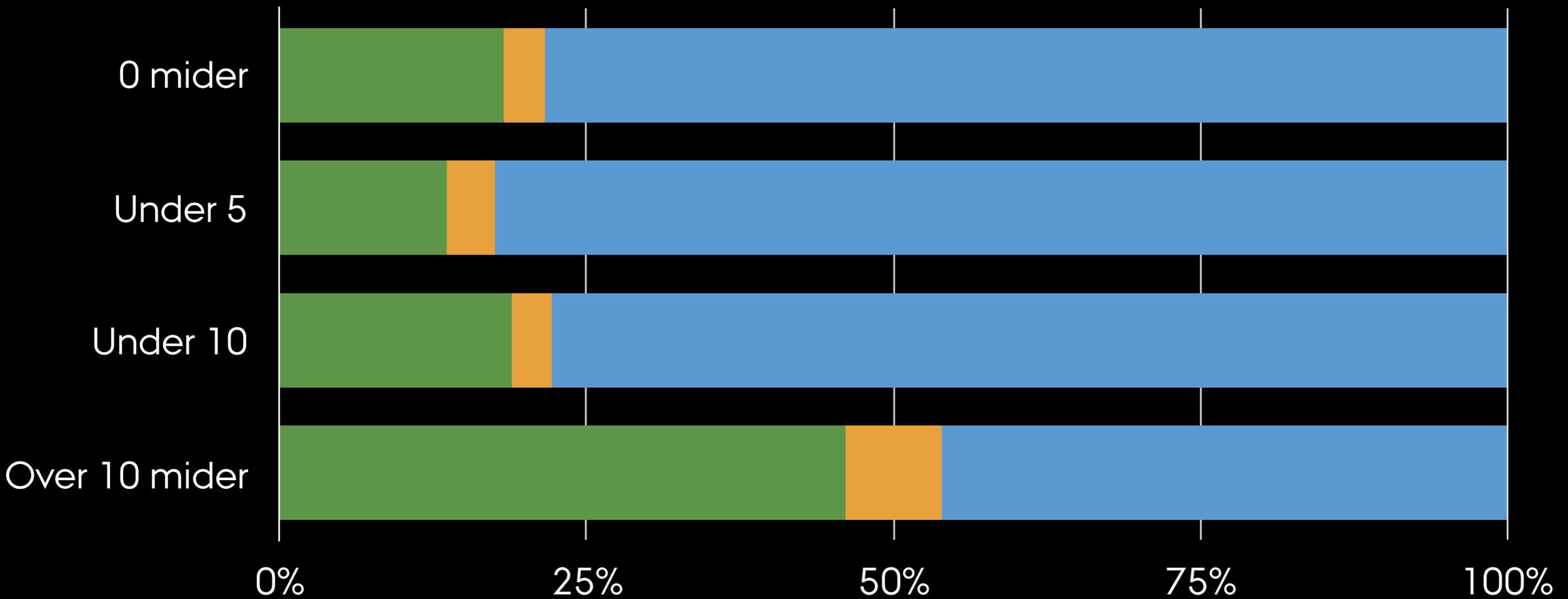


Forekomst af varroa



Varroatryk og overlevelse

■ Forår ■ Sommer ■ Overlever

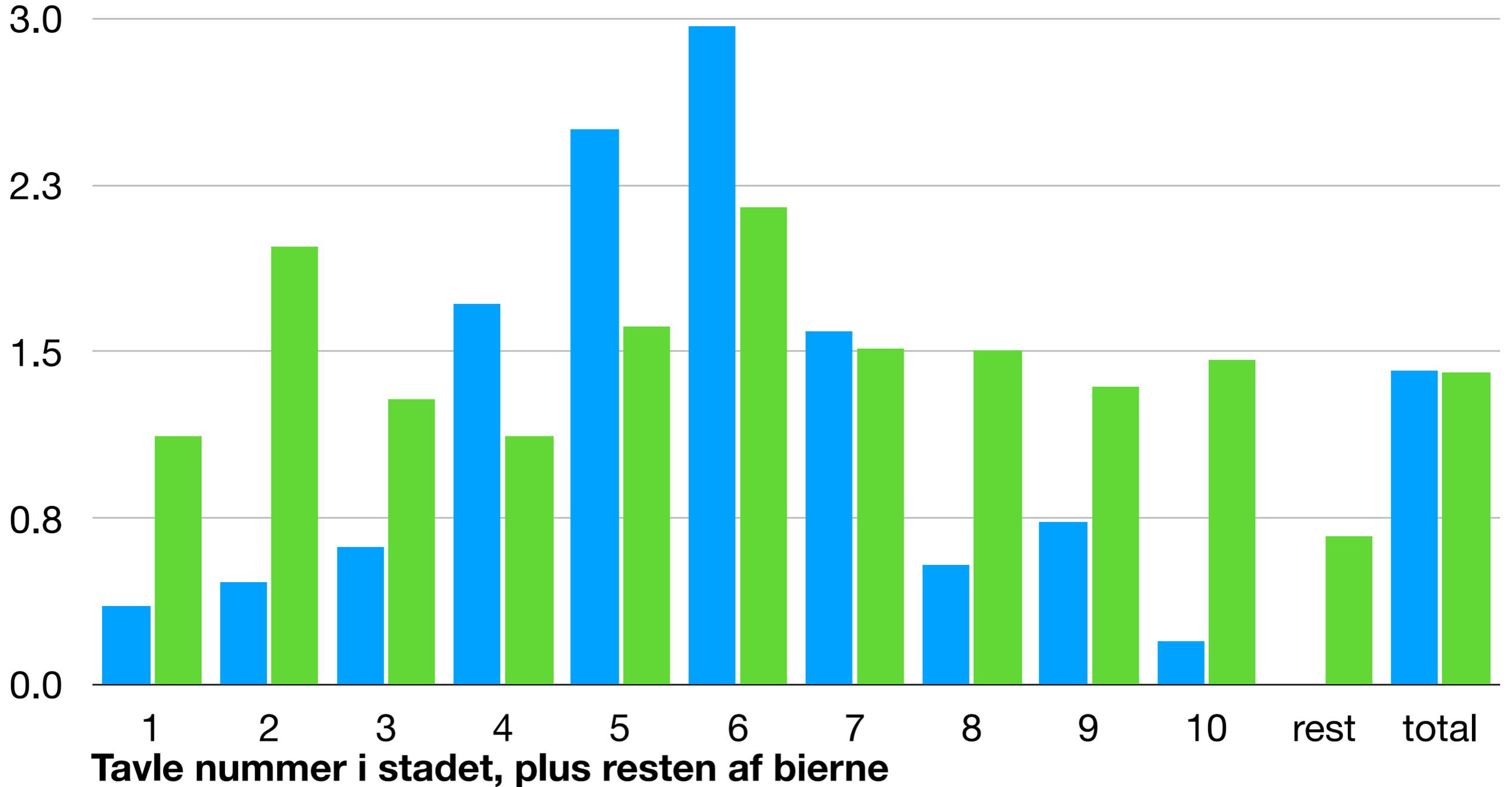


Hvordan tæller I varroa?

■ Stade 1815

■ Stade 1816

Mider/100 bier



Computer baseret

- En bifamilie var udvalgt til videooptagelser
- Rimeligt eller rigeligt mange midler var et krav
- Bifamilien blev eftersat regelmæssigt
- Løbende billeder af symptomer
- Fra 10 rammer med bier til ingenting på 5 uger

Symptomer: Deform vingevirus 1. august og Akut biparalysevirus 15. august



Yngellejet 15. august



Yngellejet 8. september



Yngellejet 8. september



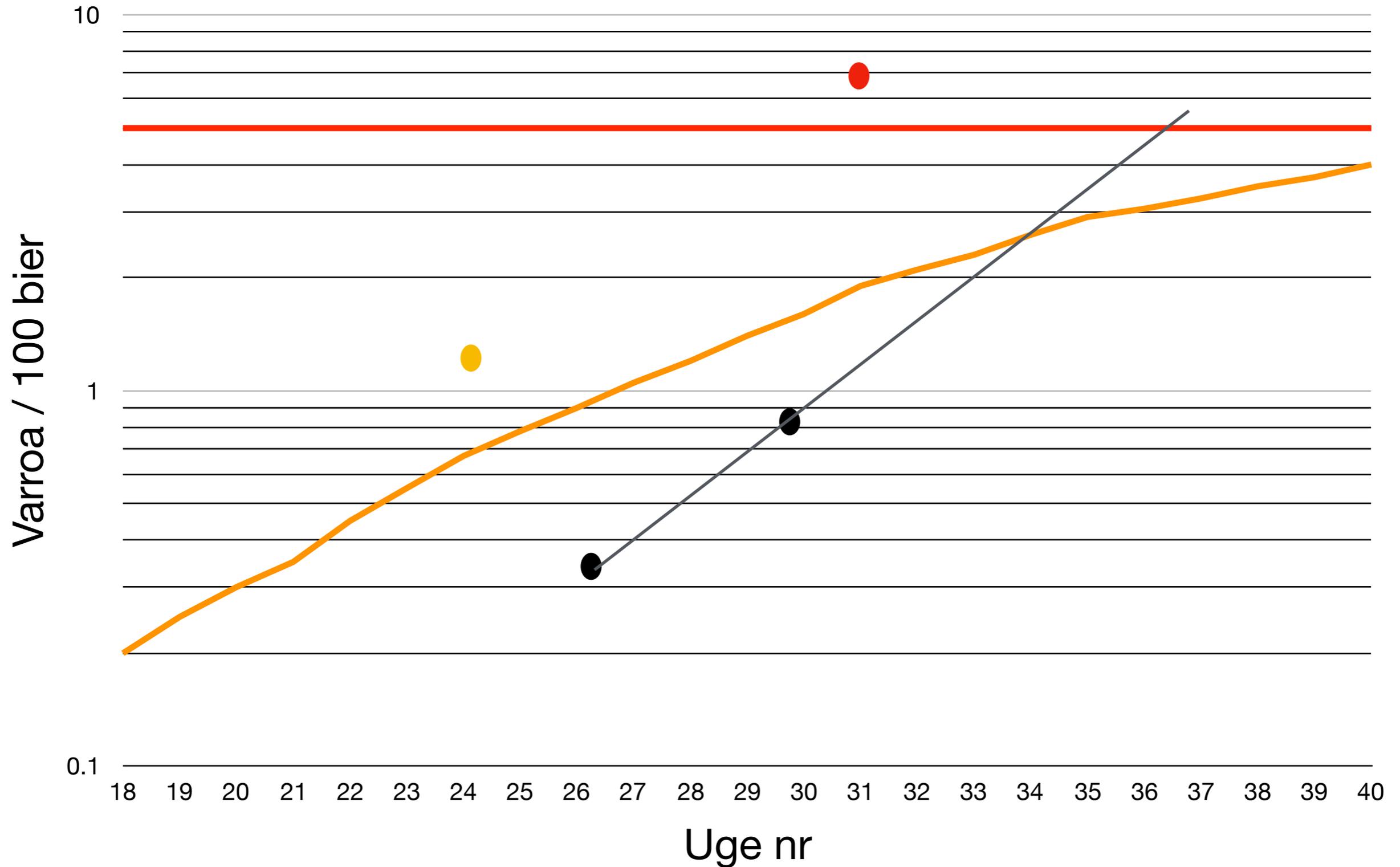
Yngellejet 8. september



Hvornår skal I bekæmpe varroa?

varroa/100 bier

skadestærskel



Tak til:



Det nationale biavlprogram

samt



Ricola Foundation
Nature & Culture

