

Formic Acid Test 2016-17:

AIMS:

1. The absence of brood will change the in-hive temperature and humidity* and will give the opportunity to better understand the influence of internal and external conditions on efficacy of the formic acid treatment on varroa on the bees (NOT in the brood).

However, we cannot exclude the fact that variations in efficiency would be due to a different behaviour of workers due to the presence of brood, other than the simple production of heat.

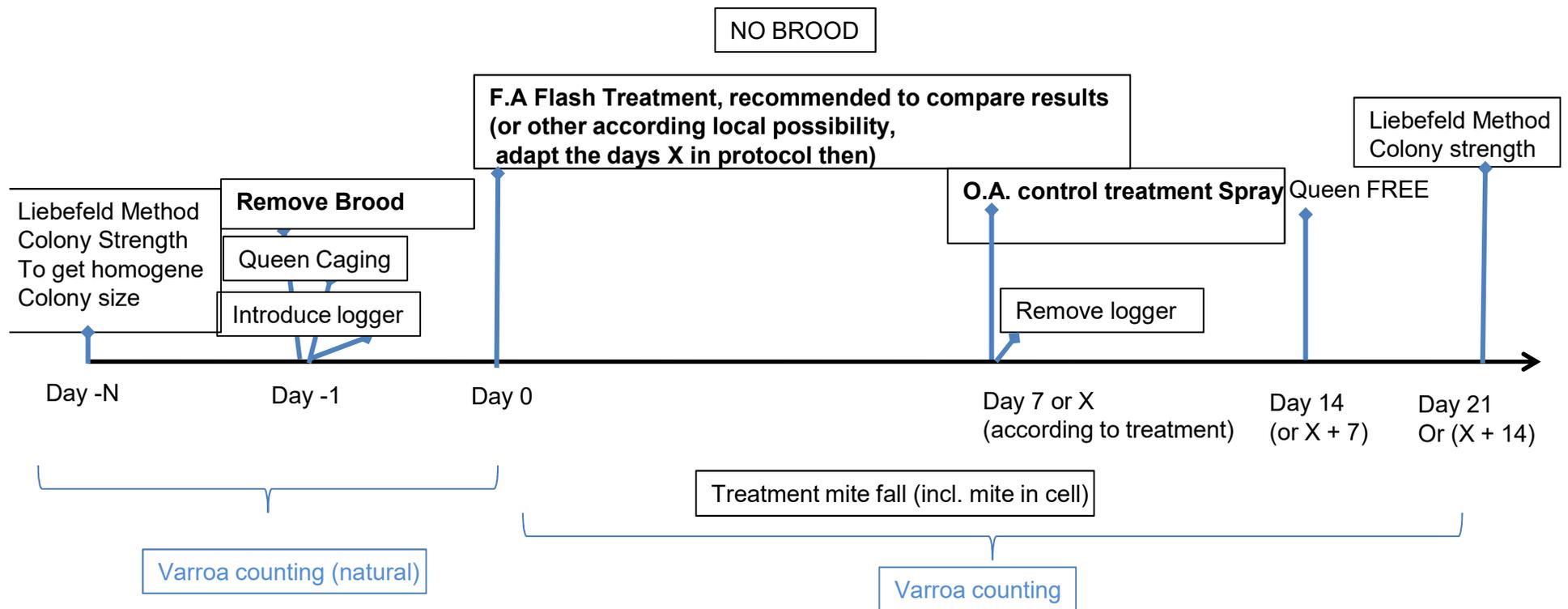
Minimum number of colonies for each experiment is 12 (6 with brood, 6 without brood).

*Note: loggers use is according to the dispenser tests: <http://coloss.org/taskforces/varroacontrol>
open the file "Download the definitive protocol" of the paragraph
"WG 4. Formic acid management (Leads: Benjamin Dainat and Giovanni Formato)".

The flash treatment is done on top of the colony with 60% Formic acid according Liebefeld protocol provided to the group in the same time than this ppt.

Experiment

Influence of the presence or absence of brood on the climate of the hive Humidity and Temperature and efficacy of FA on the Varroa on the bees.

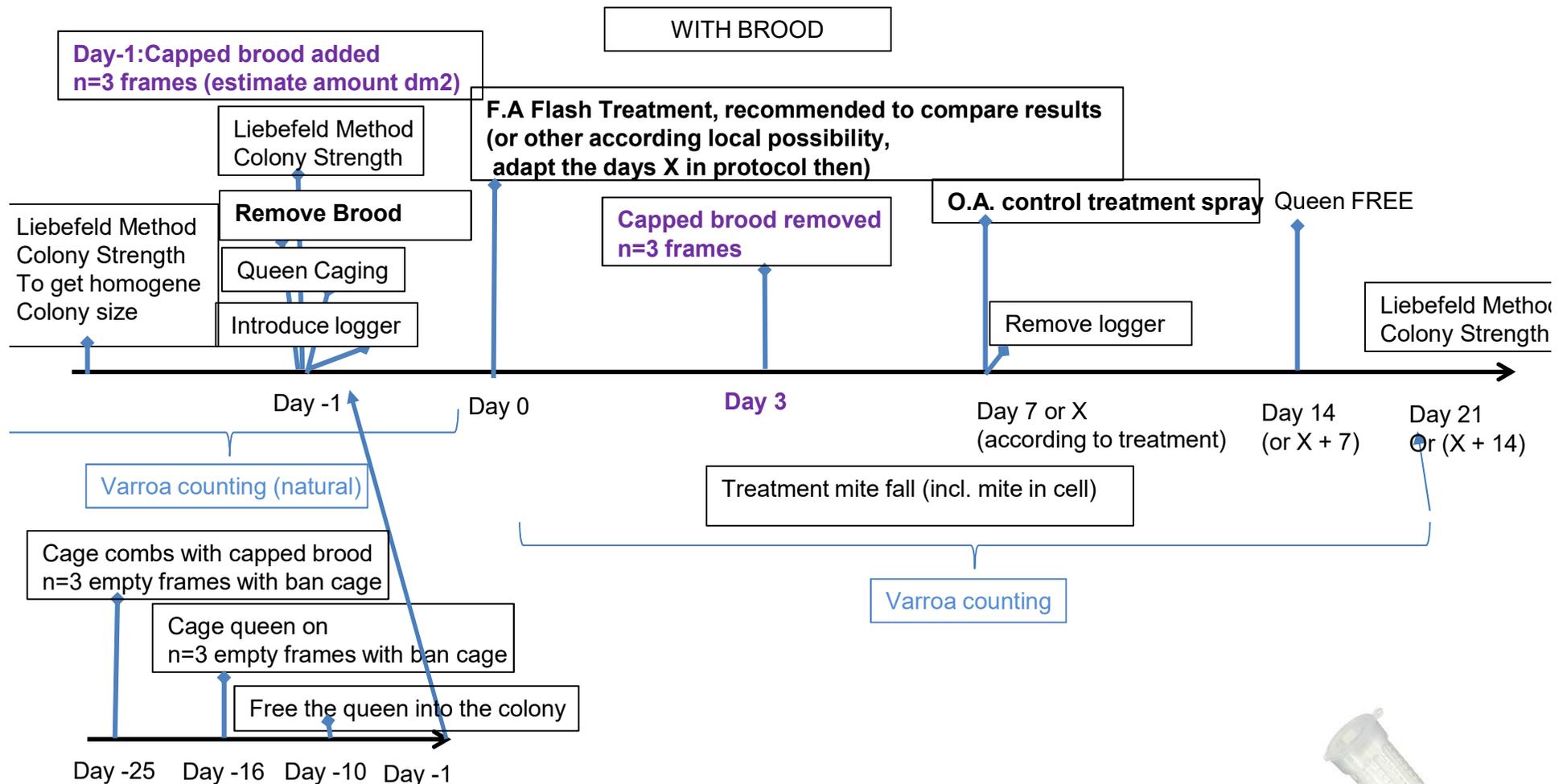


Where put the Loggers? At the place where the brood would have been normally: 1 middle of the brood combs nest, where the comb with the most brood in the middle , 1 Logger next to the flash treatment.

To protect the logger you can use plastic cage of queen rearing:



No need of control/untreated Group! We don't test the efficacy of FA in itself. This is known already. We just want to know the effect of brood presence or not on T° and H° and if this impact negatively or positively the efficacy of FA on the Varroa on the BEE themselves.



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Here, No need of control/untreated Group neither! We don't test the efficacy of FA in itself. This is known already. We just want to know the effect of brood presence or not on T° and H° and if this impact negatively or positively the efficacy of FA on the Varroa on the BEE themselves. **WE DON'T WANT HATCHING BROOD and No OPEN BROOD to avoid varroa coming out of hatching brood or phoretic one attracted in open one. Therefore we remove all the brood present, and introduce instead capped brood (NO open brood) produced in other colonies with ban cage for the queen where we know for sure there will be not hatching.** Added brood is removed before emergence in order not to increase the amount of varroa in the test colonies. The alternative manipulation of removing brood in one of the groups is not suitable since it would

Remarks

Oxalic acid treatment should be spray! For any reason it is not possible then use trickling with 60g / L oxalic acid dihydrat so 4.3% oxalic acid solution. Note this in the remarks of the standardized result excel file.

This excel is the same than the dispenser trial we did and available at coloss.org