

**Fig. 1** Average mass (g) of pollen collected by local and Californian foragers during weekly 24-hour pollen trapping periods. Colonies were treated with 1.11 specific gravity formic acid between the first and second samplings on 6 June 2016. Bars indicate standard error. Asterisks indicate significant values at the P≤0.05 level.

**FORMAT of in text reporting for a RM-ANOVA:**

*F*(DfTime, Dferror) = F-statistic, *p*-value

**Pollen:**

*Time within Groups: F*(1,1) = 5.084, *p* = 0.0252



**Fig. 2 (a)** The curve of mean colony weight (lbs) of local and California colonies over time (days after requeening). We starting taking measurement on 14 June 2016, 11 days after we requeened the colonies.

**(b)** The curve of the mean number of brood frames in local and Californian colonies over time. The first time step (3.9 brood frames for both groups) was measured on 30 May 2016, four days before we requeened the colonies on 3 June 2016. Vorroa mites were treated for using formic acid between T2 and T3 on 6 June 2016. Bars indicate standard error. *Asterisks* indicate significant values at the P≤0.05 level

**Mass (a):**

*Between Groups: F*(2,1) = 7.84 , *p* = .00836

*Interaction within Groups (California/Local): F*(3,3) = 4.958 , *p* = .00328

**Brood (b):**

*Between Groups: F*(4,1) = 11.748 , *p* = .00169

*Interaction within Groups (California/Local): F*(4,4) = 7.99 , *p* = 9.27e-06



**Fig. 3** Levels (PCR band intensity) of DWV, BQCV, and IAPV in local and Californian colonies over two time steps. Fifty-bee samples at T1 were collected from the brood chamber on 15 June 2016 (12 days after requeening), and samples at T2 were collected on 13 July 2016 (40 days after requeening). Bars indicate standard error. *Asterisks* indicate significant values at the P≤0.05 level

**DWV:**

*Interaction within Groups (California/Local): F*(1,1) = 5.084 , *p* = .0316

**BQCV:**

*Time within Groups: F*(1,1) = 148.971, *p* = 2.25e-13

**IAPV:**

*Between Groups: F*(1,1) = 12.153 , *p* = .00131

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**Fig. 4** Mean *Nosema sp*. levels (spores per bee) in local and California colonies over time (days after requeening with the experimental queens). Fifty-bee samples were collected from peripheral nectar combs in each colony. Bars indicate standard error. *Asterisks* indicate significant values at the P≤0.05 level

**Nosema:**

*Between Groups: F*(2,1) = 7.957 , *p* = .00794

*Interaction within Groups (California/Local): F*(2,2) = 8.195 , *p* = 0.000792