Table S3. Entities and state variables of colony models. 'Age' refers to age cohorts, characterized by their age in days and number of individuals; N: number, i.e. abundance; Sex: distinction between worker and drone larvae.

MODEL / ENTITY	Omholt 1986	deGrandi-Hoffman *et al.* 1989	Martin 2001	AlGhamdi & Hoopingarner 2004	Thompson *et al.* 2005/2007	Schmickl & Crailsheim 2007	Becher *et al.* 2010	Khoury *et al.* 2011
Winter bees	N						Age	
Queen		Age, sperm		Age				
Eggs	N[1]	Age	Age	Age, sex		Age	Age	
Larvae (brood)	N	Age, sex	Age, sex	Age, sex	N, sex	Age		
Pupae (sealed brood)	N		Age, sex			Age		
Drones	N	Age	Age	Age			Age	N
In-hive bees		Age	Age	Age	N[4]	N: N nurses, N nectar processors	Temperature at emergence	
Foragers		Age			N	N: N pollen foragers[2], N nectar foragers	Age	N
Comb						N of empty and brood cells; Stores of nectar, pollen, honey	N of empty and brood cells	
Environment		Temperature, Photoperiod, Windspeed, Rainfall	Temperature, Photoperiod, Windspeed, Rainfall	Temperature, Photoperiod		Season, Rain, Temperature		
Invaded mites			N					
Phoretic mites			N	N				

[1] No equations provided
[2] Distinguished between workforce (available) and active (demand driven)