APIMONDIA SCANDINAVIA 2025
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PP-114 [Bee Health

Primal Bee®

Treatment-Free Beekeeping: case study in Negev Desert

G. Riganti, A. Gamberoni, T. Moldovan, E. Nir, Y. Melman, J.R.Graham

Symbiosis Meets Design

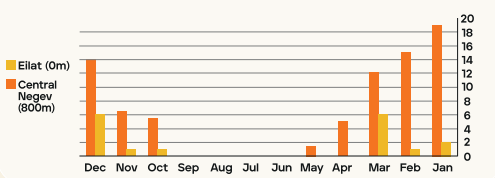
Treatment free beekeeping - managing bees without the use of artificial antibiotics or chemical pesticides, is one of the most difficult challenges and diffuse desires for many hobbyist beekeepers. The purpose of this work is to present a case study demonstrating success in treatment-free beekeeping due to ideal internal hive conditions, treatment-free stock, and a pseudoscorpion symbiosis providing biological control.

Field Study in the Negev Desert

Between 2015-2025, this study was conducted in a semi-desert climate on the border of Beer Seeva Negev desert. Attempts were made to select survivor colonies by catching feral colonies and swarms using a standard wooden Langstroth hive. Thermodynamic hive prototypes were designed and built, to ensure an ideal internal nest environment. The hive design was optimized, foundation drawn by bees and living pseudoscorpions were installed in the hive.

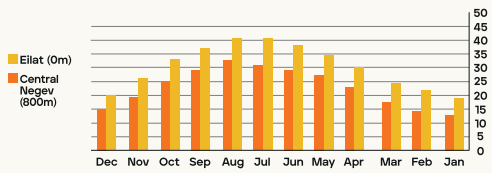
Negev Desert Average Precipitasion [mm]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Eilat (0m)	2	1	6	0	0	0	0	0	0	1	1	6	17
Central Negev (800m)	19	15	12	5	1.5	0	0	0	0	5.5	6.5	14	78.5



Negev Desert Average day time Temperatures [c°]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Eilat (0m)	19	21	24	30	34	38	40	40	37	33	26	20	30
Central Negev (800m)	13	14	17	23	27	29	31	32	29	25	19	15	23



Synergy in the Hive: Thermodynamics, Genetics, and Pseudoscorpions

Strong survivor colonies of Apis mellifera ligustica cultivated locally for 40y, were collected from swarms and feral colonies and maintained treatment-free for 5y. Survivor colonies were observed raising the internal hive temperature from 35°C to 45°C similar to an immune response to combat bacterial infection. This immune response was effective due to the thermal efficiency of the Primal Bee hive. The pseudoscorpions survived on the bottom board in the thermodynamic hives, and predation of Varroa was observed.
Honey was harvested also in late autumn up to wintertime where nearby professional operations in standard hives are fed up to 60L of sugar syrup to survive. This presentation will highlight for beekeepers the importance of providing an ideal internal environment in the hive and the synergistic results of thermodynamics, bee biology, biological control and survivor stock genetics.

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Primal Bee

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