

# PARTIAL CONFINEMENT OF THE QUEEN BEES TO CONTROL THE VARROA DESTRUCTOR

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The battle against Varroa is a beekeeping technique: mite killing products cannot eliminate these parasites without the beekeeper's intervention.

The idea came from research financed by the Cooperazione Italiana and ONUDI of Buenos Aires for an international cooperation project aimed at rebuilding the Argentine industrial sector and intended for Dean Funes' COOAPIS (poster presented at Apimondia 2009 with the title: "First experiment of organic and integrated pest management against Varroa Destructor in Ischilín region, Córdoba-Argentina).

The battle against varroa is based on combining mite killers (organic and/or synthetic) with the technique of confining bee queens in a honeycomb through a physical barrier (vertical queen excluder or trap frame).



Dias	I° tecnica (con muchas Varroa)	II° tecnica (para los profesionales)	III° tecnica (con muchos sanganos)
0	Bloqueo parcial de la reina + Producto acaricida	Bloqueo parcial de la reina + Producto acaricida	Bloqueo parcial de la reina + Producto acaricida
7	(Producto acaricida en funcion de la cantidad de Varroa y del producto utilizado)		
14	Liberacion de la reina y eliminacion del cuadro con cria + Alimentacion de la colmena (tratamiento acaricida en funcion de la cantidad de Varroay del producto utilizado)		
21	Tratamiento con acido oxalico	Liberacion de la reina y eliminacion del cuadro con cria + Alimentacion de la colmena + Tratamiento con acido oxalico	Liberacion de la reina y eliminacion del cuadro con cria + Alimentacion de la colmena
28			Tratamiento con acido oxalico

We decided to split the battle against varroa into 3-4 phases every 7 days for 21 consecutive days, given the bee's life cycle and the varroa's reproduction cycle during the phase of cell capping and also given the little time professional and amateur apiarists have. The initial stage involves confining queen bees and applying a mite killer treatment; after two weeks the queen is freed, her appetite is whetted and the honeycomb is taken away to be destroyed or to create queenless nuclei (at this point intervention with a second mite killer is possible, based on the present amount of varroa); the 21st day, when almost all the bees have emerged of brood and the remaining varroa is at its parasitical stage, is the time to intervene with another killing treatment (authorized commercial Oxalic acid-based products).

This battle technique allows to strongly reduce the number of varroa mites (>90%) and to keep the queen and the colony in good condition.

The beekeeper once again becomes the unique successful element in the battle against varroa, aware of the fact that using illegal mite killers would debase his noble art.

La lucha a la varroa es una tecnica apicola; ningun producto acaricida tiene la posibilidad de eliminar el acaro sin el trabajo del apicultor. Esta lucha se ha basado sobre la integracion de los acaricidas (quimicos y organicos) con la tecnica de separacion de la reina sobre un cuadro por medio de una rejilla excludora o canasto tecnico y en el respecto de los tiempos de intervencion. El apicultor vuelve a ser el elemento fundamental para ganar la Varroa, sabiendo que el utilizo de los acaricidas ilegales disminuye su noble trabajo.