have shown that the application of the “Mussispace®” biotechnique alone did not keep the number of mites at an acceptable level, at least under the conditions within the ecosystem considered. However it should be noted that an integrative pharmacological treatment could be administered in October when the colonies are broodless. In this case, the overall results should be better.

Further the beekeeper reported that in March the conditions of the A thesis colonies were better than those of the other two theses with respect to brood quantity and quality. In addition the A thesis colonies had a greater supply of honey and appeared to be more docile. These results are preliminary. Data will continue to be collected through December 2006 after which a more complete evaluation of the effectiveness of the “Mussispace®” biotechnique will be possible.

CURRENT EFFECTIVENESS OF AMITRAZ AGAINST VARROA IN PORTUGAL

No 181

S.M.A. Pires¹, A. Muriilhas², O. Pereira³, M. Maia³
¹ Instituto Politécnico de Bragança, Bragança, Portugal, ² Universidade de Évora, Évora, Portugal, ³ Universidade de Trás-os-Montes e Alto Douro, Vila Real, Portugal

Email: spires@ipb.pt

The varroa mite (Varroa destructor) was first detected in Portugal in 1986. Since then, there has been a frequent use of amitraz (Apivar, Acadrex) in the attempt to cope with it. Following (i) various credible international reports of increased varroa resistance to amitraz and (ii) regular claims, by national beekeepers, of poor efficacy of Apivar treatments, a large screening project was setup (2003/2004) for trying to identify honey bee colonies hosting varroa populations resistant to amitraz in continental Portugal. As a first step, approximately 1,200 beekeepers were enquired nationwide, with a view to building up a rank of apiary-specific probability indexes of varroa resistance to fluvinate. From those beekeepers, approximately 4,000 colonies were field-tested in a similar way to the “British National Bee Unit” field testing methodology for fluvinate, and compared to blank control tests (same kits and methodology, but without using amitraz). From those investigated colonies, 1,579 allowed conclusive testing (i.e. where 3 or more varroa per honeybee colony were submitted to the action of amitraz). Approximately 17% (272) of these colonies were considered to host varroa populations resistant to amitraz (using, as border line, 80% of amitraz induced varroa mortality). Furthermore, the efficacy of amitraz in the field tests carried out on those 272 colonies only reached an average of 60.1% (s.e.m. = 1.2%).

THE MONITORING TECHNICS OF VARROA RESISTANCE AND ROTATION OF THE VARROA TREATMENTS

No 182

J Trouiller
VITA (Europe) Limited, Basingstoke, United Kingdom

Email: trouiller@swarm.fr

Since several years, the distribution of varroa resistance to the active ingredients of treatments against Varroa destructor has been identified and monitored especially in Western Europe. The different techniques used for laboratory or field tests, and for the different active ingredients used against the varroa are described. The different techniques used are discussed for their accuracy and their role for the monitoring. The evolution of the intensity of varroa resistance in relation with the types of treatments used against the varroa mites are described. The ideal rhythms of rotation with the different active ingredients are discussed. The example of reversion of varroa resistance to the pyrethroids in Europe will illustrate the different aspects of the rotation strategy.

HOW RESISTANT TO FLUVINATE ARE VARROA POPULATIONS IN PORTUGAL?

No 183

A Muriilhas¹, S Pires², M Maia³, O Pereira³
¹ University of Évora (ICAM), Évora, Portugal, ² Politecnic Bragança Institute, Bragança, Portugal, ³ University of Trás-os-Montes e Alto Douro, Vila Real, Portugal

Email: muriilhas@uevora.pt

The varroa mite (Varroa destructor) was first detected in Portugal in 1986. Since then, there has been a widespread use of fluvinate (Apistan, Klaritan) in the attempt to cope with it. Following (i) various credible international reports of increased varroa resistance to fluvinate and (ii) repeated claims from national beekeepers of poor efficacy of Apistan treatments, a large screening project was setup (2003/2004) for trying to identify honeybee colonies hosting varroa populations resistant to fluvinate in continental Portugal. As a first step, approximately 1,200 beekeepers were enquired nationwide, with a view to building up a rank of apiary-specific probability indexes of varroa resistance to fluvinate. From those beekeepers, approximately 4,000 colonies were field-tested according to the “British National Bee Unit” field testing methodology, and compared to blank control tests (same kits and methodology, but without using fluvinate). From those investigated colonies, 1,536 allowed conclusive testing (i.e. where 3 or more varroa per honey bee colony were submitted to the action of fluvinate). Approximately...
CONTROL OF PYRETHRUID AND COUMAPHOS-RESISTANT MITES IN NORTH AMERICA USING APIGUARD.

No 184

M.S. Watkins
Vita (Europe) Limited, Basingstoke, United Kingdom

Varroa mite infestations have increased in the United States over the past few years due to mite resistance to treatments currently in use. Varroa in some areas have become resistant to pyrethroids as well as to organophosphates (coumaphos or Check Mite+ Strips). Beekeepers relying solely on these products for control of varroa have lost many colonies because of insufficient control levels.

The slow-release gel, Apiguard, containing thymol has been developed especially to control pyrethroid, amitraz and OP-resistant mites; it has a different mode of action to these pesticides. Apiguard is registered and used by beekeepers in many countries and has been trialled in several sites within the USA, prior to registration.

Results are reported here from trials conducted in several States and show that the product can be used successfully under a variety of environmental conditions.

A STUDY ON INCIDENCE OF TRACHEAL MITE (ACARAPIS WOODI) IN HONEYBEE COLONIES (APIS MELIFERA) IN CHAHARMAHAL AND BAKHTIARI PROVINCE

No 186

S Aghili, E Koohi, P Koohi
Veterinary Organisation, Shahrekord, Iran

Introduction: Acariosis is an important contagious parasitic disease that is caused by Acarapis woodi. Pathogens attack to trachea of bees and they establish disease in this way.

Today one of the problems of beekeepers in some of the countries is Acarapis woodi. Iran is one of them. Acariosis reported in England for the first time in 1904. In fact IBRA (International Bee Research Associations) pronounced Iran without Acarapis woodi until 1983. But some years later, in 1994, Mosadegh & Bahreany during their studies announced presence of mite Acarapis woodi in 18 provinces among 22 of Iran, which they chose. For this reason, a survey of honeybee colonies for presence of A caroids woody mite was started from September 2002 to April 2003 in Chaharmahal and Bakhtiari province.

Methods: Province divided to six areas, in each area ten apiaries were selected. In each apiary 10 percent of colonies were randomly sampled. Samples of (50-100) adult bees per hive were taken from the hive entrance and when available 50 dead bees from the ground in front of the same hive.