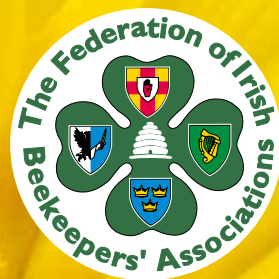


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PRELIMINARY ANALYSIS OF THE DATA FROM THE FIELD TRIAL ON MITE AWAY QUICK STRIP (MAQS) IN TEAGASC, OAKPARK

(TASK 3 OF THE 2013-2016 NATIONAL APICULTURE PROGRAMME)

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Mite Away Quick strips (MAQS), a formic acid based treatment is the most recent varroacide authorised for use in Irish honeybee colonies. According to the manufacturers, the proposed test product (MAQS) is an effective 7 day treatment between 10 – 29.5°C, has the potential to kill both phoretic mites and mites inside brood cells with limited negative impact on the colony development. An on-going field trial in Teagasc Oakpark, which is one of Tasks of the 2013-2016 National Apiculture Programme and previously described in detail in the October edition of *An Beachaire* aims to assess and compare the efficacy and tolerability of MAQS as a late Summer/Autumn varroacide when administered according to the label (2 pads) and at a lower dosage rate (1 pad). The trial will also determine if MAQS is effective as a sole treatment (Autumn treatment only) or if a follow-up winter treatment (ApiBioxal) is necessary for the effective control of the *Varroa* mite.

In August 2014, a total of 60 colonies in commercial type hives, headed with 2014 mated queens were standardised using brood area. Pre-treatment, natural mitefall was estimated in all test colonies and subsequently the colonies were divided into 5 treatment groups.

- Group 1:** 2 pads with honey in situ (n=12) followed by control treatment
- Group 2:** 2 pads with honey extracted (n=12) followed by control treatment
- Group 3:** 2 pads with honey extracted (n=12); no control treatment
- Group 4:** 1 pad (half dosage) with honey extracted (n=12); followed by control treatment
- Group 5:** Control group; no treatment

Colony tolerability was assessed by monitoring bee mortality, brood mortality (eggs/ open brood) and queen survival/queen supersedure. Three weeks post the MAQS treatment, a control treatment was administered to Groups 1,2,4 and 5 thus allowing the percentage efficacy of MAQS to be determined. No control treatment was administered to colonies in Group 3, but at the time of writing the natural mitefall in these colonies is being monitored on a weekly basis thus allowing mite population growth to be assessed. The analysis of this mite population growth will subsequently be used to determine if a winter treatment is necessary for the effective control of the mite.

Preliminary analysis of the data indicates that when the treatment was administered according to the label, 2 pads (Group 1 and 2) the average efficacy was approximately 70% with high colony variability. Reducing the dosage by half (1 pad) further reduced this efficacy (30-40%). The weekly natural mitefall in the test colonies in Group 3

(n=12) gradually increased from Mid Sept to 1 Dec, indicating that mites that survived the MAQS treatment successfully reproduced and hence over the past two months the mite population in the test colonies in Group 3 has increased significantly. This increase in mite populations in MAQS treated colonies would suggest that MAQS, even when administered according to the label (2 pads) is insufficient as a sole treatment and beekeepers should consider administering the Winter treatment, Apibioxal. This product can be administered using the trickling method or the vaporiser method (varroax-vaporiser). Previous field trials carried out on ApiBioxal in Teagasc, Oakpark (2010/2011 and 2011/2012) indicate that irrespective of the method of administration of this product an efficacy >90% can be achieved, but ApiBioxal when administered by the vaporiser method is better tolerated by the colony.

In addition to determining the efficacy of MAQS, this trial also assessed how well MAQS was tolerated by the colony. Two queens were killed (Day 1 post treatment) and two other colonies superseded their queens, one subsequently developed into drone layer, the other mated successfully. Eggs and unsealed larvae viability during the treatment period (7 days) was low. Some bee mortality was also observed, but this data is not yet available.

In conclusion, the preliminary analysis of the dataset suggests that MAQS can cause some bee and queen mortality and egg and unsealed larvae viability is low during the early treatment period. The data also suggests that when MAQS is administered as an Autumn treatment according to the label (2 pads) or at the lower dosage (1 pad), it is insufficient as a sole treatment and thus a follow-up winter treatment with ApiBioxal may be necessary for the effective control of the *Varroa* mite.



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