



Apivar[®] Efficacy Program

2022 Report

Introduction

Alberta's Tech Transfer Program (TTP) and the Government of Alberta's Bee Health Assurance Team (BHAT) have been proactively working to assess Apivar® efficacy across Alberta. Our goal is to randomly screen Varroa mite populations from across the province before treatments are applied in the fall. Testing was completed in 2021 and 2022 and the results are presented in this report.

Method

We used the Apiarium method and samples were tested at the Crop Diversification Centre North in Edmonton, Alberta. Samples were either collected by beekeepers in live bee shipping boxes and mailed in or by TTP/BHAT staff in either live bee boxes or directly into the Apiariums. Upon arrival to the lab, samples were placed in an incubator and tested the next day.

When possible, 3 controls and 3 replicates were completed. However, there were difficulties with some of the samples not having enough bees or arriving dead. After 4 hours in an incubator, the mite drop was counted. Samples were then placed in a freezer and a mite wash was completed the following day.

Results

In 2021, we relied on beekeepers to mail in samples for testing. There was little uptake, although we did get samples from 5 beekeepers, 3 of those were collected by either the TTP or BHAT inspectors. Any samples with less than a 2% infestation were removed from the results. In total 19 colonies were tested (Table 1). The average efficacy ranged from 23 - 84% with an average of 66% (see Figures 1 & 2). There are issues with these results due to the infestation level of some samples (>40%) and the lack of bees for 3 replicates and 3 controls.

In 2022, we tested samples mailed in by beekeepers and collected by TTP/BHAT inspectors. However, mite levels remained low until the fall, so our sample size remained small in the 2022 season. A total of 26 colonies from 7 beekeepers were tested. The average efficacy ranged from 29 - 92%, with an average of 44% (see Figures 3 & 4).

Table 1. Number of participating beekeepers and colonies tested during the 2021 and 2022 Apivar® Efficacy Program.

Year	Number of beekeepers	Number of colonies tested
2021	5	19
2022	7	26



Figure 1. 2021 average efficacy per beekeeper of Apivar® on Varroa mites after 4 hours of exposure.

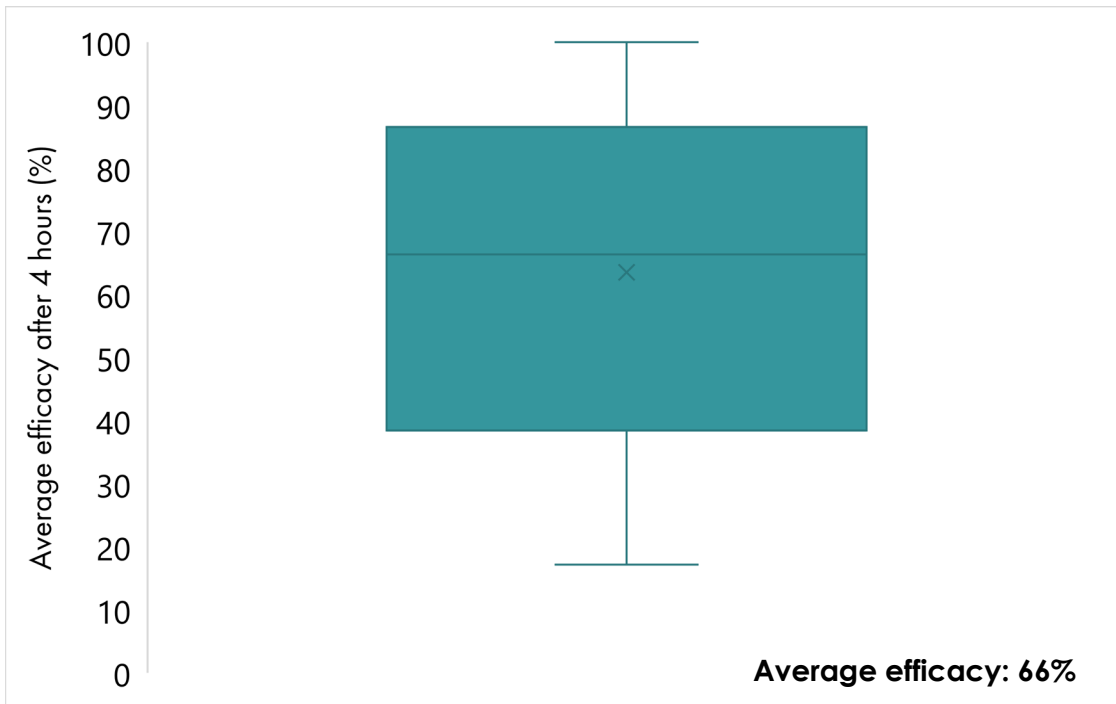


Figure 2. 2021 average efficacy of Apivar® after 4 hours of exposure.

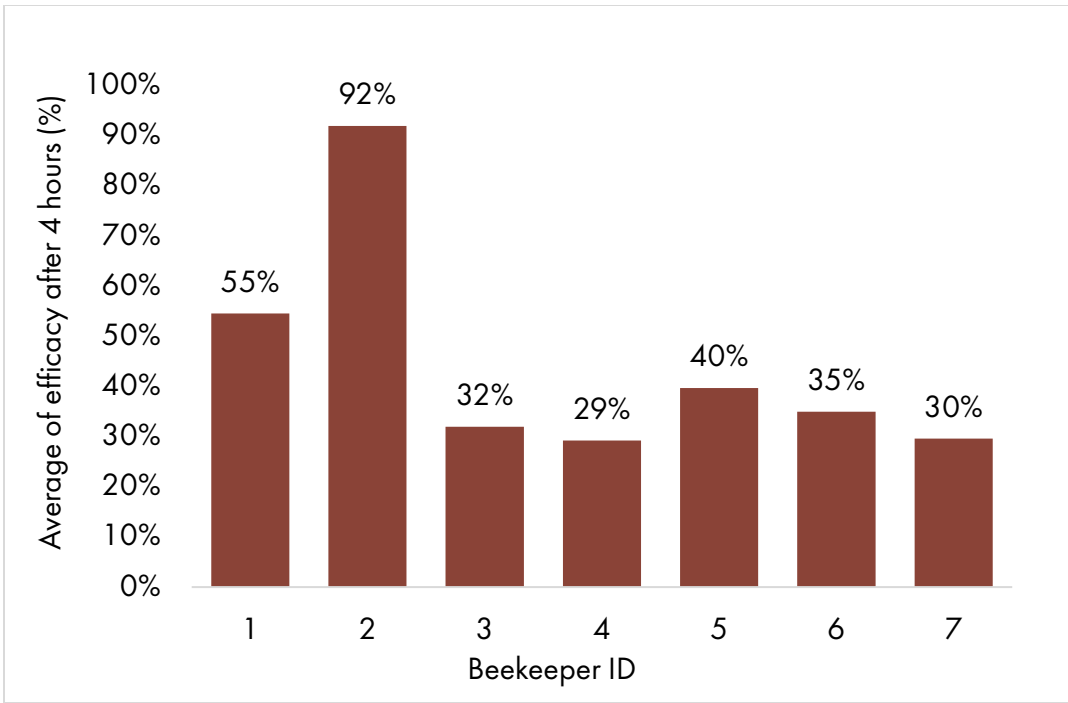


Figure 3. 2022 average efficacy per beekeeper of Apivar® on Varroa mites after 4 hours of exposure.

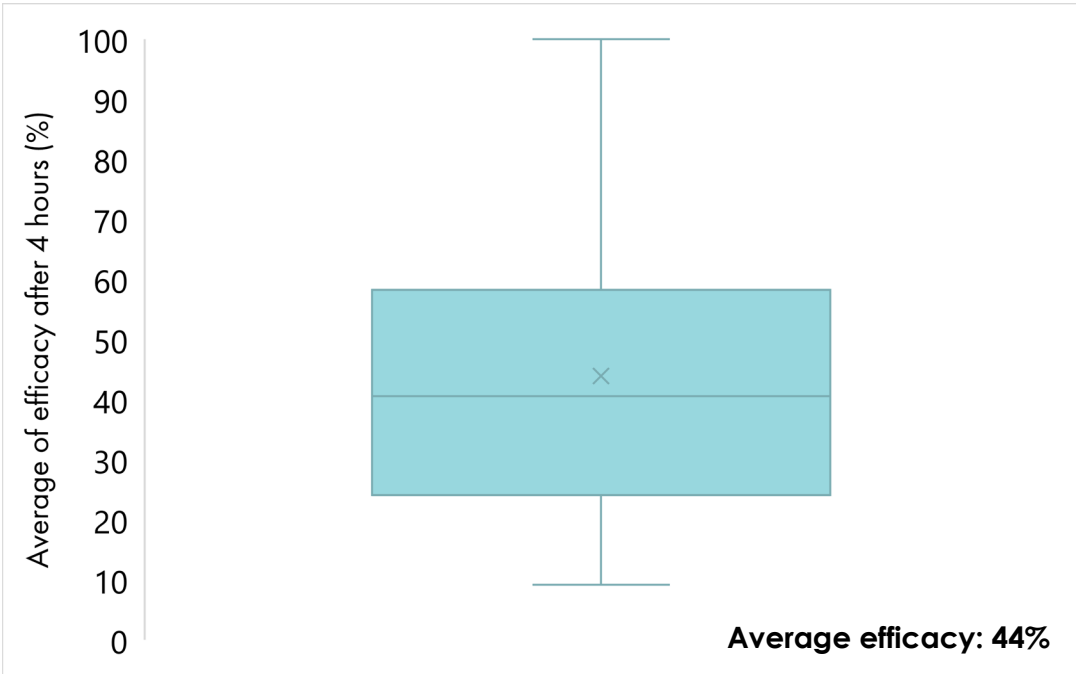


Figure 4. 2022 average efficacy of Apivar® after 4 hours of exposure.