

## Media Release for Beehive Breathalyser

A new method patented by researchers from the Honey Bee Health Group at The University of Western Australia (UWA) sniffs out American foulbrood (AFB), a devastating honey bee disease that ravages hives across Australia.

Dr Julia Grassl and her team analysed over 100 compounds emitted by honey bee larvae, and isolated those that are signature markers for AFB. Sensors for these compounds can now be used to develop a “beehive breathalyser” that is used like a digital sniffer dog to screen for the disease.

The study is a PhD project funded by the CRC for Honey Bee Products and UWA’s Jessica Moran has been working on this for the last 2 years. She explained that early detection of AFB is crucial for preventing severe outbreaks of the disease.

“As there is no treatment for AFB, if a honey bee colony becomes infected it needs to be destroyed to prevent the disease from spreading. Sadly, this means incinerating the colony, and often the hive, to eradicate the infected bees and brood. This is a very stressful and costly process for beekeepers,” explained Jessica.

The current means of detecting AFB relies on beekeepers visually identifying infected brood. This means hives need to be opened and checked by a highly skilled inspector, a time-consuming and labour-intensive process. As a result, only about 10% of hives are checked for disease during pollination events

“A beehive breathalyser for AFB will help safeguard the honey bee pollination services in Australia that are valued at \$14 billion per annum. By rapidly screening hives for AFB, beekeepers will be able to detect outbreaks earlier, preventing severe losses in production and revenue,” Jessica said.

Dr Grassl’s research group was recently awarded over half a million dollars in additional funding by AgriFutures Australia to develop their discovery into a commercial product. Their team will include sensor development experts from UWA to develop chemical sensors that can detect AFB rapidly and accurately.

“We aim to deliver a hand-held device that is user-friendly, sturdy, cost effective, and accurate. We envision the AFB-sensor benefiting both beekeepers and farmers of pollinator-dependent crops,” Dr Julia Grassl said.