

PP-298 [Beekeeping Technology and Quality] Protecting Honey Quality and Bee Health with Rapid Glyphosate Detection

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The honey industry is vital to the biodiversity of our ecosystems playing a key role in agricultural production. For producers, ensuring sustainability is fundamental, balancing the demand for high crop yields with the need to protect bee health and maintain the safety of the honey produced. This balancing act has led to a critical need for effective testing of contaminants resulting from agricultural practices within the honey industry.

One such contaminant is glyphosate, a widely used herbicide that has been detected in honey, raising issues about food safety and environmental contamination risks. As beekeepers face increased regulatory pressures and growing consumer demand for residue-free products, the need for reliable testing methods becomes essential.

Both HPLC and LC-MS are established methods for testing glyphosate, but these techniques are time-consuming, costly, and often inaccessible for small-scale beekeepers. While ELISA methods are available for glyphosate detection, the options are limited, with few kits specifically tailored for the honey industry. These methods all require specialised expertise, and the analysis process can be lengthy, making them impractical for frequent or large-scale testing. As a result, there is a clear need for a more cost-effective, and rapid testing solution that is readily accessible to the industry and ensures compliance with regulatory standards.

As part of our innovative FlowSense range, Biorex Food Diagnostics has developed a commercially available rapid test kit using lateral flow immunoassay technology to detect glyphosate residues in honey samples within just 10 minutes. The simple dilution method ensures high sensitivity and specificity, meeting the European Union's industry standard limit of 50 µg/kg for glyphosate residue in honey. Results are interpreted qualitatively or semi-quantitatively with our portable, user-friendly FlowSense reader, enabling field-based monitoring

The availability of an affordable and user-friendly glyphosate test kit enables beekeepers to proactively monitor honey quality, reducing the risk of regulatory non-compliance. Regular testing can help identify contamination sources, allowing for strategic hive placement and mitigation efforts to minimize glyphosate exposure. This solution enhances the credibility of honey products in domestic and international markets, supporting sustainable and profitable beekeeping practices.