

DRAFT Minnesota Honey Producers Association- NP305 2024-2029 Stakeholder Input

1. What are the most important problems and challenges your organization/farm operation faces for which research from NP 305 Crop Production could contribute solutions?

The research performed by the USDA-ARS critical for honey bee health in the US. The Minnesota Honey Producers appreciate the scope and progress of this work and are grateful for the opportunity to provide input for the 2024-2029 NP305 work plan. Our members are concerned about the impact of poor nutrition due to changing land use and environmental conditions, emerging and current pests and diseases, and pesticides on honey bee health. We are also concerned that our industry's honey production has been decreasing at alarming rates since 1987, especially since an analysis of US honey production from 1939-1981 by Page *et al* (1987) suggested that honey yields since 1939 were trending upwards. Instead, the raw USDA-NASS data suggest that both total honey production and yields are trending downward (Figures 1 and 2).

Although intended to support managed and native pollinators, the CP42 Pollinator Seed Mix in the Conservation Reserve Program has numerous opportunities for positive change. Data support either significant seed selection improvement or the establishment of a novel seed mix to support honey bees. Although incentive improvement and program restrictions (Jones Ritten *et al* 2017) are not in the scope of the ARS, we believe that identification of a seed mix that is better suited to the foraging and health needs of honey bees is. Research suggests that the current CP42 mix is used 'modestly' by honey bees (McMinn-Sauder 2020) and that current CP42 seed success and honey bee visitation could be improved as well as cost effectiveness of the seed mix (Simanonok *et al* 2022).

We also identify a need for a tool proposed by Page *et al* (1987) that would be invaluable for the honey bee industry. They proposed that honey yield data be used to assess damage from 3 leading threats to honey bee health (in 1987, they identified these threats as tracheal mites, Africanized bees and varroa mites). In 2023, the MHPA identifies serious threats to the US honey bee industry as pests, pathogens, pesticides and poor nutrition. The combination of these menaces results in decreased total honey production and crop per colony, decreased queen fitness, and increased colony death. We are concerned about both the threats as well as the lack of a rigorous method to assess them.

References

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Figure 1. USDA-NASS US Honey Production data from 1987-2022 showing a downward trend.

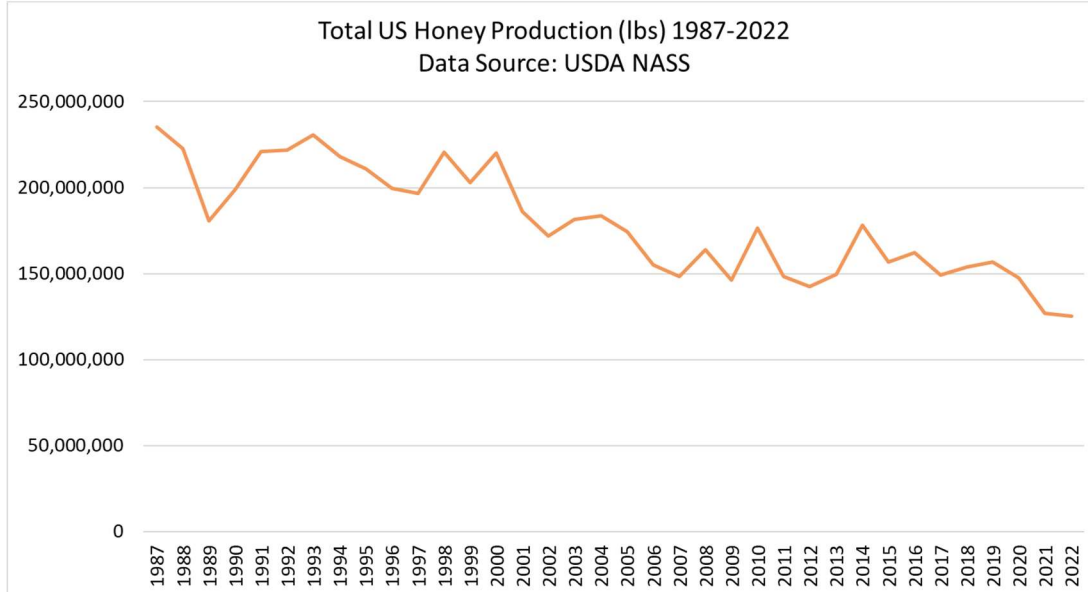
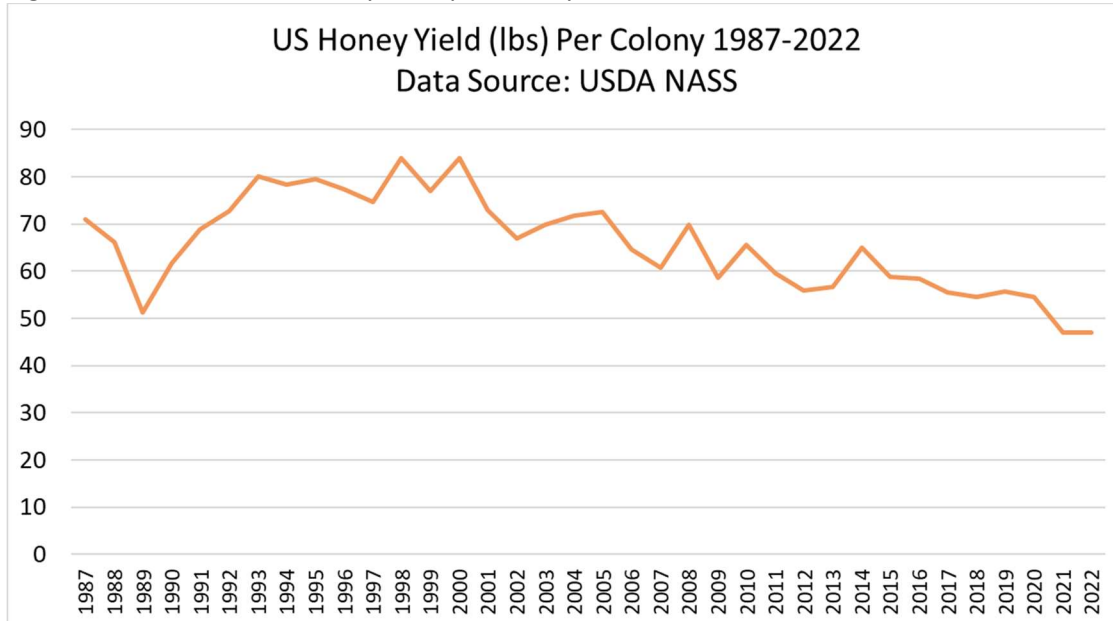


Figure 2. USDA-NASS US Honey Yield per Colony data also demonstrate a decrease over time.



2. [What are the top research priorities that NP 305 should focus on during the next five years?](#)

The Minnesota Honey Producers Association identifies the following research priorities that we would encourage the NP 305 to address:

- Investigate the decrease in US honey yield crop per colony and total honey production since 1987 and explore solutions to increase yield and production.
- Identification of a specific seed mix geared to honey bee health that provides season long nectar and highly nutritive pollen sources for use in agricultural conservation programs that support Minnesota beekeepers and their small ag businesses as well as the US honey bee

industry. Providing for specific nutritional needs of honey bees will support all pollinators. In areas where sufficient habitat is present, all pollinators can thrive.

- Protect our US honey bee supply from the *Tropilaelaps* mite by identifying opportunities for prevention of US entry and control if necessary.
- Investigate honey bee immunosuppression and its connection to pesticides, pests and pathogens.

3. [How can ARS partner with stakeholders to conduct NP 305 research?](#)

The Minnesota Honey Producers Association identifies the following two opportunities for stakeholder research:

- The Minnesota Honey Producers Association is increasingly alarmed about the access to ARS support in the Midwest. Per Dr. Judy Wu-Smart of the University of Nebraska, Lincoln, a large majority of beekeepers utilize the Great Plains area to rest and feed their bees after critical pollination services are performed across the country, but there are limited to no services available for these midwestern beekeepers. Diagnostic labs, like ARS, provide identification and verification of pests and diseases, which are necessary for making informed management decisions. Unfortunately, shipping samples across the country is 'hit or miss' in terms of how well the bees hold up in transport. Additionally, of the Midwest universities with strong and successful bee research programs, most (if not all) are partnering with ARS scientists. The lack of ARS scientists nearby makes those collaborations (and the resources they have at their disposal) difficult.
- Habitat initiatives like the Bee and Butterfly Habitat Fund have addressed the dilemma of creating habitat that benefits both native and non-native pollinators. In a typical B & B Habitat Fund project, half the acreage is planted to benefit native pollinators and half to benefit honeybees. The MHPA supports the efforts to expand B & B Habitat Fund acreage and other habitat in the state that recognizes all pollinators are important and have different needs.