USApple

# Outlook 2024

How BeeHero Data-Driven Decision Making Improves Efficiency, Profitability and Sustainability.

**Itai Kanot.**
**Chief Growth Officer.**

August 15th 2024

# My background


BeeHero

# BeeHero Overview.

- BeeHero was Founded in 2017.
- Our Headquarters are in Fresno, California. Product and R&D in Tel Aviv.
- Our team is comprised of agriculturalists and farmers, beekeepers and bee researchers, engineers and data scientists.
- We work with major agricultural companies and growers around the world. In the US in California, Oregon & Washington and, across the globe in Israel, France, Australia and more.
- And today BeeHero is the world's leading provider of precision pollination.

| ACRES | HIVES | DATA POINTS DAILY |
|---|---|---|
| **200K+** | **325K+** | **25M+** |

BeeHero

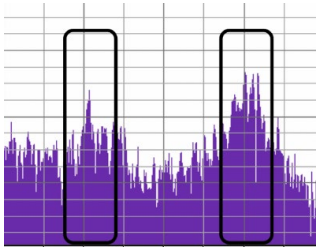
# Driving Value with Superior Pollination.

- Our solutions drive value for growers by tracking and monitoring bee activity in crops during pollination. BeeHero gives growers complete visibility into the pollination process.

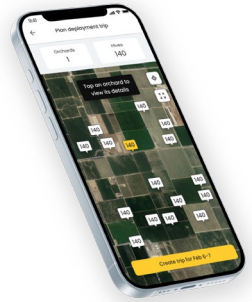
- We deliver quality data for a quantifiable pollination ROI both in the hive and in the field. We do this with two complementary data-driven solutions.

**Simple Hardware**
Easy to install, low-cost, IoT sensors.

**Data Collection**
From both streams In-Hive & In-Field.



**AI Analysis**
Of bee and pollination database.



**Data Anywhere**
Mobile platform
Real-time usability.

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# BeeHero Technology & Efficiency


- How many bees do I need?
- Where should they be placed?
- Are they in the right place?
- Are there enough of them in the right place.
- And what happens if they’re in the wrong place?

- BeeHero data-driven pollination gives you the answers you need to these questions and more to make your pollination dramatically more efficient.

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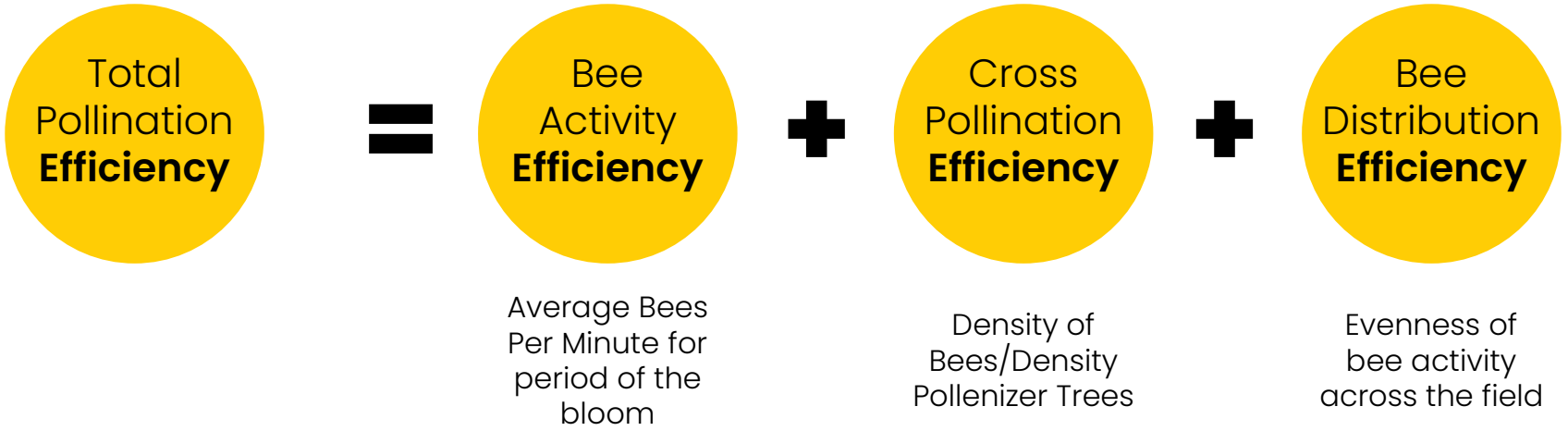
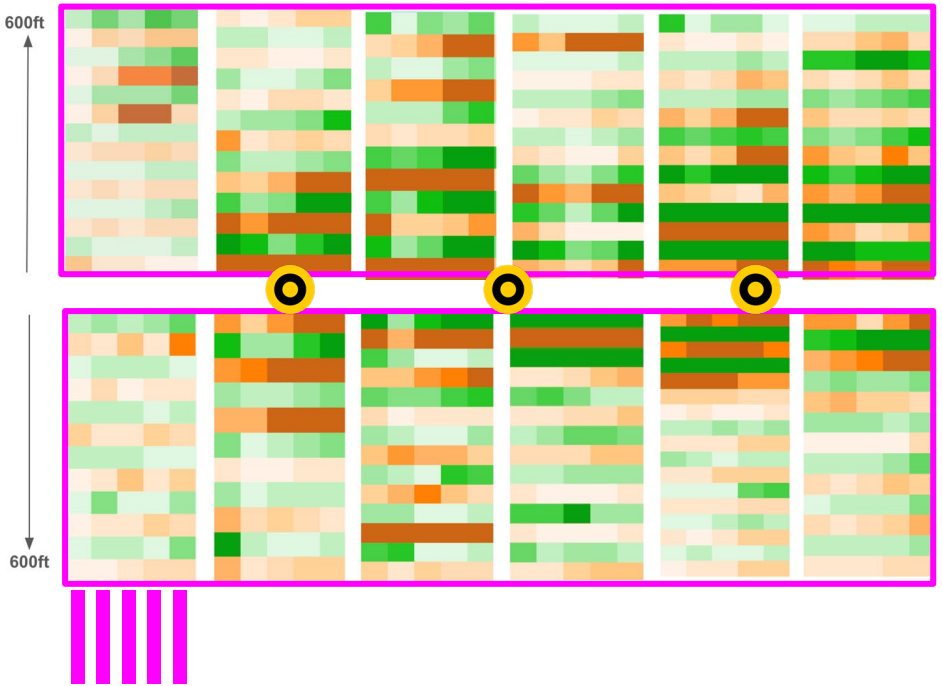
# BeeHero Technology & Efficiency



# BeeHero Technology & Efficiency

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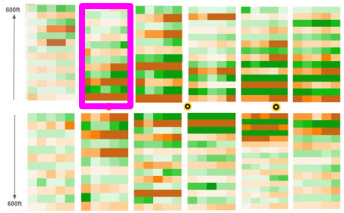
# BeeHero Technology & Efficiency



= Bee Flight Hours

This overlay shows how initially the bees focused on foraged nearest most and most convenient to the hives.

2 days of bad weather resulted in considerably lower bee visits at all sensors.

And then as they exhausted the pollen and nectar they moved further from the hives.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7.7 | 6 | 6 | 3.2 | 0.8 | 0.8 | 4.8 | 3.5 | 5 | 6 | 2.8 | 5.5 | 6 | 5.4 | 5.2 | 5.8 |
| 2 | 12 | 40 | 55 | 7 | 1 | 56 | 19 | 15 | 24 | 2 | 109 | 54 | 12 | 49 | 68 |
| 17 | 26 | 44 | 54 | 2 | 0 | 22 | 16 | 15 | 0 | 1 | 71 | 27 | 15 | 46 | 45 |
| 44 | 59 | 122 | 75 | 0 | 0 | 3 | 7 | 2 | 8 | 0 | 39 | 8 | 8 | 19 | 97 |
| 5 | 32 | 98 | 121 | 2 | 3 | 13 | 28 | 12 | 23 | 0 | 96 | 78 | 32 | 48 | 85 |
| 75 | 72 | 27 | 31 | 5 | 47 | 35 | 57 | 19 | 24 | 7 | 209 | 149 | 208 | 51 | 163 |
| 8 | 4 | 8 | 27 | 1 | 6 | 47 | 40 | 19 | 66 | 0 | 217 | 180 | 57 | 72 | 137 |
| 1 | 3 | 6 | 12 | 0 | 2 | 20 | 18 | 4 | 7 | 1 | 80 | 18 | 24 | 35 | 75 |
| 52 | 3 | 8 | 19 | 4 | 1 | 24 | 24 | 7 | 10 | 0 | 117 | 8 | 15 | 17 | 18 |
| 9 | 7 | 15 | 27 | 2 | 2 | 48 | 49 | 22 | 14 | 3 | 96 | 61 | 35 | 45 | 104 |
| 1 | 34 | 63 | 116 | 33 | 3 | 33 | 36 | 21 | 20 | 11 | 44 | 158 | 10 | 41 | 100 |
| 4 | 13 | 6 | 9 | 8 | 7 | 9 | 14 | 8 | 13 | 1 | 49 | 2 | 19 | 2 | 47 |
| 17 | 6 | 20 | 25 | 2 | 1 | 22 | 27 | 6 | 13 | 6 | 23 | 96 | 18 | 8 | 7 |
| 43 | 18 | 20 | 29 | 2 | 5 | 19 | 26 | 19 | 7 | 2 | 83 | 50 | 44 | 31 | 83 |
| 16 | 4 | 18 | 35 | 6 | 12 | 60 | 39 | 7 | 19 | 8 | 88 | 18 | 53 | 29 | 68 |
| 6 | 6 | 12 | 9 | 4 | 2 | 17 | 24 | 7 | 11 | 9 | 191 | 138 | 169 | 65 | 164 |
| 63 | 23 | 46 | 94 | 7 | 7 | 61 | 25 | 37 | 49 | 8 | 14 | 15 | 58 | 18 | 61 |
| 7 | 11 | 36 | 87 | 9 | 5 | 90 | 28 | 47 | 35 | 7 | 172 | 112 | 146 | 19 | 172 |
| 12 | 29 | 35 | 31 | 3 | 4 | 2 | 18 | 1 | 0 | 1 | 57 | 26 | 12 | 50 | 76 |
| 7 | 82 | 82 | 60 | 0 | 0 | 4 | 20 | 1 | 2 | 0 | 31 | 13 | 9 | 29 | 24 |
| 20 | 33 | 54 | 54 | 3 | 3 | 5 | 19 | 6 | 8 | 2 | 77 | 39 | 29 | 34 | 60 |
| 9 | 17 | 37 | 1 | 3 | 2 | 1 | 7 | 3 | 1 | 0 | 34 | 11 | 5 | 8 | 7 |
| 20 | 22 | 40 | 76 | 16 | 5 | 44 | 32 | 57 | 31 | 14 | 25 | 125 | 126 | 40 | 98 |
| 77 | 70 | 29 | 17 | 2 | 1 | 29 | 27 | 18 | 27 | 2 | 153 | 33 | 99 | 35 | 91 |
| 34 | 65 | 145 | 358 | 31 | 72 | 70 | 42 | 39 | 59 | 30 | 103 | 91 | 124 | 48 | 95 |
| 9 | 6 | 10 | 10 | 6 | 8 | 6 | 15 | 1 | 1 | 1 | 65 | 16 | 21 | 28 | 108 |
| 79 | 119 | 127 | 71 | 4 | 0 | 2 | 32 | 5 | 6 | 1 | 14 | 1 | 41 | 16 | 6 |
| 30 | 24 | 47 | 39 | 1 | 3 | 25 | 14 | 11 | 4 | 2 | 65 | 31 | 25 | 32 | 70 |
| 24 | 80 | 80 | 57 | 3 | 2 | 9 | 5 | 4 | 12 | 11 | 15 | 19 | 7 | 242 | 70 |
| 6 | 19 | 13 | 40 | 23 | 9 | 29 | 32 | 15 | 42 | 158 | 682 | 449 | 551 | 142 | 125 |
| 22 | 40 | 12 | 31 | 20 | 9 | 32 | 30 | 5 | 14 | 5 | 21 | 17 | 65 | 6 | 56 |
| 47 | 22 | 94 | 164 | 36 | 41 | 241 | 220 | 165 | 231 | 92 | 0 | 0 | 0 | 0 | 0 |
| 67 | 10 | 67 | 44 | 5 | 3 | 48 | 42 | 40 | 52 | 14 | 27 | 29 | 32 | 50 | 37 |
| 100 | 176 | 265 | 433 | 65 | 108 | 417 | 252 | 54 | 40 | 4 | 185 | 110 | 39 | 0 | 0 |
| 15 | 15 | 31 | 27 | 1 | 2 | 19 | 18 | 7 | 5 | 0 | 15 | 33 | 25 | 39 | 99 |
| 30 | 100 | 124 | 149 | 12 | 23 | 208 | 185 | 164 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 104 | 183 | 350 | 367 | 48 | 40 | 269 | 148 | 70 | 80 | 35 | 134 | 146 | 0 | 0 | 0 |
| 4 | 7 | 40 | 84 | 2 | 5 | 77 | 61 | 64 | 49 | 5 | 222 | 160 | 143 | 39 | 82 |
| 121 | 161 | 347 | 600 | 120 | 144 | 324 | 230 | 310 | 248 | 198 | 213 | 40 | 0 | 0 | 0 |
| 40 | 101 | 248 | 536 | 407 | 795 | 363 | 306 | 706 | 380 | 572 | 255 | 0 | 0 | 0 | 0 |
| 11 | 9 | 22 | 44 | 11 | 7 | 53 | 35 | 14 | 26 | 4 | 146 | 53 | 54 | 40 | 58 |
| 4 | 172 | 357 | 319 | 28 | 18 | 88 | 124 | 43 | 55 | 12 | 0 | 0 | 0 | 0 | 0 |
| 329 | 684 | 966 | 379 | 10 | 10 | 78 | 168 | 50 | 65 | 10 | 0 | 0 | 0 | 0 | 0 |
| 34 | 8 | 42 | 55 | 8 | 8 | 41 | 68 | 20 | 31 | 8 | 162 | 105 | 47 | 42 | 49 |
| 170 | 238 | 124 | 115 | 10 | 9 | 11 | 41 | 3 | 1 | 4 | 107 | 25 | 52 | 11 | 32 |
| 51 | 58 | 14 | 27 | 5 | 2 | 26 | 38 | 9 | 11 | 7 | 130 | 75 | 104 | 53 | 113 |
| 61 | 115 | 309 | 486 | 142 | 94 | 406 | 225 | 180 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 321 | 45 | 64 | 106 | 24 | 5 | 57 | 28 | 37 | 51 | 7 | 209 | 169 | 165 | 52 | 70 |
| 195 | 383 | 770 | 102 | 119 | 95 | 356 | 195 | 211 | 371 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | 49 | 106 | 159 | 32 | 22 | 67 | 17 | 27 | 64 | 10 | 129 | 94 | 73 | 43 | 105 |
| 277 | 338 | 634 | 94 | 19 | 11 | 47 | 18 | 25 | 46 | 4 | 108 | 75 | 116 | 30 | 88 |
| 205 | 251 | 638 | 410 | 29 | 23 | 267 | 183 | 199 | 583 | 41 | 0 | 0 | 0 | 0 | 0 |

600 feet from hives

Hives

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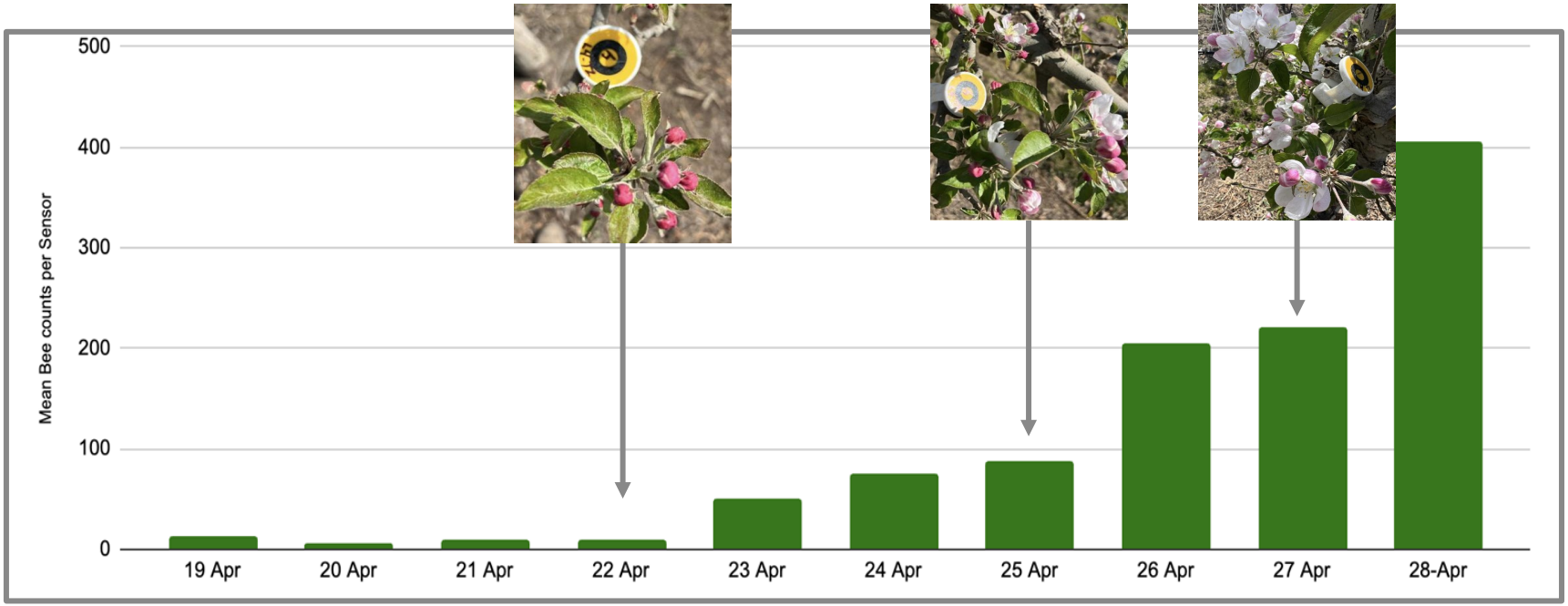
# BeeHero Technology & Profitability




- Data on start and finish time can provide clear insight into the precise onset of bloom. This data can be useful for informing spraying activity.

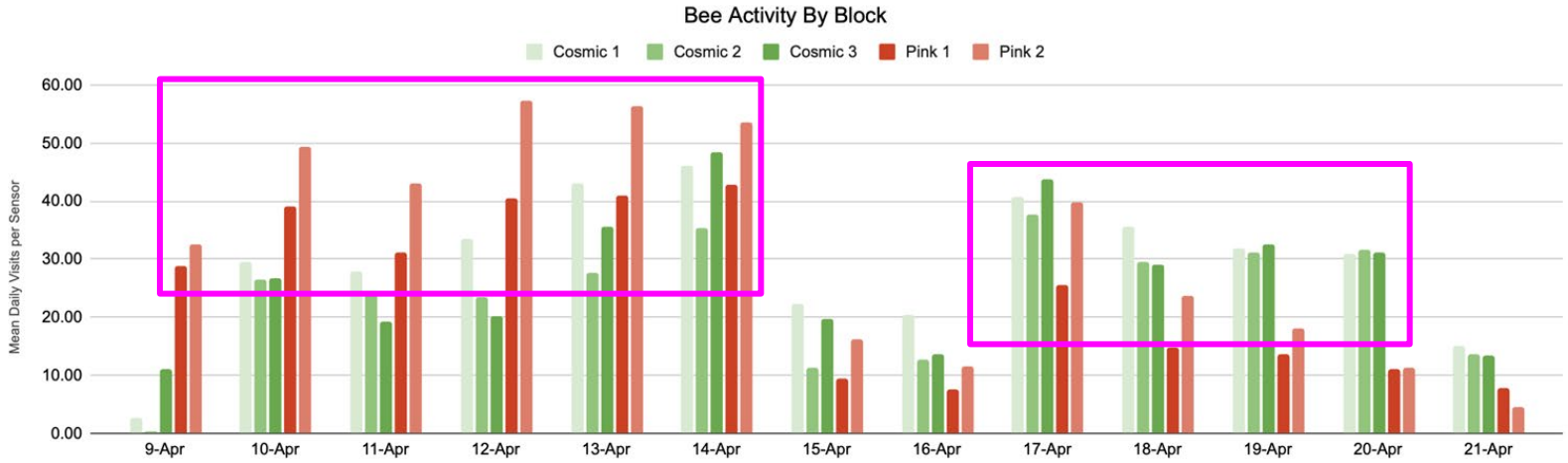
# BeeHero Technology & Profitability

- Distance of trees from hives

**Data reveals a reduction of 50% in bee activity beyond 300 ft from the hives**

# BeeHero Technology & Profitability

- Activity/bloom status



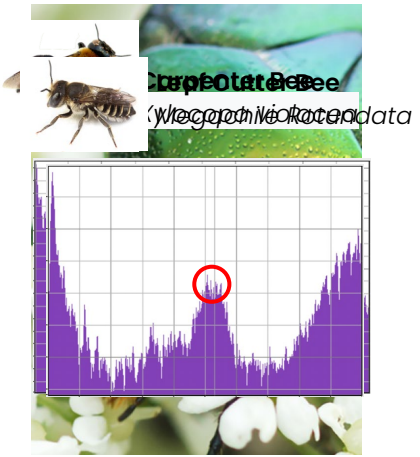

**Bee activity correlates strongly with bloom status and progression of different varieties and pollinizer trees**

# BeeHero Technology & Sustainability.

- Accurately tracking population levels leads to effective conservation, but current tools and techniques are expensive and inaccurate.

- Habitat loss, fossil fuel-based agricultural inputs and other drivers all contribute to wild pollinator population decline. Including many wasps, flies, beetles, moths, butterflies, and several species of solitary bees.

- BeeHero's technology can identify the unique acoustic signature of a species to improve the accuracy of population level monitoring.



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# Thank you

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