

Honeybee Foraging in a Mixed Crop Landscape

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Row crop production, largely corn and soybean grown for grain and silage, represents the dominant use of arable land in the United States and worldwide. There is a large body of literature on the risk, and consequences, to pollinators of pesticide use in these systems. Additionally, the contribution of row crops, self-pollinating plants traditionally considered not to feed pollinators, to honey bee colony nutrition is an important consideration. Cotton, corn, soybean, and peanut flower during months where alternate forage may be lacking in the environment. We used the honey bee waggle dance, which allows us to map where bees have foraged, and high-throughput sequencing and visual identification of returned pollen samples to determine when, and in what amount, bees prefer to forage in crop production fields. We also characterized insecticide exposure by quantifying residues in the pollen. Our two-year study took place in a largely agricultural landscape containing multiple crops. We will specifically address foraging in peanut across the growing season (April-October).