



Nonparametric Statistics Project

Honey Bee Health

Analyses of reasons and preventions for high
risk colony losses



TEAM MEMBERS

Marta Cerri

Luca Mainini

Lupo Marsigli

Eugenio Varetti

Dataset Description

For each state in US:

YEAR
from 2015
to 2022

Q1: January - March

Q2: April - June

Q3: July - September

Q4: October - December

Number of colonies

Number of colonies at the beginning of the quarter

Max number of colonies

Colonies plus all colonies moved into that state during the quarter

Colony lost

Percentage and absolute values of colony lost

Colony added

Colony that was either created or purchased

Colony renovated

Number of surviving colonies that were renewed

Stressors

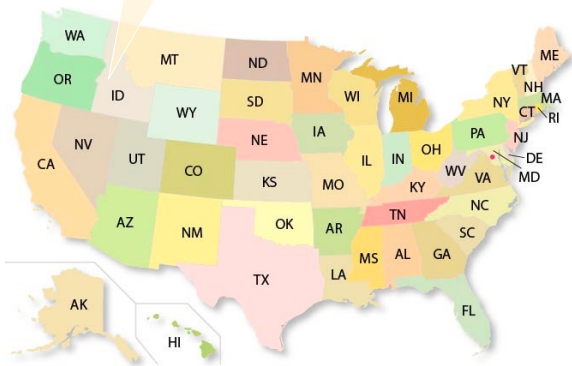
Percentage of colonies affected by different types of stressors (1 feature each)

Diseases

Pesticides

Other

Varroa mites



Goals of the project

- North American apiarists saw a **dramatic decline** in their honey bee colonies in last decade. When this phenomenon is particularly intense, we refer to it as “Colony Collapse Disorder”. Numerous causes for CCD have been proposed, but **no single stressor alone** seems to be responsible for the malady*.
- Our objective is to **understand possible precautions** that would **allow beekeepers to reduce future bee losses**, as acting on **stressors interactions** or moving the colonies to **new states** depending on **the season**.

* *Honeybee Veterinary Medicine*, Vidal-Naquet, 2018

Tentative analytical workflow

