Crop data analytics using non-image features

Data needed :

- Crop details

- Weather information

- Soil conditions

- Location

- Date of sowing

- Farm report

- Earlier advices

Data available :

- Weather details of Ranga reddy district
    - But farms are in Medak district.
- List of advices delivered previously.
- No other information is available.
- All the crops are of cotton and belong to same locality.

Text analysis of advisory data :

- Carried out by identifying the keywords.

- Similarity threshold was set and data divided was into clusters.

- Clusters were refined using k-means algorithm.

- Only textual data of advices was used.

- No other information was considered.

Results :

- In a week, around 20% of farms have faced distinct problems.

- ~40% of farms were in clusters of size > 5

- 2 or more farms belonging to same cluster eventually fell into different clusters in the subsequent weeks.

- Though all of them were cotton crops belonging to same area, they were facing different problems.
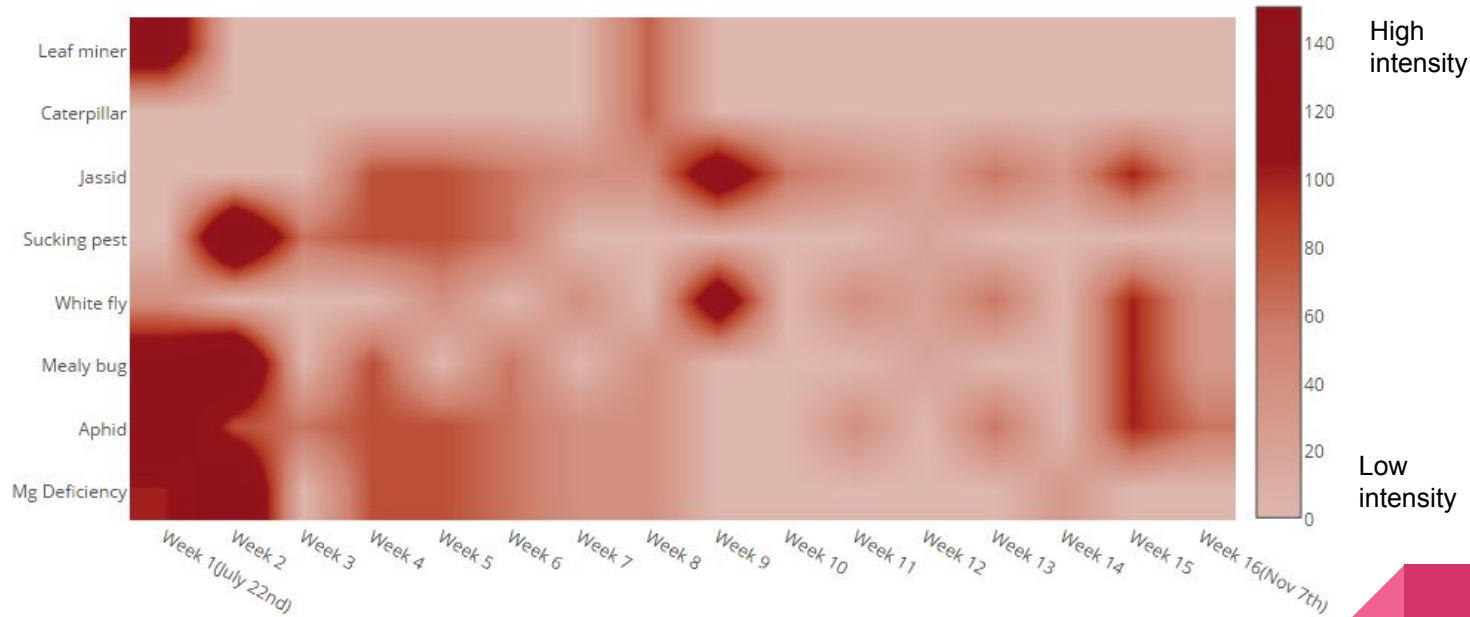
    ⇒ Other factors were not the same.

Limitations of textual analysis:

- Same pesticide which may control multiple pests.

- Different pesticides suggested by various scientists for the same problem.

- Preventive measure suggested in the anticipation of a pest will be counted as if the problem has occurred.

Dynamics of a single cotton crop :

Observations :

- We find that a certain pest(aphid) is common to the cotton crop throughout its growth.
- Certain pests like the whitefly start attacking the plant at a certain stage of growth.
- Some pests are confined to only initial stages of growth.
- Occurrence of certain problem is most likely to cause another problem/pest.

Considering all the mentioned factors and also by carrying out text analysis, we can improve the accuracy of the prediction.

Thank you