

## FERTILIZERS RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

### PROBLEM STATEMENT:

Mr. Raja is a 70 years old farmer. He has an own farming land and does agriculture for the past 25 years. For 25 years, he has been facing a problem of detecting the plant diseases on plants and recommending proper fertilizers to the plants.

- ❖ Most plants are affected by a wide variety of bacterial and fungal diseases. Generally, the plant diseases are caused by the abnormal physiological functionalities of plants.
- ❖ Diseases on plants placed a major constraint on the production and a major threat to food security. Hence, early and accurate identification of plant diseases is essential to ensure high quantity and best quality. In recent years, the number of diseases on plants and the degree of harm caused has increased due to the variation in pathogen varieties, changes in cultivation methods, and inadequate plant protection techniques.

FOR WHOM DOES THE PROBLEM AFFECT?	CULTIVATORS
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WHAT ARE THE BOUNDARIES OF THE PROBLEM?	PEOPLE WHO PRACTICE AGRICULTURE ON LARGE SCALE.
WHAT IS THE ISSUE?	<p>PLANT DISEASE, ESPECIALLY ON LEAVES, IS ONE OF THE MAJOR FACTORS OF REDUCTIONS IN BOTH QUALITY AND QUANTITY OF FOOD CROPS.</p> <p>➤ IN AGRICULTURAL ASPECTS, IF PLANTS IS AFFECTED BY LEAF DISEASE, THEN IT REDUCES THE GROWTH OF AGRICULTURAL LEVEL.</p>
WHEN DOES THE ISSUE OCCUR?	DURING THE CULTIVATION OF VARIOUS CROPS ON A LARGE SCALE, THE CROPS GETS AFFECTED BY VARIOUS PATHOLOGICAL DISEASES.
WHERE DOES THE ISSUE OCCUR?	IN THE REGIONS OR AREAS WHERE AGRICULTURE IS PRACTICED. [EX. RURAL AREAS]
WHY IS IT IMPORTANT TO FIX THE PROBLEM?	EARLY & ACCURATE IDENTIFICATION OF PLANT DISEASES IS ESSENTIAL TO ENSURE HIGH QUALITY & QUANTITY OF CROPS.

WHAT IS THE SOLUTION TO THIS PROBLEM?	AN AUTOMATED SYSTEM IS INTRODUCED TO IDENTIFY DIFFERENT DISEASES ON PLANTS BY CHECKING THE SYMPTOMS SHOWN ON LEAVES OF THE PLANTS.
WHAT METHODOLOGY IS USED TO SOLVE THIS PROBLEM?	DEEP LEARNING TECHNIQUES SUCH AS SEGMENTATION AND FEATURE EXTRACTION ARE USED TO IDENTIFY DISEASES AND SUGGEST PRECAUTIONS AND RECOMMEND APPROPRIATE FERTILIZERS TO PLANTS.