Synthesis of plant food other than carbohydrate:

Plants need proteins and fats besides the carbohydrate. Proteins are nitrogenous substances which contain nitrogen. Although nitrogen is present in abundance in atmosphere, but plant cannot absorb atmospheric nitrogen. Plant gets nitrogen from soil. Certain types of bacteria called rhizobium, are present in soil. They convert gaseous nitrogen into usable form and release it into the soil. Plants absorb these soluble forms of nitrogen along with water and other minerals through their roots.

Sometimes farmers add nitrogenous fertilizer to their field to fulfill the need of nitrogen. In this way plants gets fulfillment of nitrogen along with other nutrients. After the fulfillment of all nutrients plants synthesise proteins and fats.

EXPERIMENT

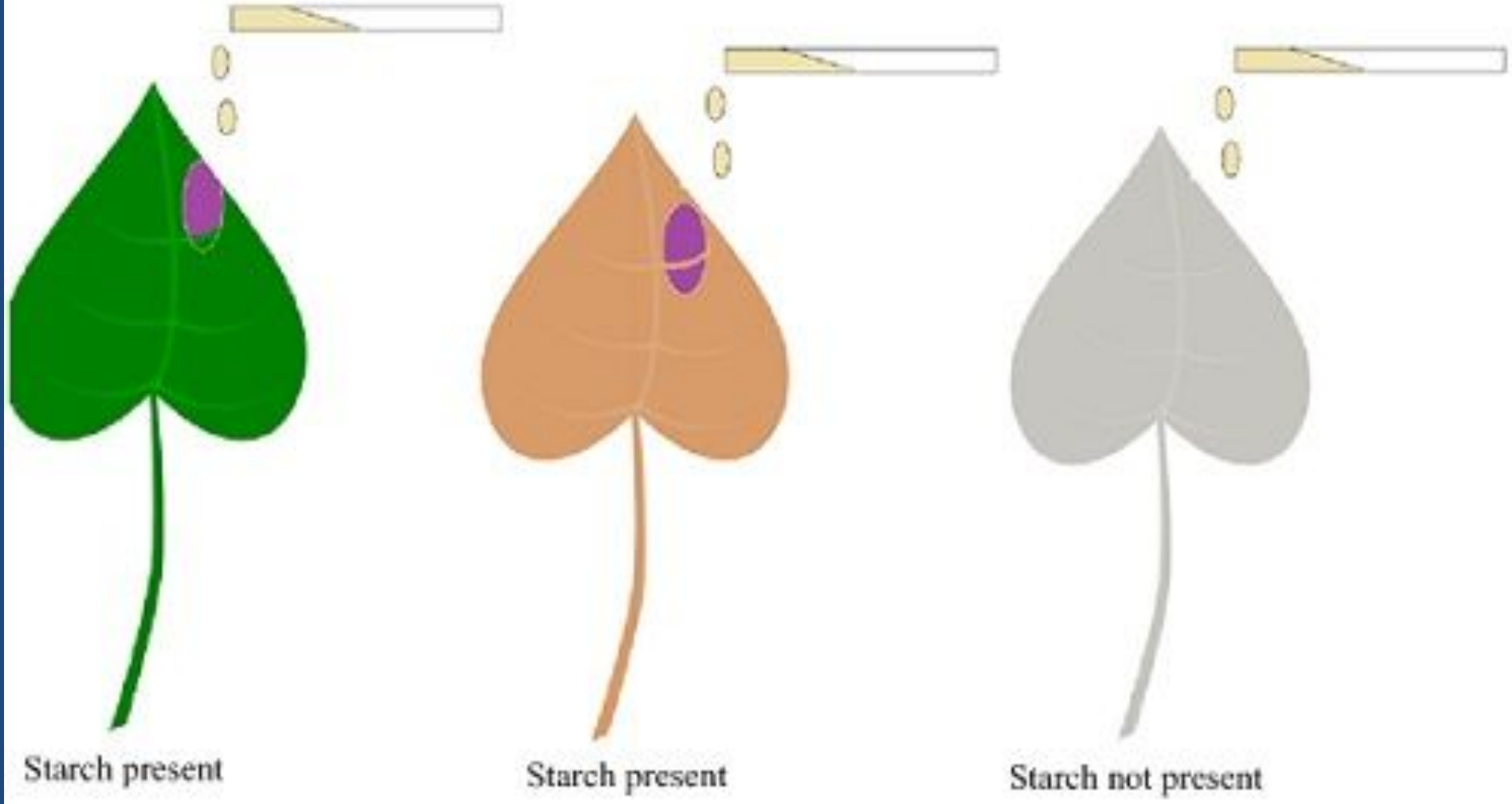
Experiment to prove leaves other than green in colour also undergo photosynthesis i.e. chlorophyll is necessary for photosynthesis-

Take some plants, one with green leaves and other with some other colour.

As we know that plants undergoing photosynthesis have stored carbohydrates in them.

- **Now performing iodine test will prove that leaves other than green in colour also have stored carbohydrates which in turn will prove that leaves other than green in colour also undergo photosynthesis because iodine in presence of starch turns into blue black colour.**

- **But if the leaf does not turn blue black on addition of iodine then it proves that the leaf belongs to a plant that does not undergo photosynthesis.**


Starch present
Starch present
Starch not present

- **Such plants containing non-green leaves but still exhibiting photosynthesis contains non-green pigments known as anthocyanins and carotenoids in addition to chlorophylls and this pigment anthocyanins are present in such large amounts that they cover up the green due to chlorophyll but the covered up chlorophyll continues to perform its function of carrying photosynthesis.**

PLENARY

Application Based Questions -

Q. . Can non green plants also show photosynthesis?If yes,How?

ASSESSMENT & EVALUATION

F.A.Q:

Question: 1 – What are the nutrients other than carbohydrates which are required by plants?
Answer: Proteins and fats are the nutrients; other than carbohydrates; which are required by plants.

Question: 2 – In which form do plants absorb nitrogen?
Answer: Plants absorb soluble form of nitrogen.

Question: 3 – Why do farmers add nitrogenous fertilizers to the soil?
Answer: Farmers add nitrogenous fertilizers to the soil to fulfill the requirement of nitrogen of the plants. Nitrogen is necessary to synthesise proteins.

Question: 4 – Which microorganism help to provide nitrogen to the plants?
Answer: A certain type of bacteria called rhizobium help to provide nitrogen to the plants.

Question: 5 – How do plants absorb nutrients other than carbohydrates from the soil?
Answer: Other nutrients are available in the soil in the form of minerals. Plants absorb these minerals from the soil; along with water.