



JYOTI NIVAS COLLEGE AUTONOMOUS, BENGALURU

DEPARTMENT OF BOTANY NEWS LETTER

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Plants and flowers taught me how to grow, by growing in secret and in silence.” - Michael Bassey Johnson.

Plants are essential to life on our planet. Plants fill an important psychological need. Plants in a landscape make work and play more enjoyable. The basic food for all organisms is produced by green plants. In the process of food production, oxygen is released. This oxygen, which we obtain from the air we breathe, is essential to life. The only source of food and oxygen are plants; no animal alone can supply these. Shelter, in the form of wood for houses; and clothing, in the form of cotton fibres, are obvious uses of plant materials. But we must not forget fuel, furniture, paper products, certain medicines like aspirin, and many other products like perfume and chewing gum. To these tangible aspects of the plant world, we must also add the importance of beauty and relaxation derived from plants. Since animals are surrounded by and dependent upon plants, the factors that influence plant growth, structure, and distribution, affect the animal world as well.

It gives me immense pleasure that the Department of Botany is bringing out their first issue of their newsletter “PHYTOJIVA” for the academic year 2021-2022 which is a collaborative endeavour of III BSc (CBZ & BCB) students. The students have contributed immensely to the same. I heartily congratulate them on this initiative.

I also congratulate the faculty members of the Department of Botany, Dr. Priyadarshini Pillai, Dr. Anand Raju V and Dr. Ancy David for supporting and motivating the students for this project.

May God bless you in all your endeavours!

Dr. Sr. Lalitha Thomas

Principal

PLANTS USE RNA TO TALK TO NEIGHBOURS .



A study finds that plants sharing the same growth medium can exchange microRNAs that silence genes in the recipient, suggesting the nucleic acids may act as signaling molecules. Plants use a variety of mechanisms to communicate with other organisms including one another. Volatile compounds can signal flowering and attract pollinators, Small RNAs are on that list of communication molecules. The Arabidopsis thaliana secretes microRNAs -a type of small, single-stranded RNAs-into its liquid growth medium. Nearby individuals then take up these RNAs, which alter their gene expression patterns by binding to messenger RNAs and preventing certain genes from being translated into proteins. In addition to their role as regulators of gene expression within an individual -as part of development or in response to stress- they have been implicated in defence against pathogens in recent years. Plants are also able to take up sprayed RNA molecules targeting genes from pathogens. The recent findings are the first evidence of plants taking up RNA secreted by other plants into the environment.

"To nurture a garden is to feed not just the body, but the soul."

- Alfred Austin

"By plucking her petals, you do not gather the beauty of the flower."

- Rabindranath Tagore.