

AWARENESS ABOUT PLANT HEALTH: AN UPSURGE NEED OF CURRENT ERA

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INTRODUCTION

Nature, the preeminent caretaker has provided plants as one of the precious gifts to mankind. Plants form an inextricable part of human experience. Apart from fulfilling the basic needs of life viz., food, shelter and clothing, plants are valued for scent, flavour, fuel, dyes, medicines and other qualities. Among all these, the extraordinary nutritional and healing capacity of plants has made an astounding effect on human health. Plants also add beauty to the surroundings and contribute a great deal to man's pleasure. For these reasons, plant health can't be ignored. Recently, health of crop plants as well as wild plants is under threat due to climatic changes, increased urbanization, anthropogenic activities, degradation of ecosystems, reduced biodiversity and formation of new niches of pests (2020). This led to an upsurge in the need of creating awareness about improving plant health by various means.

CONTEXT

Current dynamic growth in the world's population demands elevated supply of food. But recent years indicated frequent outbreaks of plant diseases across the globe in agricultural crops. In 2016-17, wheat blast disease had caused 30% loss of wheat in Asia. '*Xylella fastidiosa*' disease of olive affected 1 million trees in Southern Europe in 2014. Rust disease of coffee plants led to loss of more than 5,00,000 jobs in Central America (Caribbean region) in 2012. Annually 40% of global production of agriculture is reduced due to pests (2020). As far as India is concerned, in January 2019, the country had faced an attack of 'Fall Armyworm' on maize which spread to 10 different states in nine months (2019). Agriculture, with its allied sectors, is the most important sector of Indian Economy. India is the global leader in production of pulses, rice, wheat, spices and spice products. It provides employment to 50% of the country's workforce which accounts for 18% gross domestic product (GDP) (Madhusudhan, 2015). For a heavily populated country like India, food security can be assured by cultivation of crops with high yield, effective use of land mass, water management and pest control. There exists additional ways to achieve agricultural success such as organic farming, use of disease resistant varieties, genetic engineered plants, early detection and

control of diseases by plant health clinics. Among these, production of genetically superior and healthy agricultural varieties is on top most priority.

Evolution is a constant process which takes place in diverse ecosystems. It allows superior varieties to evolve and to sustain in unfavourable conditions. It is a well known fact that intensive monoculturing based agricultural practices invite pest attack and cause massive loss. It does not allow crops to evolve naturally to fight with diseases. Hence the onset of plant disease can be avoided by cultivating healthy plants. It can be achieved by innovative technologies of hybridization and crop improvement programmes. There are traditional hybridization and modern recombinant DNA technologies available which utilize quality genes. Both these techniques greatly rely on the available gene pool of plants in nature, i.e. genetic biodiversity which is found in highly biodiverse regions.

Such mega biodiversity centres of the world are mainly located in developing and poor countries of Africa, Asia and Southern America. Rapid developmental activities of these countries are constantly putting pressure on wild flora and fauna. It is reported that 42% of global plant species have vanished from nature in the last decade due to anthropogenic activities and not due to natural causes (Meenakshi, 2018). Biodiversity of plants is reducing day by day due to overpopulation, excessive exploitation of resources, loss of forests land and climatic changes. In some places forest lands are converted to agricultural sectors for generating effective income sources. From 2001 to 2018, Indonesia has lost 16% of tropical forest covering ~26 million hectares area for oil palm cultivation (Zoe, 2019). India is also one of the mega biodiversity centres with 45000 different plant species. It has been a treasure house of valuable plants. The plant diversity is quite versatile due to variation in topography, climatic conditions and other ecological factors (2020). But the two hotspots of India, Western Ghats and Himalayan region are struggling for their existence. They are the major pool of genetic diversity. Decline in Indian forest cover can severely reduce all wild relatives of Indian rice, wheat and pulses from nature as most of them are endemic. Thereby cut down chances of producing better varieties of crops by hybridization involving wild stock plants. India is also trading forest products, mainly herbal medicinal compounds. Around 90% of Indian plants are medicinal in action and are mainly collected from forests. Thus conservation of available wild flora is important not only for nutritional but also for medicinal purposes. It is observed that plant health is always connected to the health of crop plants only. But in reality food and health security can be assured for mankind by protecting and conserving forest flora. This is possible by strategic management of all bio-resources and sustainable use

of natural commodities by all people. For this purpose, mass communication should be carried out through awareness programmes involving farmers and tribal people.

The year 2020 has been declared as 'International Year of Plant Health' by The Food and Agriculture Organization (FAO). It is an opportunity to celebrate the health of all green plants which are an indispensable component of human life. Since ages, plants have provided us with several products, a safe environment and economic benefits. Therefore in the current scenario, all tribal communities, farmers, academicians, scientists, industrialists, consumers and NGOs are real stakeholders who can undertake responsibility of plant health for the sustenance of the human race.

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