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Communication Between Plants.

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ABSTRACT:

When it comes to talking plants and trees, history is replete with umpteen number of anecdotes and allegories. If Muhammad had a detailed conversation with the weeping palm tree, Alexander the great often conversed with a happy talking tree. In the Geek culture, Druids possessed the power to speak to the trees for oracles. Through this essay, I want to dwell on the prompt that plants really talk, and how this claim can be substantiated with reference to research and evidence.

INTRODUCTION:

The existence of plants on our beautiful planet came into being way ahead of humans. Plants do express themselves in ways unique to them but unknown to us. The verb “talk” refers to the act of communication which can include expressing of ideas and emotions, most commonly through words through other systems could be included, for example; the morse code or other sounds or electronic signaling. Before starting the saga of the communicative power of the plants, I must elucidate that the talking of plants does not have the connotation of a talk between humans. Their communication is not tantamount to the conversation that requires vocal cords. They don’t chat with gestures or body language. They do communicate but through electric impulses that too in varying frequencies unattended by the human ears.

RESEARCH:

The scope of this research includes the various scientific studies that have been carried out in different parts of the world with a view to establishing the holistic objective that plants can talk. One of the pioneers who brought to us the scientific canon of the talking plants was no other than the eminent botanist and evolutionist Charles Darwin who came up with the sensational theory of the survival of the fittest. Plants have been on this planet before the quadruped, and it is their defense mechanism and adaptability that made them survive for billions of years. Darwin even conjectured that plants have brain like structure at the vertex of their roots, and they use their cerebral powers to communicate with one another. Darwin conducted several experiments in 1870s and showed how plants communicate with one another through chemical signals produced through their hormones. He also showed that plants use defensive traits and warn each other when there is a possibly of a parasitic attack on them.

More studies were conducted to establish the fact that plants have aural tendencies and that they produce ultrasonic frequencies which cannot be deciphered by men. The 2013-Australian research revealed that budding maize roots often produce a clicking sound of a very low frequency. Insects and other plants can catch this frequency, and consequently exchange of information takes place between them. Similar researches in China claimed that sounds of very low frequency can bring changes in the genetic composition of the plants.

Thus, plants not only speak; they hear as well. The credit goes to the research conducted by Gagliaon at the university of Western Australia through which she proved evidentially that “Plants exposed to audio of the munching of caterpillars produce more chemicals to deter feeding when exposed to real hungry caterpillars.” The laser vibrometer used by her successfully recorded the sound produced at the roots of the plants whenever water was poured in the proximity of the plant roots. The plants felt happy and full of exuberance whenever they felt near water.

This research serves as the springboard which gave several other botanists ample opportunities to conduct more such revolutionary experiments, and soon in 2019, a group of researchers proved experientially that plants were able to produce more sugar content when they were exposed to the buzzing of bees. Why do plants act in this way? The reason is both simple and scientific. Bees help plants in pollination and whenever the plants find the bees in the surroundings, they try to lure the bees by calling them thereby increasing the ambit of pollination. Isn't that a survival trait of the plants? Thus sound is essential in their growth and reproduction.

There is no gainsaying that plants exhibit extreme intelligence-a fact that enables them to exist until today. They wield a perfect defence mechanism and involve themselves socially in warning other plants of the lurking danger to their existence. For example, plants can warn one another through electric impulses of the imminent "aphid attacks via thread-like filaments of fungi that connect roots in complex communication networks." This research is revolutionary as it shows that plants exert the power of choosing their kins and discarding the strangers.

India is a country where plants and trees are worshipped universally. And it is not possible that research remains aloof from authenticating the most cherished ideas that plants talk with each other. In this regard the research conducted by Bengaluru's 'tree doctor' is remarkable as through his experiments Vijay brought to the fore the fact that plants talk to each other through sounds. Vijay calls these sounds as musical notes. Using use MIDI (Musical Instrument Digital Interface) technology, he has been successful in mapping the electromagnetic signals emitted by plants. It will not be a hyperbole to say that Vijay pioneered a number of researches initiated by other scientists and showed that plants can feel pain and affection. Thus plants talk, feel and warn, similar to the humans. Indubitably, plants and humans share the same electric impulses. Similar to humans plants can also decide the sensation of "face or fear." In other words they can technically sense what we do through the so called human emotions and intuitions.

Further researches carried out in India brought unexpected but positive results so far the communicative skills of the plants was concerned. In the light of these researches, a correlation between plants and music was established. A group of researchers at the university of Osmania subjected the chosen 30 roses to different genres of music such as the Indian classical and Vedic chanting. An equal number of roses was marked under the silent control group. The results were conducive to the anticipation and over the period of two months the roses that experienced Vedic chants and Indian classical music outperformed the silent control group. What does this study show? Plants have the emotional and perceptual senses and they can bloom or wither depending upon the atmosphere created in their ambience.

When similar researches were conducted in the West, the results were enthusiastic. In 2019 botanists experimented on sweet peas and subjected them to heavy classical western and rock music in a greenhouse. Scientists went on to the extent of selecting a control group of peas, subjecting them to vulgar and vituperative language. The difference was evident after a month of study carried out under strict variable control. The peas that regaled the harmony of the enchanting music produced extremely sweet peas while the other group of peas just produced decayed and wilted peas. Shakespeare once said that music is the food of love, and accordingly many questions arise: Do plants carry the spirit of love also? Do they have a spiritual propensity given the fact that they bloomed when exposed to classical music and withered in the wake of vulgar and cacophonous music. There is no exaggeration in saying that during further researches it was soon established that plants responded overzealously when Beethoven's "Moonlight Sonata" was played around them.

OBSERVATIONS

In short, the researches carried out on plants evidentially showed that plants perceive and wield sounds waves for germination, pollination and growth. Depending upon the different sounds plants undergo varying changes in their genetic and biological structure. Plants were found to be using music for stress management and abiotic resistivity. They used the sound to delay the ripening of fruits and also to increase photosynthesis.

CONCLUSION

Plants come and go just like any other species of living creatures, and communication is a distinguishing characteristic that gives them power to exist and evolve. The green verdant world of the plants is a living testimony of the way plants thrive on the planet. They not only talk but also sing and vacillate. The plants cannot move but when it comes to socializing and interacting, they have a keen sense of their kith and kin, and they use their emotions to scare or gravitate to the other plants through their music. It was for their intelligence that Pythagoras was able to hear the music of the plants and the harmony of the spheres. There

permeates a music in the meadows! Plants are our predecessors and there is no doubt that the prehistoric men imbibed the quintessence of talking and singing from them. It is the need of the hour that man takes the initiative of starting a more innate relationship with the plants. Let us speak to every blade of grass, a root, or a shoot, and learn how nature is vested in every inch of the green. See how this music spiritizes the human soul!

If there is a rapture on the lonely shore, if there is a silence in the deep woods, there is transcendent and eternal music in the trees. Plants have their own ballads, rhythm, and rhyme. They have thunder, they have lightning, they have symphony. They stoop when sad and challenge the skies when enthusiastic. Unlike the humans, their language is not limited by the tower of babel; it is governed by the instincts of love and defense. They have vibrations, frequencies, and resistance.

“To me the meanest flower that blows can give Thoughts that do often lie too deep for tears.”

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