



ZAIRA CELEBRATES VAN MAHOTSAV



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*This story is dedicated to my parents.
For their endless love, support and encouragement.*

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Thank you, Lord, for always being there for me.

"In all things of nature there is something of the marvelous."

— Aristotle

It was that time of the year when people all over the country celebrated the gems of the planet - TREES . Just like everyone in her city, Zaira, a twelve-year-old girl was excited to celebrate 'Van Mahotsav' by planting trees with her family.

In India, 'Van Mahotsav', an annual one-week tree planting festival is celebrated in the first week of July. 'Van' means forest and 'Mahotsav' means grand festival. Dr. Kanaiyalal Maneklal Munshi initiated this movement in the year 1950. The idea behind it was to create awareness regarding the importance and preservation of forests.

The sky is clear and the sun is shining brightly. There is a huge smile on Zaira's face as she sets out with her family to find the perfect location to sow the seeds for her banana tree. She carries her green basket filled with seeds and hands over the tool bag to her father.

"Come on Zaira...hurry up...we don't want to be late" said Zaira's mother.

"How much further to go?" asked Zaira.

"Darling, just five more minutes and we will reach our destination" replied her father.

Zaira and her parents reached Suman Forest and saw people celebrating Van Mahotsav. After her parents chose three different locations to sow the seeds, they let Zaira plant the seeds in her spot.

"Please help me little girl !!"

Zaira raises her head and looks around but finds no one. She continues working.

"Over here! Please save me."

Zaira looks up again and realizes that the mango tree (*Mangifera Indica*) is trying to communicate with her.

"Did you say something?" Zaira asked the mango tree.

"Yes! It was me who was calling you for help!" replied the mango tree.

Zaira asked surprisingly, "You can talk ?!"

"Yes, I can and I'm sorry if I scared you but I really need your help."

"Yes, sure, tell me what I can do for you!" Zaira said sympathetically.

"Well, do you see these yellow-greenish plants near me? They are Yellow coralroot (*Corallorhiza Trifida*). They might look pretty from the outside, but they have a dark side too. They are stealing all my resources and my other tree friend, Neem tree's (*Azadirachta Indica*) resources as well by hacking our *Mycorrhizal* system!"

"Myco.....mycori.....what system did you just say?" Zaira asked curiously.

"MY-CO-RHI-ZAL SYSTEM", replied the mango tree and the neem tree.

With a confused look on her face, Zaira asked, "What is that? I've never heard of it! Will you please tell me what it is?"

"Yes, we will tell you but first you must remove this plant as soon as possible" said the trees.

"Oh ok! Let me get these plants away from you so that they don't steal your resources and cause you any harm." Zaira replied hastily.

Zaira quickly removed the Yellow coralroot plants and puts them away in her basket.

"There! All done! Do you feel better now?" enquired Zaira.

"Yes, thank you very much for saving our lives. You wanted to know about the mycorrhizal system, right?"

So, listen carefully. Our roots have partnered with the symbiotic fungi called mycorrhizae that grow around and inside our roots. The fungi provide the trees with nutrients and in turn they receive sugars", explained the mango tree.

"Hold on...that's another new word! *Symbiotic*? What does that mean?" said Zaira.

"Well...Symbiosis is a relationship between two types of animals or plants in which each provides the other the conditions necessary for their continued existence. They cannot live without each other", clarified the neem tree.

"Oh...so that's what symbiosis means. So, you have a symbiotic relationship with fungi?" probed Zaira.

"Yes...you are right! The symbiotic relationship between us and the fungi was observed and recorded by Franciszek Kamienski in 1879-1882. However, it was Albert Bernhard Frank who introduced the term "Mycorrhiza" in 1885 for our fungi friends", said the mango tree.

The neem tree gets excited and joins the conversation, "You see little girl, Mycorrhiza means 'fungus root'. Mycor is Latin for "fungus" and Rhiza is Greek for "root". These fungi have countless branching thread-like structures called hyphae that together form the mycelium. The mycelium spreads across a much larger area than the tree root system and connects the roots of different trees together. These connections form Mycorrhizal networks through which fungi can help in water absorption and more effective nutrient uptake than the root themselves, pass resources and signaling molecules between trees. More than ninety percent of plant species form a symbiotic relationship with the mycorrhizal fungi."

"WOW! That's so interesting! I never knew that! Can you tell me more about the network?", exclaimed Zaira.

The mango tree starts explaining Zaira about the network.

"Well...did you know that this system has been nicknamed as the Wood Wide Web. The oldest trees fondly known as mother trees have the largest mycorrhizal networks with the most connections to other trees. The fungal network is used by the mother trees to supply the shaded seedlings with sugars in order to provide them a better chance of survival. Sick and dying trees dump their resources into the network which might be used by other neighbouring trees. Plants also make use of this network by sending messages to one another, for example when they are under attack by aphids, they release chemical signals through their roots which can warn their neighbours to raise their defenses."

"That is amazing! Thank you so much for teaching me so many new things." Zaira was delighted to learn so much about the trees and their special relationship with the fungi.

"You are most welcome; however, I must inform you that our fungi friends are at risk too. Many common practices can degrade the mycorrhizae such as tillage, removal of topsoil, erosion and invasion of weeds. You see we need our friends to make us stronger, especially during drought periods and unwanted pathogens", informed the mango tree.

"Oh! I see! Then we must inform others that your fungi friends are at risk too and we should help them by creating awareness about them."

"That's an excellent idea! Will you help us?" said the neem tree.

Zaira replied happily, "Well of course I will! After I am done planting the seeds of the banana tree, I am going to go back home and share the information at my School's Science Fair. I will also share this information with all my friends and especially my Grandma. Did you know that in my Grandma's village of Piplantri in Rajasthan, every time a girl is born 111 trees are planted in the village to honour the girl child and Piplantri has been a proud advocate and ambassador of eco-feminism. The community makes sure these trees survive and grow as do the girls. Isn't this amazing!"

The trees looked at each other and were in a state of awe. They replied, "Wow, that is such a beautiful thing to do and what a wonderful initiative."

"Zaira...Zaira.....come on let's go! The sun is setting and we are getting late." cried Zaira's mother.

Zaira quickly finished her work and packed her things. She hugged the trees and said, "This has been the best Van Mahotsav ever!"

THE END