

Living together helps everyone grow!

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Scientists studying the recent outbreak of fungus infection in teak trees in the Khandwa region, Madhya Pradesh have said that a variety of species, other than teak, need to be planted, to make sure that teak saplings get the correct nutrition.

How could planting competitors for nutrition help the teak saplings?

The fact, of course, is that more species means less teak trees and the nutrition drawn by a teak tree would be almost the same. But more species would ensure the balance of nutritional components and promote healthy trees all round, teak included.

Sitting duck for parasites

A specialized bio-system, like a plantation of only teak, is a sitting duck for parasites. A natural forest is thus never of just teak, but has the diversity of mutually supporting species, co-operating both against predators as well as sustaining the nutritional viability of the land.

A parasite that selectively attacks teak would find the presence of other species an impediment to undisturbed multiplication. Similarly, the teak would protect the other species against parasites that threaten them. If one species increased out of proportion, these very parasites would get active and keep down the population of the runaway species. Just as reduction of population of a species would lead to the parasites having a harder time, and the population would rise again.

The mix of species in a natural forest is in continuous adjustment for optimum survival of the mutually co-operating species. Naturally occurring, wild strains of cereal and other food plants are thus likely to survive even if some sudden epidemic or mishap, with the use of fertilizers or insecticides, wipes out cultivated strains. This is an important reason to make sure that sufficient acreage of wild and natural vegetation be allowed to survive.

More species ensure balance

In the matter of nutrition also, the same symbiotic protection becomes effective. If a plantation consists largely of a species that draws more of particular nutrients from the ground, those nutrients are likely to be depleted, in time. But if there is a variety of species, then the mix of nutrients drawn would stabilize after some time. And the mechanisms that replace the nutrients, like nitrogen fixation, seepage, bacterial action, etc., can keep the level of nutrients adequate for the different, dependant species. Again, if one species increased in number, the particular nutrients it used most would begin to reduce and the growth of the species would slow down. The mix of species in the forest would thus remain stable so long as conditions like rainfall, sunlight, soil quality remain unchanged.

Simply having a forest with *less* trees, but of a particular kind would not serve. It is still necessary to have diverse species. Having less trees of just one species would result in specific

nutrient components being drawn out. Over time, the land would contain a smaller and smaller component of those nutrients, and the land would be unable to support even the sparse population of the species that needs that component. Having other species present would result in other nutrient components being drawn out as well and this would maintain the chemical balance of the soil.

This is why *all* species thrive in highly diverse plantations like rain forests or thick natural collections of plants.
