

Hippomane mancinella

The Manchineel Tree – the most dangerous tree on earth!



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Our recent stories of toxic *Euphorbia* plants led to a request to write about the Manchineel Tree – *Hippomane mancinella* – known as the most dangerous tree on earth. The Spanish name suits it well – La Manzanilla de la Muerte – Little Apple of Death

The Manchineel Tree is a native of the Caribbean where it grows among mangroves in shoreline habitats, along beaches and coastal swamps, from Florida, through Central America to the northern coastline of South America, on Caribbean islands and on the Galapagos Islands. There are reports of its introduction to the west coast of North Africa.

Every part of the tree is dangerous; in fact, it is listed in the Guinness Book of Records as the *World's Most Dangerous Tree*.



Map: Discover Life

<https://www.discoverlife.org/mp/20q?search=Hippomane+mancinella&flags=col1:&res=640>

The sap in wood and leaves is extremely poisonous and minimal contact with human skin can cause severe blistering, burning and inflammation. Blindness can follow if one is unfortunate to get sap in the eyes. Unfortunately, the toxic elements in leaves are soluble, so standing under Manchineel trees in the



Apple-like fruit of the Manchineel Tree. Photo: Dick Culbert from Gibsons, B.C., Canada / CC BY (<https://creativecommons.org/licenses/by/2.0>)

molecules that have two terpene chemical groups. Phorbols mimic *diacylglycerol* – a fatty molecule in our bodies – and one of the ways in which it works is to activate a particular enzyme *protein kinase C* (PKC), which regulates metabolic activity and growth. The problem is that when phorbols over-activate PKC, the cells increase their expression of genes involved in inflammation and cell death, leading an extreme immune reaction.

Curiously, the *over activation* of PKC seems to be not dissimilar to the action of Covid_19, where levels of cytokines – chemical signaling molecules that guide normal, healthy immune responses to infection – surge far beyond necessary levels, producing *cytokine storms* and hyper-inflammation.

Why are Manchineel trees so toxic? There doesn't seem to be a particular reason. Many plants are dispersed by animals that eat fruit, but in this case, eating the toxic fruit would kill most animals. However, the trees do have a logical alternative dispersal mechanism as they grow along the coast and the lightweight, buoyant fruits readily float

rain will cause blistering. Even the smoke from burning trees is dangerous and can also lead to blindness.

The small greenish yellow fruit look like small apples but a single bite can kill. Initially the fruit tastes quite sweet, but soon becomes peppery then causes intense pain and extreme blistering and swelling of mouth, throat and intestines.

The sap in the wood and leaves contains a number of toxins, but of these, the nastiest are *phorbols*, organic



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on water. Mind you, there are a few animals, the *Spiny Tailed Iguana* and the *Giant Galapagos Tortoise*, that, somehow, manage to live in or under the trees and eat the fruit!



In spite of their toxicity, Manchineel Trees have long been harvested for timber for furniture. Nobody would use an axe or saw to cut

one down so the trees are burned at the base and the timber left for several days in the sun to neutralize the sap. Manchineels are also considered vital in coastal ecosystems as they are deep rooted, stabilize sand and reduce beach erosion. They also form excellent natural windbreaks.

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Guinness World Records:

<https://www.guinnessworldrecords.com/world-records/most-dangerous-tree>

Nerdfighteria Wiki, SciShow, *The Little Apple of Death*:
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Wikipedia: <https://en.wikipedia.org/wiki/Manchineel>



Red warning band painted on the trunk of a Manchineel Tree. Photo: Mica / CC BY (<https://creativecommons.org/licenses/by/3.0>)



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