Hughie Jones - April 2021

Mayapple *(Podophyllum peltatum)*
Barberry family (Berberidaceae)

Mayapple is a plant that makes you wish you could see through its leaves and right into the earth. Imagine being able to look into the underground rhizome connecting all these plants together in their colony. And you wouldn't have to lift the leaves to check for its flower in May and fruit in late summer. This eastern North American native keeps both flower and fruit well hidden.

In early April the unopened leaves of Mayapple (Podophyllum peltatum) poke through the forest. They look like green toadstools springing up suddenly. And once you see one, you notice they are everywhere. The white waxy flowers with a musky or pungent smell come in May. They have no nectar but are rich in pollen, yet successful pollination is not high with Mayapple flowers. Queen bumblebees are especially attracted to its flowers to collect pollen for rearing workers and may be the primary pollinators.

Fruit set rates are often low for individual colonies of plants, and mature fruits are even rarer. These resemble a small lemon-colour egg-shaped fruit and mature by August. The eastern box turtle is thought to be the main seed disperser. If the seeds remain in the same area as the parent colony, the germination rate is low. If the seed does germinate, the seedling may be shaded out by other individuals the next spring.

This all makes sense and is good plant strategy. That is because rhizomes, horizontal underground stems, are the main method of producing new plants for Mayapple. Mayapple may put up to 40 percent of its energy into its underground rhizome compared to only 8 percent of its energy into sexual reproduction.

A colony of Mayapple plants could all have developed from a single seed. A seed once it germinates will not form a rhizome until it is over five years old and may not produce blooms

until a plant is 12 years old. Colonies grow at a rate of 10 to 15 cm a year (4 to 6 in) and very large colonies can be more than 100 years old.

Today drugs derived from the rhizome are being tested in the United States to treat different forms of cancer. Research shows evidence of Mayapple extract that inhibits cell division, blocking new growth of tumours. And in the past Native Americans were already using Mayapple to treat forms of cancer, such as ovarian and skin cancer.

In May 2020 I saw lots of flowers on the colonies of Mayapple on the path around Roy Forster Cypress Pond but not much fruit. And hardly any of it stayed on long enough to ripen. You can eat the ripe fruits in moderation but not the seeds or any other part of the plant. All parts of the plant, except the ripe fruit, contain podophyllotoxin - highly toxic if consumed. Beware.



The Mayapple colony and flower pictures are from the University of Wisconsin Horticulture; the ones of Mayapple unfurling in spring and its fruit ripening were taken in VanDusen.

https://vnps.org/princewilliamwildflowersociety/botanizing-with-marion/mayapple-plant-profile/
https://hort.extension.wisc.edu/articles/mayapple-podophyllum-peltatum/
https://www.indefenseofplants.com/blog/2015/5/21/mayapple