# Native Plants of Taiwan

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# Introduction

Taiwan, a mountainous island perched on the western edge of the Pacific Rim, is a singular hotspot of botanical diversity. Despite covering just over 36,000 square kilometers, Taiwan harbors a staggering array of native plant life, earning international recognition for its remarkable biodiversity. This richness is a direct result of the island's unique position at the intersection of tropical and subtropical zones, together with dramatic variation in altitude and a complex geological history. As the Tropic of Cancer slices through its landscape and over 200 peaks soar above 3,000 meters, Taiwan provides a microcosm of habitats—ranging from lush coastal forests and sun-baked lowlands to misty montane woodlands and frigid alpine meadows.

One of the most striking characteristics of Taiwan's plant life is its high degree of endemism. Roughly a quarter of the island's vascular plant species are found nowhere else on Earth. This exceptional rate is a testament to the effects of isolation and the evolutionary pressures imposed by changing climates, shifting tectonic plates, and the rugged rise of mountain ranges that bisect the island. From dazzling orchids tucked in cloud forests to ancient cypress giants rooted in remote valleys, each species bears witness to millennia of adaptation, speciation, and survival.

Yet the story of Taiwan's native flora is not just one of biological wonder. Deep cultural connections bind the people of Taiwan to their botanical environment. For generations, indigenous communities have developed sophisticated knowledge systems, using native plants for food, medicine, shelter, tools, and ceremonial uses. This time-honored wisdom continues to inform contemporary life, shaping the ways people interact with their natural surroundings even as modernity brings unprecedented change.

Such richness, however, faces many threats. Habitat loss from urbanization, agriculture, and infrastructure development has exacted a heavy toll on lowland and coastal species. Invasive plants, once introduced for horticulture or accident, now spread rapidly and outcompete native flora. Meanwhile, climate change raises new uncertainties, altering rainfall patterns, shifting growing seasons, and putting rare alpine plants at risk as suitable habitat contracts upwards towards the summits.

In recognition of these challenges, Taiwan's government and a network of devoted conservationists have established ambitious projects and protective areas aimed at preserving native biodiversity. Efforts now combine field research, habitat restoration, ex-situ conservation, and the incorporation of traditional ecological knowledge. Digital resources and scientific publications—such as the comprehensive *Flora of Taiwan*—continue to grow, supporting research and education.

This guidebook seeks to introduce the incomparable tapestry of Taiwan’s native plants. Across its chapters, readers will journey from shimmering coastlines to high mountain ridges, learning to recognize key plant groups, explore the cultural narratives intertwined with them, and appreciate the ongoing efforts to protect and celebrate Taiwan’s irreplaceable natural heritage. Whether you are a botanist, a hiker, a student, or simply a lover of wild places, this book provides an invitation to discover—and help preserve—the living green legacy of Taiwan.

# CHAPTER ONE: The Geographic and Climatic Foundations of Taiwan’s Flora

Taiwan, often affectionately referred to as Ilha Formosa, the "Beautiful Island," is a place where powerful geological forces meet dynamic climatic patterns. Its very existence and the incredible variety of life it supports are inextricably linked to its unique geographic position and dramatic topography. Situated off the southeastern coast of the Asian mainland, Taiwan lies at a crucial juncture between major floristic regions, influenced by both the temperate flora of East Asia and the tropical flora to the south. This strategic location, coupled with millions of years of geological upheaval, has forged an environment that acts as a natural crucible for biodiversity.

The island straddles the Tropic of Cancer, a significant line of latitude that runs roughly through the middle of the island near Chiayi. This geographical marker means that Taiwan experiences a transition from subtropical climates in the north to tropical climates in the south. It's a neat line on a map, but in reality, this transition isn't a sudden switch; rather, it's a gradual shift in temperature and rainfall patterns that creates a mosaic of conditions across the island. The north tends to be humid and subtropical with more distinct seasonal temperature variations, while the south leans towards a tropical monsoon climate, characterized by less noticeable temperature shifts and a pronounced wet season.



However, latitude is only part of the story. Taiwan's true botanical richness is perhaps most profoundly shaped by its mountainous spine. The island is dominated by rugged terrain, with mountain ranges covering approximately two-thirds of its total area. The Central Mountain Range, a formidable chain running from north-northeast to south-southwest, forms the backbone of the island. This isn't just a gentle rise; Taiwan boasts over 200 peaks soaring higher than 3,000 meters (nearly 10,000 feet), including Yushan (Jade Mountain), which reaches 3,952 meters (12,966 feet) and ranks as the fourth-highest island peak in the world.

This extreme variation in elevation within a relatively small landmass is a botanical game-changer. As altitude increases, temperature generally decreases, and other factors like rainfall, sunlight intensity, and wind patterns change dramatically. This creates a vertical zonation of climate, effectively packing a wide range of temperature and moisture regimes – from tropical warmth at sea level to nearly alpine conditions on the highest summits – onto a single island. It's like driving from the tropics to the arctic in just a few hours, experiencing drastically different plant communities along the way, all without leaving the island.

The formation of these imposing mountains is a tale of tectonic plates locked in a slow-motion collision. Taiwan sits at a complex convergent boundary where the Philippine Sea Plate is pushing against the Eurasian Plate. This ongoing geological squeeze, active for the past 4 to 5 million years, has buckled and uplifted the Earth's crust, sculpting the dramatic peaks and deep valleys we see today. This geological youth means the landscape is still highly dynamic, prone to earthquakes and characterized by steep slopes and rapid erosion, which in turn influences soil composition and habitat availability.

Beyond temperature, water is another critical player shaped by Taiwan's geography and climate. The island is subject to the East Asian Monsoon system, which brings distinct wet and dry seasons to different parts of the island. The northeast experiences steady rain during the winter monsoon (November to March), while the central and southern regions have sunny, dry winters. Come summer, the southwest monsoon arrives, bringing heavy rainfall, often concentrated between May and August, particularly to central and southern Taiwan, frequently in the form of intense afternoon thunderstorms and typhoons.

Rainfall isn't uniform across the island; it varies considerably depending on location and elevation. Mountainous areas, intercepting moisture-laden air, receive significantly higher precipitation than the lowlands. Some foothill areas can record almost 6,000 mm of rain in a typical year, while during typhoons, parts of the island can be inundated with over 2,000 mm in less than 48 hours – a truly impressive, if sometimes destructive, amount of water. This abundant and varied rainfall supports the island's luxuriant vegetation, from the steamy lowlands to the misty mountain forests.

The complex interplay of these factors – latitude providing a tropical to subtropical base, tectonic activity building towering mountains, and the monsoon system delivering variable rainfall – creates a remarkable array of microclimates and habitats. Coastal areas face salt spray and strong winds, while inland plains experience higher temperatures. The western slopes of the mountains, in the rain shadow during the winter monsoon, differ from the eastern slopes, which drop sharply to the Pacific and receive more consistent moisture. Valleys, plateaus, and different soil types add further layers of complexity to this environmental mosaic.

This environmental complexity is the bedrock upon which Taiwan's rich flora has evolved. Each subtle variation in temperature, moisture, light, and soil offers a unique niche for plants to adapt and thrive. The isolation of the island, combined with the diverse "habitat islands" created by the mountains, has also played a crucial role in fostering the high number of endemic species found here – plants that have evolved in Taiwan and exist nowhere else on Earth. The stage is set, a small island with a giant personality when it comes to its natural environment, ready to showcase its

extraordinary botanical inhabitants.

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