

Identification of the Four Forms of *Plumeria rubra*

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ADDITIONAL INDEX WORDS. frangipani, *Plumeria acuminata*, *Plumeria acutifolia*, *Plumeria lutea*, *Plumeria tricolor*, plumeria hybrids

The number of *Plumeria* species range from five to 45. *Plumeria rubra* L. is apparently the source of many *Plumeria* cultivars. The species is the parent stock for many color variations and many of the named cultivars we have today. In the past, flower colors of *Plumeria rubra* were considered distinct species but are now regarded as different forms of the same species. All forms have twisted overlapping corollas, much like the blades of a propeller. Forma *acutifolia* has white flowers and yellow centers. Forma *lutea* has yellow flowers. Forma *rubra* has pink flowers with a tangerine-yellow center and forma *tricolor* has pale yellow-white flowers with yellow centers and a red or pink rim. Forma *rubra* has the longest flowering days and is the tallest of the four forms. Flowers of forma *acutifolia* and forma *lutea* appear earlier in the year than forma *rubra* but their flowering days are generally shorter.

There is little agreement among botanists about how many *Plumeria* species there are and the delineation within the species. The estimated number of *Plumeria* species ranges from five (Wiersema, 2008) to 45 (Llamas, 2003). All of these species are likely to be called frangipani. Gentry (1993) states that all species of *Plumeria* are dry-forest trees with large infundibuliform flowers and tiny inflorescence bracts. Infundibuliform is defined as a flower with a funnel-shaped corolla.

Plumeria flowers are among the most fragrant of tropical flowering plants. These small trees are grown primarily for their aroma in almost all tropical and subtropical areas of the world. They have rather thick, waxy branches that exude a milky white sap when cut or broken. The milky exudates can cause allergic reactions in some people. The growth habit is usually open, but some are awkwardly shaped. Others grow into a distinct candelabrum form. As the tree ages, the canopy thickens. Technically, leaves are alternately arranged, but are so tightly clustered at the end of branches that they appear as whorls. The terminal cymes are 6 to 10 inches in diameter, and are made up of 20 or more blossoms. The flowers are waxy and salverform. Salverform is defined as a flower with slender tube corolla that abruptly expands into a flat limb.

Plumeria rubra L. is the most commonly grown *Plumeria* species in Florida and in many warm climates. Its native range is from central Mexico to Colombia. The tree grows from 15 to 25 ft tall. The flowering period of *P. rubra* is from March to July. In 1938, R.E. Woodson organized *P. rubra* into four forms delineated by the primary colors of the flowers: white, yellow, pink, and a tricolor. His work was the last official revision of the genus, and it has been unrecognized in most literature, and by botanical garden staff and *Plumeria* vendors. Today, many hundreds of variations of these four forms exist, and thus some claim that *P. rubra* is of garden origin and merely a collection of hybrids. A renowned flowering tree guru of the past, Edward Menninger (1962), stated that there are two kinds of frangipani, the Mexican frangipani

(*P. acutifolia* Poir), with yellow-centered white flowers, and the nosegay frangipani (*P. rubra*), usually with pink or red blossoms, sometimes yellow or white (Menninger, 1962). *Hortus Third* (Bailey and Baley, 2000), however, recognized the four forms of *P. rubra* as described by Woodson. Since this is not a botanical treatise on the species, the distinguishing characteristics of the four forms are presented here without dissent. Further, formal recognition of forms, as opposed to subspecies and varieties, are generally not recognized by taxonomists. Forms are usually considered minor genetic differences, such as in flower color (R. Wunderlin, personal communication).

Plumeria rubra f. *acutifolia* has white flowers with yellow centers (Fig. 1). This form is still routinely described in Florida as *P. alba* L. Thus, *P. alba* has become a convenient name for the white-flowered form, of which there are many cultivars.

Plumeria rubra f. *lutea* has yellow flowers fading to white at the edge as they mature (Fig. 2). 'Aztec Gold' is an f. *lutea* cultivar, and is popular in Florida.



Fig. 1. *Plumeria rubra* f. *acutifolia*.

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Fig. 2. *Plumeria rubra* f. *lutea*.



Fig. 3. *Plumeria rubra* f. *rubra*.

Plumeria rubra f. *rubra* has pink flowers of varying intensity with a tangerine-yellow center (Fig. 3). ‘Hot Pink’ is an often seen f. *rubra* cultivar. It is one of the tallest plumeria cultivars and can grow to a height of 30 ft.

Plumeria rubra f. *tricolor* has pale yellow-white flowers with tangerine-yellow centers and red or pink rim (Fig. 4). Many of the “Rainbow” hybrids are progeny of this form.

Flowers of the white and yellow forms appear slightly earlier in the year than the pink form, and the tricolor is last to appear. The numbers of flowering days for the yellow form is generally shorter than the other colors. The pink form has the most flowering days compared to the other three forms.

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Fig. 4. *Plumeria rubra* f. *tricolor*.