The mango, *Mangifera indica*, probably originated in a region on the border between India and Burma. Today, there are certainly more than a thousand different varieties around the world. The mango plays an important role as a foodstuff in many countries. A distinction was originally made between two main families of mango with clearly different features that came from two diversification zones—the Indian sub-continent and tropical Asia. A great many of the commercial varieties grown today were bred in Florida at the beginning of the Twentieth Century from multiple crosses between parents from these two families. Exported fruits are generally from budded plants.

Requirements of the Mango

The mango is suited to a broad tropical climate ranging from humid to dry. It is found in regions with very different annual precipitation. In the tropics, the halting of vegetation caused by a dry or cool season lasting for a few weeks or months is a condition for good flowering intensity and hence high productivity. Production is often small and irregular in equatorial humid zones as a result of the absence of vegetative growth. The optimum temperature range for tree development and fruit growth is 24° to 30°C. Temperatures lower than 10°C can cause physiological damage. Water supply to the tree must be optimum throughout the fruit growth period and then during the growth of new shoots. Rainfall distribution over the year is more important than cumulative annual precipitation, especially for the production of high-quality fruits. The lower limit for precipitation for commercial mango growing seems to be 750 mm. The mango can grow in a very varied range of soil types if the underlying horizons are sufficiently loose and well-drained. However, the tree prefers deep, fairly light soils with average structure. It can suffer from water shortage in sandy soil and produce small, insipid fruits. It is sensitive to salts in the soil and in irrigation water. Wind can cause damage of varying seriousness and cause imbalance in the water supply. Windbreaks should therefore be grown in windy areas before mango trees are planted.

**Characteristics of the two mango families**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Indian sub-cont.</th>
<th>Tropical Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diversification zone</strong></td>
<td>India, Pakistan</td>
<td>Buma, Malaysia, Philippines</td>
</tr>
<tr>
<td><strong>Seed</strong></td>
<td>Mono-embryonic</td>
<td>Poly-embryonic</td>
</tr>
<tr>
<td><strong>Shape</strong></td>
<td>Round to ovoid</td>
<td>Elongated with cylindrical or flattened cross section</td>
</tr>
<tr>
<td><strong>Skin colour</strong></td>
<td>Yellow to orange, sometimes with purple flushes</td>
<td>Green to yellowish green, no purple</td>
</tr>
<tr>
<td><strong>Taste</strong></td>
<td>Marked, hint of turpentine</td>
<td>Less marked</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>Susceptible to anthracnose</td>
<td></td>
</tr>
</tbody>
</table>
**TOMMY ATKINS**

**Shape:** ovoid, sometimes slightly oblong. Sloping dorsal shoulder. Ventral shoulder above the stalk zone. Round apex, small lateral beak.

**Peel:** thick. Yellow orange and bright red. Dark purple bloom. Numerous large greenish-yellow lenticels.

**Flesh:** strong orange colour. Good quality but slightly fibrous.

**Average weight:** 450 to 710 g

Bred in Florida in 1922, it was soon chosen by growers for its productivity, robustness when handled and good resistance to anthracnose, in spite of its medium fibre content. Flesh quality deteriorates markedly if too much fertiliser or water is supplied. This is the most widespread variety in Brazil, where it forms the majority of exports. It is particularly well-liked in Northern Europe for its bright colour. Most exports consist of medium-sized fruits (8 to 10 fruits per 4 kg box); this matches the requirements of supermarket chains.

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**KENT**

**Shape:** ovoid, rounded dorsal shoulder and apex. Full ventral shoulder. No beak.

**Peel:** thick and strong, low adhesion. Main colour greenish-yellow with red or even crimson surface in the parts most exposed to light. Slight greyish bloom.

**Flesh:** strong yellow to orangey yellow, rich flavour with melting, fibreless texture.

**Stone:** 9% of total fruit weight.

**Average weight:** 600 to 750 g

Bred in 1932 in Florida from sown ‘Brooks’, it bears comparatively large fruits, ranging from 440 g to more than 1 kg on young trees. Much appreciated by both the upstream and downstream ends of the sector, yields are medium but with a high proportion of export quality fruits. Fruit colour is attractive and the tasty flesh is firm and ripens very gradually. It is grown in most of the countries supplying Europe, where it is considered to be the yardstick for mango. However, considerable variations in colour and size according to the production zone can lead to sales problems.

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**KEITT**

**Shape:** oval, abruptly falling dorsal shoulder. Full and rounded ventral shoulder. Rounded, obtuse apex with no beak.

**Peel:** thick and strong, fairly high adhesion. Orangey yellow to crimson yellow on the side exposed to the sun, with numerous small pale yellow to russet lenticels. Fairly strong lavender-coloured bloom.

**Flesh:** orange to deep yellow. Rich and fruity flavour. Melting texture with many fibres that are not particularly unpleasant as they are fine.

**Stone:** 7 to 8% of total fruit weight.

**Average weight:** 510 g to 2 kg

Bred in 1939 in Florida from sown ‘Mulgoba’, it has high, regular yields. The reddish colour appears very early before the fruit is ripe and can lead to problems of evaluation of maturity; the latter can be enhanced by time in a ripening chamber. An end-of-season variety in most sources that makes it possible to prolong the export season. Less appreciated than ‘Kent’, it is nevertheless of increasing importance during periods of gaps between supply sources.
**Osteen**

**Shape:** Oblong with a rounded base. Rounded apex, sometimes with a small beak.

**Peel:** Thick, not very adhesive. Main colour violet/purple with some lavender lights. White lenticels.

**Flesh:** Lemon yellow, firm and juicy. Very high quality and not fibrous.

**Stone:** Long and flat.

**Average weight:** 500 to 800 g

‘Osteen’ is from Florida, where it was bred from sown ‘Haden’ in 1935. It is little grown on a global scale in spite of its good commercial features. It has become more common on the EU market since 2000 as it forms the majority of Spanish production.

**Haden**

**Shape:** Oval to rounded cordate. The ventral shoulder is broader and slightly higher than the dorsal shoulder. Well-rounded apex.

**Peel:** Mostly dark red with numerous whitish-yellow lenticels.

**Flesh:** Orangey yellow, almost fibreless. Pleasant, slightly acidic taste.

**Average weight:** 510 to 680 g

Variety bred from a sowing of ‘Mulgoba’ in 1902. Shipped almost only by air, this variety tops up supplies of ‘Kent’ when these are too small to meet demand. The fruit has a fine appearance and a reputation for fragility, requiring rapid sale.

**Valencia Pride**

**Shape:** Elliptic. Rounded apex, large apical beak.

**Peel:** Comparatively thin but detaches fairly well. Basic colour greenish-yellow with a large red to purple area. Yellow lenticels.

**Flesh:** Deep yellow. Aromatic and practically fibreless.

**Average weight:** 600 to 900 g

Variety bred from sown ‘Haden’ in Florida in 1941. Very elongated, fairly large fruits with attractive colour and shape. Good productivity. Grown mainly in West Africa, it long enabled varietal diversification at the beginning of the season when shipments consisted mainly of ‘Amélie’. Its attractive colour formed an alternative. Gradually growing in popularity, it is now consolidating its market share in the range of air-freight fruits.