Averrhoa carambola L.  

( Averrhoa acutangula, Averrhoa pentandra, Connaropsis philippica, Sarcotheca philippica )

**Other Common Names:** Blimbing, Caramba, Carambola, Carambolo, Country Gooseberry, Five-Corner, Five-Finger.

**Family:** Oxalidaceae, or further segregated into the Averrhoaceae J. Hutchinson.

**Cold Hardiness:** Shoots are fully hardy only in USDA hardiness zones 10 - 13, however with protection trees can survive with varying degrees of dieback depending on the winter’s severity in zone 9.

**Foliage:** Leaves are alternate, pinnately compound with noticeable short pubescence on the petioles, rachis and petiolules; foliage is a light to medium green, glossy above; leaflets number 7 to 11 (15) and alternate on the rachis; the 1” to 3” long leaflets have broadly rounded, nearly truncate, or more commonly shallowly cordate bases and acute to short acuminate tips on narrowly ovate to broadly lanceolate leaflets; leaflets are held in a somewhat drooping manner and tend to be largest on terminal portions of the leaf; margins are entire with some short hairs; the short petiolules are green turning brown and rachis and petiole are brown to reddish brown at maturity; petioles are swollen at the base.

**Flower:** Mildly attractive perfect small, to 1/8” to 1/4” diameter, fragrant flowers are borne in axillary clusters or panicles from twigs or even on older branches and trunks (cauliflorous); the symmetrical flowers are trumpet-shaped flaring into five petals that recurve as the flower begins to senesce; the pedicel and peduncle are reddish; the corolla exterior is pink to nearly white flushed pink, while the interior throat of the corolla is magenta; ten alternating long and short stamens and five styles are present; flowering can occur year-round in the tropics, but is mostly in spring and summer in our region; flowers are mildly attractive but tend to be hidden amongst the foliage.

**Fruit:** The five carpeled waxy surfaced 3” to 5” long berry matures to form a sharply five angled ovoid fruit that resembles a star shape when cut horizontally in cross-section, hence the name Starfruit; the wedges almost look like vertical wings on the fruit; seeds are thin, fleshy coated and hardly noticed within the fruit; the mildly citrus scented fruit have a thin translucent skin and rather thick crispish textured flesh that is yellow at maturity; although marketed at various stages of yellow-green to golden yellow, or rarely orangish yellow, the more mature the fruit, the sweeter the flavor of a given cultivar; cultivars vary from fairly bland, to sweet or acidic; peak flavor is when the fruit is yellow even maturing to the extent that the margins of the angle wings on the fruit are beginning to turn brown, although some see this as overripe; fruit are prodigiously borne with a single tree yielding many fruits; multiple cultivars in proximity are purported to improve fruit set.

**Stem / Bark:** Stems — the zigzag, slightly angled, hairy twigs mature to a reddish brown; whitish to light tan lenticels are present; Buds — vegetative buds are small pubescent and imbricate, while flower buds are more rounded and can form into leaf axils or from branches or trunks, usually elongating once formed; Bark — older branches become more gray-brown with reddish or purplish undertones, eventually becoming gray in color and a smooth to shallowly platy texture on old trunks.

**Habit:** Starfruit has a short stout trunk, or occasionally multiple trunks, that naturally branches near the ground, but is often limbed up into a single stem small tree with branches further above ground level; the tree forms and overall rounded crown which is densely twiggy with somewhat drooping branches imparting a sort of unkempt appaerance unless pruned; the overall texture is medium.

**Cultural Requirements:** Growth is fairly rapid on a good site; soils must be well drained as A. carambola detests poorly drained soils, however it is also not very drought tolerant needing a steady moisture supply; moderately fertile sandy soils are best and a full sun location favors fruit production; pruning may be required to maintain a presentable appearance; the juvenile period from seed is five to six years, less if grafted cultivars are used; protect from wind to avoid fruit damage.

**Pathological Problems:** Relatively few pathological problems are reported as long as plants are grown in sunny locations with well drained soils; fruit flies can be troublesome where present.

**Ornamental Assets:** Mildly attractive flowers and very unique brightly colored edible fruit are the primary
attractions; Starfruit is also grown as a honey plant.

**Limitations & Liabilities:** Limited cold tolerance is the primary limitation to cultivating *A. carambola* in our region; the messy fruit can be a landscape maintenance issue for general use in tropical or subtropical landscapes.

**Landscape Utilization:** In the tropics or subtropics *A. carambola* can be used in home orchards or as a small general purpose tree in the landscape; in our region, along the Gulf Coast it can be grown as a dieback shrub or small tree for fruit production or elsewhere in our region as a large container plant for patios or gardens, ala *Citrus*; this certainly can be a conversation piece in the landscape; Starfruit can also be grown in bright conservatories.

**Other Comments:** Many eat the fruit fresh as a snack, dessert, or cut up to add interest to salads; flowers are reported to also be eaten in salads; those plagued by a history of kidney stones should be aware that Starfruit contains oxalate; fruit are also juiced and the juice is sometimes used to clean various products including metal, even weapons in times past; various native medicinal uses are extolled, but one which may be of concern to those on blood thinners is that *A. carambola* was used to arrest bleeding; the genus name honors a 12th Century Moorish physician named Averroes from Cordoba, Spain; the specific epithet is derived from the Spanish name for the fruit.

**Native Habitat:** Exact origins are obscured by a long history of cultivation in tropical climates, but both species of *Averrhoa* are thought to have originated from Indonesia.

**Related Taxa:** Cultivars of *A. carambola* are available with bland, sweet or sour fruit; ‘Arkin’, ‘Fwang Tung’, ‘Golden Star’, ‘Kari’, ‘Maha’ and ‘Sri Kembanqan’ are recommended as sweet cultivars; *Averrhoa L.* is a small genus containing only two species, *A. carambola* and *Averrhoa bilimbi* L. (*Averrhoa obtusangula*), the Bilimbi, Bilimbi-Tree, Cucumber-Tree, Grosella China, or Tree-Sorrel; Bilimbi is another popular tropical fruit which is borne both on branches and the trunk (cauliflorous) on evergreen trees reaching 20’ to 45’ in height in the tropics; Bilimbi is a bigger tree with larger leaves to 2’ long, has many more, 25 to 31, and larger, 3” to 4” long, languid drooping felty leaflets, and has less cold tolerance than Starfruit; Bilimbi grows only in USDA hardiness zones 10b-13; *Averrhoa bilimbi* produces a small very shallowly five ridged green fruit which is said to strongly resemble a gherkin pickle, minus the prickles; this fruit is used in cooking, pickling or condiments, but is too acidic to eat fresh.

**References:** Barwick, 2004; Chin, 2003; Holttum and Enoch, 2002; Llamas, 2003; Riffle, 1998; Schrock, 2008.

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