A **sucker** is a lateral shoot that develops from the **rhizome** and emerges from the soil usually near the parent plant. It is a form of asexual, or vegetative, reproduction, that makes the banana plant perennial. Suckers emerge and ensure a more or less continuous supply of shoots, each capable of producing an **inflorescence**. They have been used as **planting material** since the early days of **domestication** by severing them from the mat and transplanting them to a new location.

Both **wild species of bananas** and **cultivated bananas** produce suckers. The clump of plants formed by the parent plant and its suckers is commonly called a **mat**. The botanical term for a mat is **genet**, and for a sucker is **ramet**.

Wild species may produce few or many suckers. Over time, some form dense and compact mats. This strategy, together with dormant **seeds** that germinate in disturbed soil, enables wild bananas to quickly colonise the edges of disturbed forest clearings. **Norman Simmonds** referred to wild bananas as "jungle weeds".[1]

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### Sucker development

Suckers arise from lateral buds on the **rhizome**. Each leaf that is attached to the rhizome has a lateral bud at its base. The formation of these lateral buds is suppressed from the time of floral initiation, when the **aerial true stem** begins to elongate.[2][3]
Each lateral bud that forms (Line A in the graph) is capable of growing into a sucker, but not all do so \[^4\]. Many of the lateral buds swell (Line B), but only some of these develop into suckers. They grow laterally for a distance and form a sucker that grows towards the soil surface (Line C). From 6% to 40% of lateral buds produce suckers, depending on the cultivar, seasonal conditions and the presence and stage of development of the parent plant \[^5\].

For a lateral bud to develop into a sucker a switch is necessary to begin growth and a supply of carbohydrates is needed to keep things going. A flush of gibberellin is thought to act as the switch \[^6\]. The bud also needs to be receptive to the flush of gibberellin. According to this hypothesis, a bud begins to grow when the gibberellin flush coincides with bud receptivity. Since the bud is a living organ, it needs an adequate supply of carbohydrates to support its growth into a sucker. The emergence of many suckers above the ground, such as happens in Plantains grown at high altitude (2200 m) \[^7\] \[^5\] means carbohydrate is available to support their growth. Far fewer suckers emerge in plantains grown at the same latitude but lower altitude (1100 m), implying that in these plants carbohydrate is either not available or not allocated to support sucker growth.

**Types of suckers**

The sucker appears above the soil and its state is characterised in part by its appearance. Initially, suckers have only leaf sheaths without a midrib or lamina. In horticultural terminology they are called **peeper suckers**. Some remain at this stage without further growth. Others continue to grow and produce leaves with a midrib and a very narrow lamina. They are then called **sword suckers**. Sword suckers gradually produce leaves whose laminae are broad and of the adult form (see photo at the top of the page). The sucker selected to replace the parent plant is called the **follower** or **ratoon**. Sometimes, ratoon suckers that have not fruited are referred to as **maiden suckers** \[^8\], although this term is poorly defined, and it can be difficult to determine whether a sucker at this stage is vegetative or contains an unemerged bunch.
Lateral buds may survive on sections of the rhizome after the aerial stems of earlier generations have decayed. Suckers that arise from these lateral buds usually have a small rhizome and broad leaves. They are called **water suckers** and their connection to the rhizome is often structurally weak. For this reason, water suckers are not suitable for selection as a ratoon to continue the life of the mat into the next generation. However, water suckers can still be a source of planting material to establish a new plantation. Oppenheimer and Gottreich compared sword and water suckers, excised from the parent plant and of equivalent height at planting [9]. For plants that flowered at the same time, bunches from sword suckers and water suckers were of a similar size.

**Local names**

There are various local names for suckers, including **keiki** (in Hawaii) and **pup** (mostly used in the American garden nursery industry).

**Sucker management**

An excess of suckers can lead to reduced bunch weight, especially in ratoon crops[10]. The number of suckers that are allowed to develop and mature is managed by pruning (**desuckering**) [11].

Considerations such as the evenness of the crop and the position of the sucker in relation to the direction of the row and in relation to the bunch on the parent plant influence the selection of the follower in commercial plantations of Cavendish cultivars [12]. Suckers can also be managed to time harvesting to meet market demands [13].

**Morphological descriptors**

List of the sucker-related descriptors used to characterize banana plants [14].

**6.2.9 Number of suckers**

(If any desuckering has been done, do not record anything. If no desuckering has been done, count only the suckers that are taller than 30 cm.)

**6.2.10 Sucker development**

(Tallest sucker in relation to the mother plant. Recorded at harvest.)

1. Taller than the mother plant
2. More than 3/4 the height of the mother plant
3. 1/4 to 3/4 the height of the mother plant
4. Inhibited

**6.2.10.b Suckers with tubular leaves**

(The descriptor refers to the tubular leaves of certain East African Highland bananas. It does not refer to the cigar leaf.)

1. Suckers with tubular leaves
2. Suckers without tubular leaves
### 6.2.11 Position of suckers
1. Far (more than 50 cm away from the mother plant)
2. Close to the mother plant (grows vertically)
3. Close to the mother plant (grows at an angle)

### 6.3.23 Blotches on leaves of water suckers
(Leave blank if there is no water sucker. See *Types of suckers* above for the description of a water sucker)
1. Without blotches
2. Little or narrow blotches
3. Large purple blotches

### References

14. IPGRI, INIBAP, CIRAD. 1996. *Descriptors for Banana (Musa spp.).* IPGRI, Rome, Italy; INIBAP, Montpellier, France; CIRAD, France. 55 pp.

### Also on this website

*Morphology of the banana plant*

**TC, or not TC. Is that the question?** Blog comparing the performance of tissue-culture banana plantlets and suckers as planting material.
Further reading

Propagation protocols and standards for bananas, chapter in FAO plant production and protection paper 195. Also available in French and Spanish.

Contributors to this page: Anne Vézina.
Page last modified on Tuesday, 02 June 2020 08:08:45 CEST by Anne Vézina.
The original document is available at http://www.promusa.org/Banana+sucker