

(7 oz) to more than 1 kg (2.2 lb; Mossu, 1992). There is considerable variation in the shape, surface texture and colour of the pods, depending on the variety.

### 2.2.8 Harvesting, pod opening and yields

When they ripen, most pods change colour, usually from green or red to yellow or orange (see Figure 2.6). They are cut by hand from the trunks and branches. This is easily done with a machete (cutlass) for the pods that are low on the trunk, but for the pods on the upper branches it is necessary to use a special knife fixed on a long pole. The crop does not all ripen at the same time, so harvesting has to be carried out over a period of several months. Pods are normally harvested every 2–4 weeks (see Figure 2.7). Frequent harvesting reduces the losses to cocoa pod borer moth, rats, squirrels and monkeys. It allows the farmers to sanitise the plantation by removing diseased pods and thus reducing the impact of diseases. In West Africa, the main harvest period is from the beginning of October until December. Cocoa purchased from farmers during this period and up to March is termed “main crop”. This is generally of higher quality than the secondary or intermediate harvest known as the “mid” or “light” crop.

The pods are opened to release the beans, either by cutting with a machete or cracking with a simple wooden club. Pods opened with a machete can result

**Figure 2.6** Ripe cocoa pods ready for harvesting.  
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of Remo Nāgeli.





**Figure 2.7** Harvested ripe cocoa pods. Reproduced with permission of Ivan Kashinsky.



**Figure 2.8** Fresh cocoa beans before separation and fermentation. Reproduced with permission of Ivan Kashinsky.

in injuries to workers and damaged beans if the machete cut is too deep. It is therefore recommended to use a wooden tool. There are some 30–45 beans or seeds inside the pod attached to a central core or placenta (see Figure 2.8). The beans are oval or a plump almond shape, and covered in a sweet, white mucilaginous pulp. The beans are separated by hand and the placenta is removed.

Each bean consists of two cotyledons (the nibs) and a small germ or embryo, all enclosed in a skin or testa (the shell). The cotyledons serve both as the storage organs containing the food for the development of the seedling and as the first two leaves of the plant when the seed germinates. Much of the food stored in the cotyledons consists of cocoa butter that amounts to about half the weight of the dry seed. The moisture content of the fresh beans is in the region of 65%.