

brown as the attack spreads, before they finally wither and drop.

Mites can be controlled by spraying with registered pesticides. Pesticides are applied as a full cover spray when the pest is noticed and can be repeated at 2 to 3 week intervals.

MOSQUITO BUGS (*HELOPELTIS SCHOUTEDENI* OR *H. OROPHILA*)

Mosquito bugs can cause considerable crop losses. The nymphs and adults feed on the leaves and young shoots by sucking the sap. Brownish spots appear, leaves and shoots shrivel up, dry and drop. Spraying with a registered pesticide is effective in controlling the insect pest.

CUTWORMS (*AGROTIS SEGETUM*) AND CRICKETS (*BRACHYTRUPES MEMBRANACEUS*)

Cutworms and crickets cause damage during the night in newly planted tea estates by gnawing or severing the stems at ground level. A bait applied in the evening, is an effective method of controlling these pests.

ARMILLARIA ROOT ROT DISEASE

It is caused by a fungus, *Armillaria mellea*, and the disease can be recognised by the appearance of longitudinal and radial cracks at the collar, the base of the trunk and in the roots.

Root rots are difficult to control and only preventive measures and phytosanitary rounds can avoid infection. When the land is being cleared, the trees must be uprooted and removed from the field together with all their roots.

BITTEN-OFF DISEASE

The most noticeable symptom is the rotting of the tap-root and the leaves fail to reach maturity and drop off prematurely. The crowded leaf-scars give

the stem a corrugated appearance and eventually the entire plant dies. The symptoms may equally be brought about by waterlogging or by an unsuitable soil reaction or adverse pH conditions. The soundest method to control this is to select an alternative site.

TRUNK AND BRANCH DISEASES

The successive pruning of tea favours the development of branch diseases. These diseases reduce the vitality of the frame and lead to a drop in yield. Pink disease occurs on tea, particularly in very humid regions. It is caused by *Pellicularia salmonicolor*. The inside of the branch bark becomes covered in a white to pinkish mycelia crust and the bark cracks. Affected branches gradually dry up and the leaves turn yellow and fall. In addition, the branches often have cankers.

Disease control is by spraying with a copper fungicide and cutting up and burning the affected branches.

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Black tea

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Background

The botanical classification is *Camellia sinensis*. It is an evergreen shrub which can grow up to 17 m tall.

Origin and distribution

Tea has been cultivated by the Chinese for more than 2 000 years, originated in China, from where *C. sinensis* spread to India and Japan, then to Europe and Russia. Tea was introduced into Africa for the first time in 1687, at the Cape of Good Hope and later, in 1851, at the Botanical Gardens of Durban in Natal.



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Climatic and soil requirements

Temperature plays a crucial role in the growth and yield of black tea. Average temperatures below 13 °C and above 30 °C impede the development of the shoots for harvesting. The ideal mean annual temperature is presumably between 18 and 20 °C. A relative humidity of 80 to 90 % is favourable during the growth period of tea plants, below 50 %, shoot growth is inhibited and below 40 % growth is affected adversely. It grows well in areas where annual rainfall varies from 1 150 to 6 000 mm. Tea grows best on acid soils (pH 4,5 to 5,5), which are deep (at least 2 m), well structured and with a high level of minerals. Tea is grown on hillsides.

Uses

Dried and cured leaves are used widely as beverage, which has a stimulant effect because of caffeine.

Cultural practices

Planting

Plantings should be established in single rows, 1,50 x 1,75 m apart. Seedlings of 6 to 12 months old may be transplanted with a ball of earth, while much older seedlings can be planted bare-rooted, cutting the stem 10 cm from soil level. New plantings in South Africa consist of between 13 000 and 14 000

plants per ha (a planting distance of about 1,50 x 0,50 m). A planting hole of 45 cm wide and 75 cm deep is better for establishment of young plants.

Propagation

Black tea is propagated using single-internode cuttings.

Fertilisation

The quantity of fertiliser to be applied will depend on the age and yield of the tea plants, as well as on soil fertility and soil analytical report. Fertilisers are applied during the rainy season either over the foliage, in a circle around young tea plants or in the interrows.

Irrigation

The quantity of water required should be decided in relation to the water deficiency and calculated based on the soil's effective reserves and evapotranspiration. The most frequently used irrigation system is sprinkler irrigation.

Weed control

Different methods can be used to control weeds. The most direct is clean weeding either by hand or cultivation implement. This usually involves removing the weeds from the land and burning them.

Pest and disease control

RED SPIDER MITE (*OLIGONYCHUS COFFEAE*)

These mites attack the foliage in the hot dry season. The larvae and adults feed on the upper surface of well-developed leaves. Infested leaves are, at first, reddish in colour and then turn bronze or coppery-

