

Factors influencing mulberry leaf yield

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The number and length of branches and shoots

Investigations have shown that in Zhejiang and Jiangsu Provinces, when the number of branches and shoots per ha is below 75,000, the annual leaf yield is about 15,000 kg; when there are 90,000-150,000, the yield is 22,500-37,500kg; but above 150,000, the yield will decrease. The most suitable amount of branches and shoots is between 100,000 and 120,000.

The high-yield mulberry plantations have a good colonial structure starting with a planting density of 12,000-15,000 plants/ha; the number of crowns at 37,500-45,000; the number of branches and shoots at 105,000-120,000 and the total length of the branches at 150,000-180,000m per ha (the average length of a branch or shoot at about 1.4 m). Some high-yield plantations have a density at 22,500-30,000 trees with 4 branches and shoots in each tree so as to keep the total number of branches and shoots at 105,000/ha.

Apart from the number of branches and shoots, their length and diameter are also directly related with leaf yield.

Varieties

When a new mulberry field is established, high-yield and super-quality varieties which are adaptable to the local environment should be used. Among the Husang varieties, Heyebai is a high-yield variety widely cultivated in Zhejiang and Jiangsu Provinces.

Fertilizers

There is a close relationship between fertilizer dosage and the quantity and quality of mulberry leaves: the higher the dosage, the greater the yield and the quality. However, there is a reduction in the response to fertilizer application as the dose increases.

The high-yield mulberry plantations require a plentiful supply of fertilizers (N, 1,100 kg; P₂O₅, 345-450kg; K₂O, 375-525 kg/ha/year) and water. The fertilizing time and methods should be suitable so as to increase the efficiency of fertilizer application.

Tree shape and age

Under the similar conditions, the low-trunk tree shape can be formed in a short period, and the leaf yield is higher compared with the high and medium trunk trees. It takes a long time to form tree shape. The harvest index and leaf yield of mulberry tree are low because of the high proportion of the non-assimilating organs. Since 1970's, a lot of high-yield plantations with low-trunk or trunkless mulberry trees have been established in China. The varieties in such plantations have some good characteristics such as fast growth and high harvest index, but the high yield period is shorter than that of high and medium trunk mulberry trees.

Compared with the mature trees, both the young and the old trees have a lower leaf yield as the photosynthesis of the young trees are mostly transported outside the leaves to form the non-assimilating organs, while the physiological functions of the old trees are weak. Therefore, measures should be taken to establish a mulberry plantation as soon as possible and to lengthen the high-yield period of the mulberry plantation.

Apart from the above factors, mulberry leaf yield is also related with the methods and frequency of leaf harvesting as well as field management.