

Forcing culture of loquat by shading

LOQUAT (*Eriobotrya japonicum*) is one of the temperate fruit trees which may have poor fruit set if temperatures are too high. When loquat trees are grown in subtropical and tropical regions, they become more productive if the canopy is shaded for part of the growing season with black nylon nets.

Adaptability of the technology

This technology is very effective on the loquat variety “Mozi”, and the investment is rather small. Therefore, it can be adopted even by relatively poor farmers in sub-tropical and tropical countries.

Materials needed

Black nylon plastic net with 50 % shading rate, and poles to support the net.

Shading period

The period is from inflorescence to the fruit setting stage (Fig. 1 and Fig. 2).

Laying out the net

Set the net about 1 m above the fruit canopy (Fig 1). Supporting poles must be fixed firmly so that they are not blown over by strong winds.

Advantages of the technology

Early harvest and heavier fruits are the main advantage. Fruits can be harvested at least 10 days earlier than the control. They can be sold at a higher price. It was shown that 35.7 % of total fruits were harvested in February, in comparison to only 8.9 % from the control (Table 1). The



Fig.1. Shading of loquat during inflorescence

shading treatment resulted in earlier flowering and better fruit set. Moreover, the average weight of individual fruit increased by 13 to 28 % when the trees were shaded (Table 2).

Reasons for the effectiveness of shading

The viability of loquat pollen (cv. “Mozi”) falls dramatically when temperatures rise above 25°C. This may cause poor fertilization, hence poor fruit set. Shading lowered the temperature of leaves and flowers by 4.6-9.9 °C, which may be beneficial for fertilization, especially of early flowers.

Precautions

- ❑ Laying the net directly on top of the trees is not recommended, because there is less ventilation, and sometimes burning of shoot-tips.
- ❑ When the net is installed, and how long it is left over the trees, are important. Putting up the net too early may affect flower development, and delay the date of the first harvest.
- ❑ It is recommended to try this technology on a small scale first, so as to be sure of its effectiveness.

Table 1. Effect of shading on the harvest rate by period * (Var. Mozi)

Unit: %

| Period | Control | 50% Shading |
|--------------|--------------|--------------|
| Feb. 1-10 | 0.0 | 9.3 |
| 11-20 | 5.9 | 17.7 |
| 21-28 | 3.0 | 8.7 |
| Mar. 1-10 | 20.9 | 24.4 |
| 11-20 | 9.8 | 8.9 |
| 21-31 | 58.6 | 29.5 |
| Apr. 1-10 | 1.8 | 1.4 |
| Total | 100.0 | 100.0 |

* percentage of fruit (by weight) harvested of total

Table 2. Effect of shading on average fruit weight (Var. Mozi)
Unit: g/ fruit

| Period | Control | 50% Shading (Ratio against control) |
|-----------|---------|--|
| Feb. 1-10 | --- | 22.5 |
| 11-20 | 26.6 | 30.1 (1.13) |
| 21-28 | 24.5 | 31.4 (1.28) |



Fig. 2. Growth stage of inflorescence