

The Effects of Mulch Materials and Methods on Production and Quality of Honeydew Fruit in Yilan Area¹

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summary

Due to the rainy and cool weather, the production of honeydew in Yilan area has been forced to meet difficulty in the past years. The objective of this study was to seek for a optimum mulch material and method to protect the plants from unsuitable climate. Three experiments were conducted from 1993 to 1994. They were: silver-black plastic, black non-woven fabric and 42g/m² non-woven fabric films were screened as mulch materials on planting-beds. non-woven fabric film with different weight of 23g/m², 30g/m², 42g/m² and 50g/m² were tested as the floating mulch materials on the plants. anti-dew plastic, common plastic, red plastic, and 42g/m² non-woven fabric films were compared as tunnel structure materials.

The results showed that silver-black plastic film was the best mulch material for planting-bed, and 42g/m² non-woven fabric film was unsuitable for mulch on planting-bed. Floating mulch was not a good method to be recommended to the growers in Yilan area, because of the injury of leaves, shoots and plants caused by the crush of wet and heavy film. Tunnel structure was necessary in Yilan area to protect the plants from the squeeze of mulched film. The tunnel structure with anti-dew plastic film had the highest production and best quality, whereas those with 42g/m² non-woven fabric film appeared to be the worst. The planting-bed mulched by silver-black plastic film, combined with the tunnel structure mulched by anti-dew plastic film, was the best approach to produce honeydew in Yilan area. The total production could be reached 76.5 metric tons per hectare, and the total soluble solids of fruits was as high as 14.6°Brix. In additions, there was a positive correlation between the solar penetration percentage of tunnel structure materials and the total soluble solids and hardness of flesh.

(Key words: Honeydew, Mulch materials, Non-woven fabric film, Plastic film, Solar penetration, Yield, Quality)

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