The Study of Wavelength and Intensity of Light Affecting Quantity Silk Spraying of Nang On Yone Silkworms.

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Abstract

Science Project on study of wavelength and intensity of light affecting quantity silk spraying of Nang On Yone silkworm. The objectives of this study were 1) to study the wavelength of light affecting the quantity of silk spraying of Nang On Yone silkworm and 2) to study the intensity of light affecting the quantity of silk spraying of Nang On Yone silkworm. The experiment was divided into 2 parts as follows: Part 1, to study the wavelength of light affecting the quantity of silk spraying of Nang On Yone silkworm by bringing 90 silkworms to nest in Jor paper. The silkworm in Jor paper must be fifth instar larvae (the age when the silkworm is ready to nest). The Jor paper was contained in 3 cardboard boxes, each box had 30 silkworms. Each box provided 3 different colored light bulbs as follows: 1) Red light bulb has a light wavelength of 636.72 nm 2) Yellow light bulb has a light wavelength of 582.76 nm 3) Blue light bulb has a light wavelength of 472.06 nm. Then, the light bulbs were turned on for 4 days. Part 2, to study the intensity of light affecting the quantity of silk spraying of Nang On Yone silkworm by bringing 90 silkworms to nest in Jor paper. The silkworm in Jor paper must be fifth instar larvae (the age when the silkworm is ready to nest). The Jor paper was contained in 3 cardboard boxes, each box had 30 silkworms. Each box provided 3 different levels of light intensity as follow: level 1 is light intensity at 500 lux, level 2 is light intensity at 1,000 lux, and level 3 is light intensity at 2,000 lux. There was a control box that was reared without light according to the normal rearing of 30 silkworms in both experiments.

The results showed that 1) the blue lighted box which has a light wavelength of 472.06 nm affected the quantity of silk spraying of Nang On Yone silkworms. The fresh cocoon weight, the cocoon bark weight, and the percentage of the cocoon were higher than the control box or the normal rearing. 2) The light intensity of the lighted box at 500 lux affected the quantity of silk spraying of Nang On Yone silkworms. The fresh cocoon weight, the cocoon bark weight, and the percentage of the cocoon were greater than the control box. However, the light intensity of the lighted box at 1,000 lux and above had fresh cocoon weight, the cocoon bark weight and percentage of the cocoon were less than the control box.

Keywords: Percentage of the cocoon, Fifth instar larvae, Fresh cocoon, Cocoon bark, Jor paper