

Studies of the Effects of the Cultural Factors on the Fiber Quality of Different Fruiting Position in Cotton

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Abstract: By using non-Linear regression orthogonal combination design (the optimum mix design), the effects of cultural factors on fiber quality of different fruiting nodes were analyzed, The regression model between cultivation factors and fiber quality was established. The regression model between fiber quality (Y), sowing

date (X_1), planting density (X_2), N application rate (X_3) was as below: $Y = 3.9295 + 0.21708 X_1 + 0.056394 X_2 - 0.3954 X_3 - 0.20319 X_1^2 + 0.27002 X_2^2 + 0.212949 X_3^2 - 0.27276 X_1 X_2 - 0.1787 X_1 X_3 - 0.0508 X_2 X_3$. The model that the best fiber quality can be obtained is sowing at April 23th, 24000 plants \cdot hm⁻², dressing N 330kg \cdot hm⁻². N application rate is one of significant cultural factors that affects the fiber length and strength; Sowing time is a significant cultural factor that affects the micronaire; The density is a significant cultural factors that affects elongation rate.

Key words: Cotton; cultural factors ; fiber quality ; fruiting position