紅豆落葉性及其相關性狀之遺傳研究

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摘　要：本計畫目的在瞭解紅豆成熟期落葉性及其相關性狀之遺傳行為，以供育種選拔時之參考，期能解決紅豆成熟期落葉劑濫用的問題。本年度 88 年秋作紅豆七個雜交組合中，每一組合調查兩親本 P_1、P_2 各 200 株及其 F_2 族群 400 株，其試驗結果七個雜交組合成熟期落葉率之遺傳率變幅 0.216～0.576，顯示成熟期落葉性易受環境的影響，其有效基因數估計是由 2～4 對等位基因所控制。在相關方面，七個雜交組合之成熟期落葉性與植株重量、分枝數、主莖節數、葉綠素含量、葉綠素總量、單莢重、單粒重等 7 個性狀間之表現型與遺傳型方面均呈負相關，顯示成熟期落葉性與這 7 個性狀間之關係受環境的影響較小，可供育種時間接選拔的依據。另外有四個雜交組合之成熟期落葉性與單株莢重、單株粒重等 2 個性狀間之表現型與遺傳型方面均呈負相關，但有三個雜交組合顯示成熟期落葉性與單株莢重、單株粒重等 2 個性狀間無明顯的關係，顯示在這三個雜交組合的後代中，有機會選拔到成熟期落葉性佳及產量高的品種。本試驗預定再進行七個雜交組合之主成分分析。

Studies of Inheritance on Leaf Abscission and Correlated Characters of Adzuki Bean

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Abstract: The experimental objective was to understand inheritance on leaf abscission and correlated characters of adzuki bean maturity, in order to develop selection and solve abuse of leaf abscission agent. Every cross combination was investigated 400 plants of parents and 400 plants of F2 generation in the fall crop season of 1999. The experimental results were summarized as follow : Heritability ranges of leaf abscission percentage was 0.219-0.576 in maturity period. It showed that environment was great influence to leaf abscission. According to the effective genes estimate, percentage of leaf abscission was controlled at least 2-4 allele genes. In Correlation analysis of phenotype and genotype, percentage of leaf abscission and plant weight, branch number, node number of main stem, chlorophyll contents per leaf, chlorophyll contents per plant, weight per pod, weight per seed were significant negative correlation. The seven characters may as indirect selection index for leaf abscission. Percentage of leaf abscission and pod weight per plant, seed weight per plant were significant negative correlation in 4 cross combinations, but they were no correlation in other 3 cross combinations. It showed that generations of the 3 cross combinations may be selected for best leaf abscission and high yield...The experimental data is going to proceed principal component analysis.