自花授粉植物杂种优势数学模型的探讨

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摘要　　本文从入场多品种(或品系)组成的亲本群体，以及在这些亲本之间的所有可能的杂交组合产生的F1代所组成的杂种群体的角度来探讨杂种优势，提出了一个数学模型，企图解决杂种优势利用的某些理论和实际问题。

关键词

分类号

Approach to Mathematical Model of Heterosis of Self-pollinated Plant

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Abstract

Based on parent populations and hybrid populations,the problem of heterosis of self-pollinated plant is studied with the result that a mathematical model is deduced as shown below:

$$cov(MP,F1)=1/2(VF1-VH+VMP)=1/2Na2,$$
$$cov(H,F1)=1/2(VF1+VH-VMP)=1/4Na2+VIF1,$$
$$cov(MP,H)=-1/2(VMP-VF1+VH)=-1/2V1.$$

where 1/2Na2 is the additive variance as the variance of general combining ability,1/4Nd2 is the dominance variance and VIF1 is the non-allelic interaction variance existing in hybrid populations,with a sum amounting to the variance of specific combining ability,VI is the addtive non-allelic interaction variance existing in parent populations.Thus the heterosis ratio q2 can be computed.

If non-allelic interaction is not considered number N of effective factor which controls the character in random crosses among all parents and its a,d,hp can also be found out by that model.Formulas to compute them are :

Key words

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