

论大白菜及其近缘芸薹属作物核不育材料的育性遗传兼基因互作的抑制效应 A Discussion on Fertility Inheritance of Genic Male Sterile Materials in Heading Chinese Cabbage-pe-tsai and Related Crops and Simultaneous Inhibiting Effect in Interaction of Genes

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摘要 根据大白菜及其近缘芸薹属作物核不育材料育成的纯合两型系和杂合两型系可育株间互交F¹可育株自交, 其子代可能出现无育性分离情况或者产生13(可育株): 3(不育株)两种表型的育性比资料, 认为前者宜用复等位基因假说解释, 而后者用抑制作用解释为妥。抑制作用的内涵有两种可能, 一是由一对决定育性表现的育性基因与另一对不决定育性表现的抑制基因互作表现抑制作用, 即抑制作用假说; 二是由性质相同、作用相反且可育基因起上位作用的两对育性基因彼此互作产生抑制效应, 权称之为上位抑制假说解释其育性遗传现象。

Abstract: The heading Chinese cabbage-pe-tsai and related crops genic male sterile materials can breed up homozygous two-type line and heterozygous two-type line, intercrossing between fertile plants of this two lines, its F¹ fertile plant selfed, generation show two possibilities, one is being without fertility segregation, another is fertility segregation rate of 13 (fertile) : 3 (sterile). According literature above, its considered that the former is proper to be interpreted by means of multiple alleles hypothesis, and the fertility heredity of the latter is appropriate to be interpreted using inhibition. The implication of the inhibition has two possibilities, one is that a pair of fertility genes controlling fertility and another pair of inhibition genes not controlling fertility interact showing inhibition, i. e., inhibiting effect hypothesis, and the other is that two pairs of fertility genes with identical property and contrary action and its fertile genes acting epistatically interact demonstrating inhibiting effect. It was temporarily here defined as epistatic inhibition hypothesis interpreting its fertility inheritance phenomenon.

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