EVALUATION OF PRODUCTION CHARACTERS AND QUALITY OF CORN THROUGH SELFING RESULTS OF BC3F2 GENOTYPE ORIGINATED FROM PARENTS OF SRIKANDI PUTIH AND LOCAL WAXY CORN

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BACKGROUND: Corn variety development for food purposes is still very limited. Therefore, corn varieties with high production potential, palatability, and nutritional value are needed. This is crucial to anticipate staple food insecurity due to dependence solely on rice. The purpose of this study was to evaluate the production characteristics and quality of corn resulting from self-produced BC3F2 genotypes derived from Srikandi Putih and Local Waxy corn varieties. This specific target was achieved through a series of crosses conducted to obtain the BC3F2 genotype. This promising genotype exhibits most of the desired characteristics from the initial cross of the two parents: the Srikandi Putih variety, which has a high protein content and yield, and the Local Waxy corn, which has a high amylopectin content. This BC3F2 genotype is the precursor to the new variety.
METHOD: This study used a randomized block design with three treatments: off-white, semi-off-white, and bright white, with three replications. The determination of seed color was based on a qualitative test using iodine. This iodine test indicates differences in amylopectin levels between seed colors. At flowering, 3,600 plants were selfed to produce seeds of the BC3F3 genotype.
RESULTS & DISCUSSION: The results showed that seed color generally had no significant effect on ear length and diameter. Plant height was 218.6 cm, male flowering age was 41 days after planting (DAP), female flowering age was 43 days after planting (DAP), ear length was 16.4 cm, ear diameter was 4.3 cm, and the highest number of leaves was found in the off-white seed color with 15 leaves.
CONCLUSION: Growth and production analysis showed that the high production potential of Srikandi Putih is inherited, as is the glutinous character (high amylopectin) in the BC3F3 genotype.
KEYWORDS: Corn; Protein; Amylopectin; Selfing