EMS-INDUCED MEIOTIC CONFIGURATIONS IN *CORCHORUS CAPSULARIS* L.: AN ARCANE PHENOMENON OF SECONDARY ASSOCIATIONS AMONG BIVALENTS

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The present report was a detailed observation of secondary association in meiocytes of Corchorus capsularis L. after the assessment of EMS-treated plants. Along with the cytogenetical assessment morphometric parameters, meiotic index (MI) and pollen fertility (%) were also recorded. Morphometric analysis was a preliminary parameter to identify distinct mutant plants from control plants. Tall, dwarf, and branching mutants were tagged in M_1 and M_2 generations, cytological analysis was carried out, and persistent secondary association was recorded. 10 different groups of secondary associations were frequently formed during prophase and metaphase I among bivalents. EMS, an alkylating agent was used as a mutagen and responsible for malfunctioning in chiasma formation between bivalents. Some other aberrations like stickiness were noted as a consequence of treatment and these aberrations influence the MI and pollen fertility. Aberrant sporads were formed viz. dyads, triads, and polyads with normal tetrads. Pollen fertility and MI declined in contrast to control as a result of a result of the mutagenic impact of EMS in all the mutant plants.

Key words: *Jute, Meiocytes, secondary association, Meiotic Index, Pollen fertility, EMS.*

ЕМС-ІНДУКОВАНІ МЕЙОТИЧНІ КОНФІГУРАЦІЇ У *CORCHORUS CAPSULARIS* L.: ЗАГАДКОВЕ ЯВИЩЕ ВТОРИННИХ АСОЦІАЦІЙ ЧЕРЕД БІВАЛЕНТІВ

У цій статті детально розглянуто вторинні асоціації у мейоцитах *Corchorus capsularis* L. після оцінки рослин, оброблених ЕМС. Окрім проведення цитогенетичної оцінки морфометричних параметрів, було зареєстровано мейотичний індекс (MI) та фертильність пилку (%). Морфометричний аналіз був попереднім параметром для того, щоб відрізнити різні мутантні рослини від контрольних рослин. Високорослі, карликові та гіллясті мутанти було виявлено в поколіннях M_1 та M_2, проведено цитологічний аналіз і зареєстровано стійку вторинну асоціацію. Десять різних груп вторинних асоціацій часто утворювалися серед бівалентів під час профази та метафази I. ЕМС, алкілуючий агент, було використано в якості мутагена, який спричиняє збої в утворенні хіазми між бівалентами. Внаслідок обробки було відзначено деякі інші аберації, зокрема, липкість, і те, як ці аберації впливають на MI та фертильність пилку. Утворювалися аберантні спори: діади, тріади й поліади з нормальними тетрадами. Внаслідок мутагенного впливу ЕМС у всіх мутантних рослин знижувалися фертильність пилку та MI.

Ключові слова: джут, мейоцити, вторинні асоціації, мейотичний індекс, фертильність пилку, ЕМС.

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Received January 31, 2024
Received Febuary 27, 2024
Accepted May 18, 2025