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DECIPHERING ENIGMATIC RESPONSE OF B CHROMOSOMES ON GENETIC RECOMBINATION OF ARTEMISIA ANNUA

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B chromosomes are supernumerary, dispensable extra karyotypic component that show non-standard behavior of inheritance and lack the ability to undergo recombination or pairing with A chromosome. It is present in thousands of animal and plant species. The present piece of work investigates the effect of B chromosomes on the standard complement of Artemisia annua L. and its influence on chiasma frequency, pollen fertility etc. Among the B carrier PMCs, upto 3B chromosomes have been reported in Artemisia, however majority of PMCs possess 2B chromosomes. Further this work focuses on the differences in distribution of chiasma frequency between carrier and non-carrier plant at the same time between non-carrier and carrier PMCs of B carrier plants. B carrier plants are morphologically indistinguishable from non-carrier plants but there might be an endophenotypic effect on the plant. The carrier plants decipher higher chiasma frequency as comparison to non-carrier plants although it shows slight reduction in fertility because B chromosomes interact with the standard chromosomes. These chromosomes can play an important role in generating new allelic combinations and genome evolutionary process.

Key words: *Artemisia annua L., B chromosomes, Carrier and Non-carrier plants, Chiasma Frequency, Pollen fertility.*

ІНТЕРПРЕТАЦІЯ ЗАГАДКОВОГО ВПЛИВУ В ХРОМОСОМ НА ГЕНЕТИЧНУ РЕКОМБІНАЦІЮ ARTEMISIA ANNUA L.

В хромосома – це надкомплектна, додаткова складова каріотипу, яка демонструє нестандартну поведінку при наслідуванні та не здатна рекомбінувати чи спарюватися з А хромосомою. Ці хромосоми присутні у тисячах видів тварин і рослин. У цій статті представлено результати вивчення впливу В-хромосом на стандартний склад *Artemisia annua L.*,

а також на частоту хіазми, родючість пилку, тощо. Серед В-носіїв, материнських клітин пилку (МКП), було спостережено наявність 3В хромосом у *Artemisia*, однак, більшість МКП мають 2В хромосоми. Крім того, велику увагу приділено відмінностям у розподілі частоти хіазми між рослинами-носіями та не носіями, а також між не носіями та носіями МКП рослин-носіїв В. Останні не мають морфологічних відмінностей від рослин-не носіїв, але можливий ендотиповий вплив на рослину. Рослини-носії розшифровують вищу частоту хіазми, порівняно з рослинами-не носіями, хоча помітне невелике зниження родючості, оскільки В хромосоми взаємодіють зі стандартними хромосомами. Ці хромосоми можуть відігравати важливу роль у генерації нових комбінацій алелів та еволюційному процесі геному.

Ключові слова: *Artemisia annua L., В хромосоми, рослини-носії та не носії, частота хіазми, родючість пилку.*

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