

## РЕФЕРАТИ СТАТЕЙ, ОПУБЛІКОВАНИХ В «CYTOLOGY AND GENETICS», № 1, 2024 р.

### CONSEQUENCE OF GAMMA RADIATION INDUCED CYTOMIXIS DURING MICROSPOROGENESIS IN FENNEL PLANT (*FOENICULUM VULGARE* MILL.).

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*Fennel is considered as a very important spice crop with powerful therapeutic potential. An improvement in this valuable crop, selected physical mutagen (Gamma irradiation) on the seeds with five selective doses viz., 50 Gy, 100 Gy, 150 Gy, 200 Gy and 250 Gy for break genetic consistency in narrow genetic base in Fennel crop, remunerative phenomenon of syncytes was seen in some cases, where complete chromatin was transmitted to the recipient PMC, that generates dimorphic pollen grain. Such pollen grain with varying genetic content plays a significant role in the emergence of intraspecific polyploidization of species. A curious biological process which is often observed in microsporogenesis of higher plants like, development of syncytes, cytomixis between plant cells and due to this the creation of big pollen has evolutionary relevance. The cytotoxic behaviour of *Foeniculum vulgare* Mill. has been reported in this experiment.*

**Key words:** Cytomixis, *Foeniculum vulgare* Mill., Gamma radiation, Pollen fertility, Syncytes.

НАСЛІДКИ ЦИТОМІКСИСУ, ІНДУКОВАНОГО  
ГАММА-ВИПРОМІНЮВАННЯМ ПІД ЧАС  
МІКРОСПОРОГЕНЕЗУ РОСЛИН ФЕНХЕЛЮ  
(*FOENICULUM VULGARE* MILL.)

Фенхель вважається дуже важливою пряною рослиною з потужним терапевтичним потенціалом. У деяких випадках спостерігали покращення якостей цієї цінної рослини під дією обраного фізичного мутагену (гамма-випромінювання) на насіння у формі п'яти обраних доз *viz.*, 50, 100, 150, 200 та 250 Гр для порушення генетичної консистенції вузької генетичної бази рослин фенхелю, також відмічали по-

зитивне явище синцитів, при цьому повний хроматин переходив до материнських клітин пилку обробленої рослини, що сприяло утворенню диморфних зерен пилку. Такі зерна пилку з різним генетичним вмістом відіграють значну роль у виникненні внутрішньовидової поліплоїдизації. Цікавий біологічний процес, який часто спостерігають під час мікроспорогенезу вищих рослин, – розвиток синцитів, цитоміксис між клітинами рослин та утворення великих зерен пилку, – має еволюційне значення. Під час цього експерименту було зареєстровано цитоміктичну поведінку *Foeniculum vulgare* Mill.

**Ключові слова:** цитоміксис, *Foeniculum vulgare* Mill., гамма-випромінювання, родючість пилку, синцити.

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