



Induced Mutation on Plants by Laser and other Mutagens

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Laser as a mutagen | The effect of lasers of 3 wavelengths in the visible region - 476, 488 & 514 nm on mitotic & meiotic cell divisions, growth, yield & activity of specific enzymes were studied in two taxonomically diverse plant species - *Allium cepa* L. & *Vicia faba*. The effect of laser exposures was compared with the effect of two physical mutagens (gamma & UV radiations) and two chemical mutagens (Ethyl Methane Sulphonate and Hydroxyl amine; EMS & HA). The study indicated that lasers could be mutagenic causing aberrations in the mitotic & meiotic cell divisions & producing changes in the growth & yield of the plants. Lasers of higher wavelengths 488 & 514 nm caused aberrations in the early stages of mitotic cell division whereas lasers of lower wavelengths (476 nm) caused more aberrations in later stages. Laser exposure of 488 nm wavelength at power density 400 mW induced higher mitotic & meiotic aberrations & also induced higher pollen sterility than lasers of 476 & 514 nm. The frequency of mitotic aberrations induced by lasers was less than that caused by gamma-irradiation but comparable to that induced by EMS...

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