Effect of Some Chemical and Physical Mutagens on *Vicia Vaba, L.* IV. Spectrum of chlorophyll mutations induced in M₂ and M₃ generations

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**THE PRESENT** investigation was carried out to study the effect of X-ray, EA and DES, and the combinations between them on spectrum of chlorophyll mutations induced in M₂ and M₃, on two varieties of *Vicia faba* namely Giza 1 and Giza 2. Air dried seeds of each of the two varieties were -irradiated with doses of 0.00, 3, 6, 9 and 12 kr, or treated with EA in concentrations: 0.05, 0.15, 0.25 and 0.5%, or DES 0.015, 0.020, 0.025 and 0.030 M solutions. For combined treatment of radiation and chemicals some seeds of each variety were treated by 0.25 or 0.50%.

M₁, M₂ and M₃ generations were grown through the three successive seasons (1973-74, 1974-75 and 1975-76).

It was found that the spectrum of chlorophyll mutations was affected by different doses and different mutagens. Thus, in case of X-rays, albina type decreased by increasing dose from 3 kr to 9 kr, while xantha and viridis types increased by increasing it in the same range. In case of EA, the viridis type increased by increasing the concentration from 0.05 to 0.50%, while the two other types, albina and xantha did not show any definite trend.

Spectrum of chlorophyll mutations was affected by different mutagens. Thus, after EA the most frequent type was viridis, followed by xantha type, while in all other treatments the xantha type was the highest one followed by albina.

No varietal differences in spectrum of chlorophyll mutations were observed between the two varieties Giza 1 and Giza 2.