Assessment of the biosafty of the bioinsectide agerin on different biological systems

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This study was carried out in the laboratories and in the field of the department of Genetics. Faculty of Agriculture, Ain Shams University, Shoubra El-Khema, Cairo, Egypt.The objectives of this study were to:1- Study the cytogenetic effect of the bioinsecticide ”Agrein” on different biological systems to identify its safty.2- Identify of its mutagenicity using SDS-protein isozyme and the existence of any mutation in p53 tumor suppressor gene.The main findings could be summarized as follows:I-Effect of Agrein on plant systemI.1- Effect of Agrein on the mitotic behaviour of vicia fabaAgrein was test by the following concentrations ”1-5 2-5 3-5 ” g/L which showed that a great rate of aberration in most phases of mitotic devision and the highest personality of aberration was 52% after treating with the highest concentration.I.2-Effect of Agrein on the meiotic behavious of vicia Faba.After the treatment of Vicia faba slower buds with the following concentrations of Agrein (1-5 2-5 3-5) g/L day after day, we found that the rate of aberration increases by increasement of the concentration in both of first and second meiosis and the highest percentage obtained was 46% with the higher concentration comparing with the control.I.3-Effect if Agrein on Allium cepa.Allium cepa was treated with the same concentration of Agrein, we found some aberration in the root tips of the plantII-Biochemical genetic studiesI- Electrophoretic analysisI.1-For vicia fabaAgerin induced obvious altrations in the electrophoritic profiles of the seed proteins of Vicia faba. The maximum number of bands was 17. Comparison between the treated samples and the control revealed the existence of some changes in the protein banding pattern among the treated samplesI.2- For miceBy treatment the mice with the following doses ”1.5- 2.5 -3.5” g/L of Agrein.The electrophoresis of mice liver protein indicate that the maximum number of bands was 24 and some protein bands exist in control disappear in the treated groups and vice versa.II-Izozyme analysis.1- For vicia fabaa. Esterase isozyme profiles exhibite a maximum number of four bands in the highest concentration while only two bands present in the controlb. Peroxidase isozyme profiles revealed only shading in all samples and the controlc. Glutamate oxaloacetate transaminase (GOT) isozyme profiles revealed only one band in all treatments and the control.2- For micea- Esterase isozyme profiles revealed that the maximum number of bands are four in the control while the treated sample showed only three bandsb- Peroxidase isozyme profiles exhibite only one band in all groups and the controlc- Glutamate oxaloacetate transaminase isozyme profiles revealed two bands in all treatment except the highest dose

absolutely disappeared.III- DNA analysisTumer suppressor gene p53 was affected by treating the mice with the three doses of Agerin which revealed the occurance of mutation.