PREFERENCE OF STORED SEED INSECTS ATTACKING SELECTED MEDICINAL PLANT SPECIES GERM-PLASM.

BY

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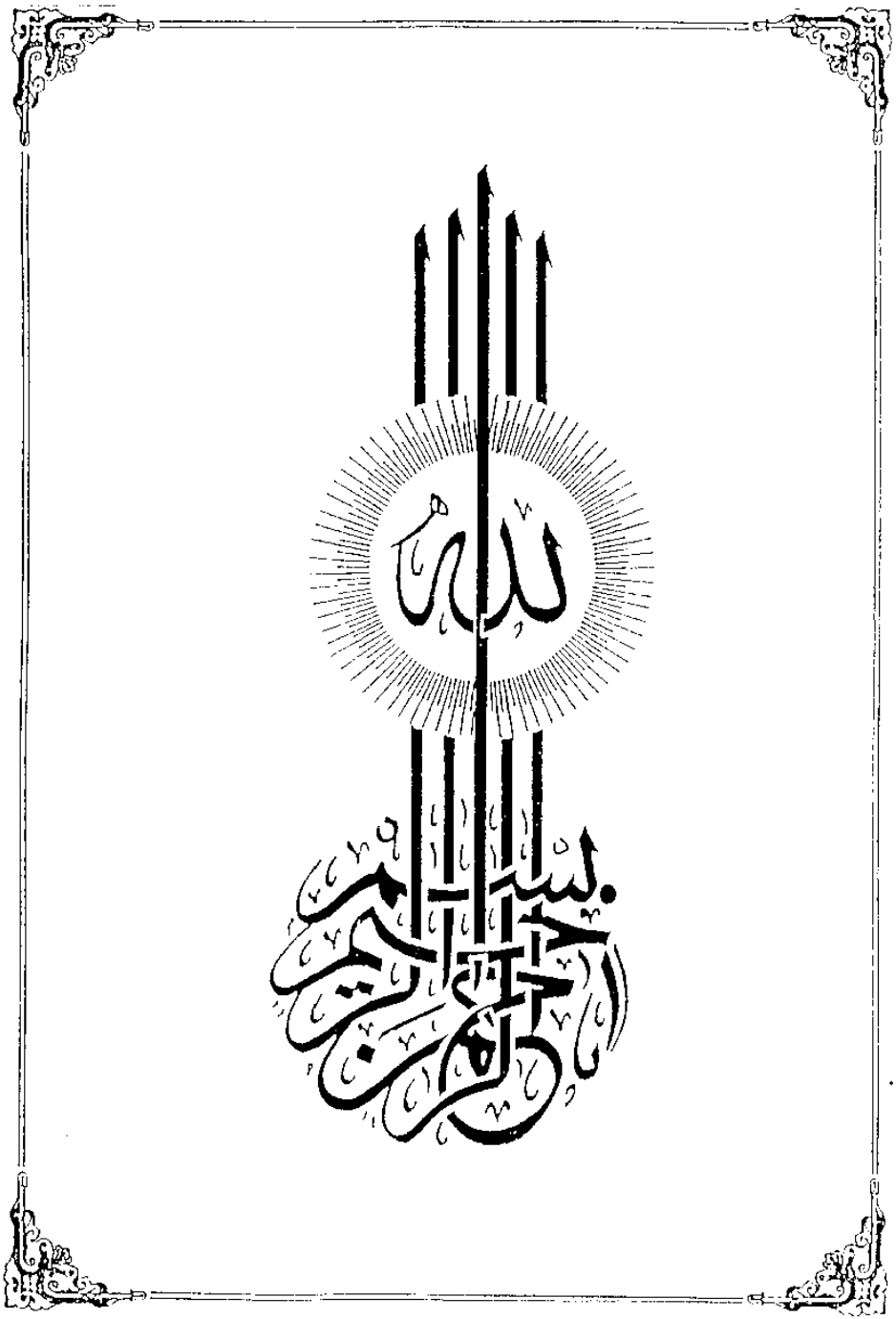
ABSTRACT

Serious infestations with cigarette beetle, *Losioderma serricorne* (F.) were noticed on aromatic seed resources prior to conservation in the



store. However, plant accessions, prebreeding materials and fractionated seed populations showed definite genetic differences in their resistance to the store pest. Among these species, coriander, *Coriandrum sativum* L. and fennel, *Feoneculum vulgare* L. had a current program of breeding, where pest resistance could be included in early generations. Therefore, 38 strains of physiologically homeostated group of coriander and 27 strains of fennel in addition to ten crude populations were subjected to screening for resistance to *Lasioderma* in intense laboratory experiments. The population dynamic of the anobiid was outlined and the genetic differences in the strains of both species were checked to enable the attributions of results. All seed materials were successively extracted with pet. ether, chloroform, acetone and ethanol. The quantitative residues of all strains/solvent were distributed as a continuous variation, grouped on basis of scatter grams of two solvent residues and summarized into 4-6 groups in a duster technique. The final experimental groups of strain seed residue were combined for bioassay of the insecticidal action. Concentrations of 0,1,2 and 4% were used and realized mortality was followed along 6 days. Through variance analysis, the scores of average mortality (AM %), lethal time of 50 (LT_{50}) and the end time mortality (ETM%) were computed and revealed differential degrees for the group and/or concentration. Partial mortality (PL.M%) of each solvent in group of strains was also computed. Predicted mortality (PM%) was available

from different solvents/strains and it was related to percentage of seed infestation. Nine characterized strains of these groups were elected for each species for phytochemical analysis. Each solvent strain residue was phytochemically screened. Significant contributions of unsaponified matter, coumarines, flavonoid glycosides, volatile oil and amino acids are detailed and discussed through correlating them qualitatively and quantitatively. As a result, the way is opened to include store pest resistance as a breeding gool for consumer welfare.

Key words:

Coriandrum sativum L., *Feoneculum vulgare* L., Strains, Seed viability, Seed index, Heritability, *Lasioderma serricorne* (F.), Percentage seed infestation, Successive extraction, Insecticidal activity, Average mortality (AM%), Lethal time of 50 (LT_{50}), End time mortality (ETM%), Unsaponifiable matter, Fatty acid, Volatile oil, Sterols or triterpenes, Carbohydrates, Glycosides, Flavonoides, Coumarines, Tannins, Saponins, Alkaloids, Amino acids, Protein.

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