

COMPATIBILITY BETWEEN STRAINS OF *TETRANYCHUS PUERARICOLA* (ACARI: TETRANYCHIDAE) CORRELATED WITH DISTANCE BETWEEN SITES OF THEIR ORIGIN

Akiyuki Suwa^{1,2}, Yasuki Kitashima^{1,3} and Tetsuo Gotoh^{1,4}

1. Laboratory of Applied Entomology and Zoology, Faculty of Agriculture, Ibaraki University, Ami, Ibaraki 300-0393, Japan;
2. Present address, Nihon Nohyaku Co., Ltd., Oyamada 345, Kawachi-Nagano, Osaka 586-0094, Japan;
3. Present address, Fuji Environmental Service Co., Ltd., 5-5-7 Hirono, Shizuoka 421-0121, Japan;
4. Corresponding author (e-mail: gotoh@mx.ibaraki.ac.jp).

ABSTRACT - To test the hypothesis that the degree of incompatibility between strains of mites is correlated with the distance between the areas of their origin, seven local strains of *Tetranychus pueraricola* Ehara and Gotoh (Acari: Tetranychidae) were crossed with the Hitachi-ohta (Ho) and the Onoma (On) strains. For each F₁ generation obtained from crosses between the On strain and local strains, the number of eggs laid per female, egg hatchability, survival rate in immature stages, female ratio and average number of female offspring produced per female were similar to the values obtained in crosses of the On parent strain. Similar results were obtained for crosses between the Ho strain and all but one of the local strains. However, egg hatchability and average number of female offspring produced per female in the B₁ generation were less than those in the F₁ generation with large variations among cross combinations. The female ratio was significantly higher in the B₁ generation than in the F₁ generation. Thus, the F₁ generations obtained from crossings between any two strains were viable and fertile, but the degree of incompatibility in the B₁ generation varied from almost infertile to fertile. If compatibility in any one cross combination is estimated by “egg hatchability” and “female ratio”, the compatibility in the B₁ generation was significantly correlated with the distance between the areas of their origin.

Keywords - Acari, Tetranychidae, reproductive incompatibility, *Tetranychus pueraricola* Ehara and Gotoh, hybrid, geographical distance, fertility, Leguminosae, Japan.

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