Effect of 2,4,5-Trichlorophenoxy Acetic Acid on Hatchability of *Thrips tabaci* Lind Eggs

MALEK[1] had noted that indol acetic acid at 5 ppm encouraged the eclosion of eggs of *Aedes trivittatus*. SHAZLI and GAWAD[2] had remarked that *Thrips tabaci* eggs hatch faster in plant tissue than in petri-dishes at 22 ± 1 °C and 100% relative humidity (RH). This was attributed to lack of nutrients in petri-dishes or to difference in osmotic pressure, or to absence of plant hormones. The high percentage of hatchability (69.23–90.9%) of *Thrips tabaci* eggs in petri-dishes encouraged the authors to test the effect of hormones on their hatchability outside plant tissue in petri-dishes. It is the purpose of this paper to verify the effect of one of the plant hormones, 2, 4, 5-trichlorophenoxy acetic acid, on the percentage of hatchability of *Thrips tabaci* eggs.

Table I. Effect of 2,4,5-trichlorophenoxy acetic acid on hatchability of eggs of *Thrips tabaci* Lind

Concentrations of hormone (ppm)	No. of eggs treated	No. of hatched eggs	Hatchability (%)
0.0	25	10	40.0
0.6	17	7	41.1
0.9	17	15	88.2
1.5	17	6	35.3

Table II. Effect of 0.9 ppm 2,4,5-trichlorophenoxy acetic acid on 24-h-old eggs of *Thrips tabaci*

Replicate	Hatchability (%) Treated	Untreated
1	75.0	50.0
2	30.0	19.4
3	68.9	37.5
Mean	67.8	35.9

Materials and methods. The hormone was dissolved in ethanol 95%. Aliquots were taken to make the following concentrations: 0.02, 0.03, 0.05%. Filter papers were wetted each with 3 ml of each of these solutions which gave net concentrations of 0.6, 0.9, 1.5 ppm in each petri-dish, respectively. Excess of alcohol was evaporated before introduction of the eggs into the dishes.

Eggs were dissected out of castor-oil leaves 24 h after their deposition by the method described before by the authors. They were placed on wet filter papers in petri-dishes; 17 eggs in each. To confirm the stimulating effect of the 0.03% concentration (0.9 ppm) on hatchability, 20 eggs were used per petri-dish in each replicate.

Hatching eggs were daily scored on the 4th to the 7th day.

Results and discussion. Table I indicates that the percentage of hatchability was low at the concentrations of 0.06 ppm and 1.5 ppm; the most effective concentration was 0.9 ppm as that concentration raised the hatchability to 88.2%. 3 further replicates confirmed the positive effect of 0.9 ppm of the hormone. The results in Table II show that the average percentage of hatchability was 35.9 in the check, and nearly twice as high in the treated eggs.

Student's t test and the corresponding P values emphasized the significance of the hormone treatment; $t = 4.7$ ($P > 0.01$) Snedecor 66. The effect of the plant hormone's vapours on the eggs is obscure but is emphasized.

Résumé. On a recherché l'effet à divers degrés de concentration de l'acide acétique 2,4,5-trichlorophénoxique soluble dans l'éthanol sur des œufs de *Thrips tabaci* agés de 24 h. La concentration de 0,9 ppm de cette hormone végétale a approximativement doublé le pourcentage des éclosions.

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Wirkungen von Gallensäure und Vitamin D auf die Kalziumresorption bei der Ratte

Bei Studien über die erhöhte Kalziumresorption durch Gallensäuren[1,2], sind Vergleiche der Wirkungen von Vitamin D_3 und der Gallensäure Taurochenodeoxycholat auf den Kalziumresorptionsprozess im Duodenum und Ileum junger Ratten gemacht worden.

Methoden. 3 Wochen alte, männliche, Sprague-Dawley-Ratten wurden mit einer Vitamin-D-Mangeldiät[3] 21 Tage lang ernährt. Nach 14 Tagen dieser Diät wurden die Ratten in 2 Gruppen geteilt. Einer Gruppe wurde kein Zusatz gegeben, den Tieren der anderen Gruppe wurden 7 Tage lang, täglich 200 IE Vitamin D_3 in 0,2 ml Maisöl, oral verabreicht. Einen Tag nach der letzten Vitamindosis wurde der Ductus choledochus jeder Ratte zwischen Knoten geschnitten[2]. Alle Ratten wurden anschliessend 3 Tage lang, bis 3 h vor den Kalziumresorptionsversuchen, mit einer kalziumarmen Diät[4] versorgt. Unter Äthernarkose wurden 7 cm lange, geschlossene duodenale oder ileale In-vivo-Darmsegmente[5] präpariert. Jedem Segment wurde 0,5 ml der folgenden Lösungen ver-

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