

# ENZYME ACTIVITIES IN RESISTANT FIELD POPULATIONS OF *MUSCA DOMESTICA* (L.) (DIPTERA: MUSCIDAE) FROM MOSCOW

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Enzyme activity was determined spectrophotometrically used 3-5 days old imagoes *M. domestica*. Total esterases - by van Asperen method (substrate 1-naphthyl acetate), cholinesterase activity – by Ellmann method (substrate acetylthiocholine iodide). Total acid phosphatase activity using 4-nitrophenylphosphate as a substrate. Protein concentrations were determined according to Lowry.

Activity of esterases and acid phosphatase were studied in the field populations of houseflies *M. domestica* collected in Moscow (Tverskaya, TEC-26, Rassvet, Krylatskoe) and compared to susceptible strain Cooper. It was determined higher level of esterases and acid phosphatase activities in abdomen and head homogenates related with resistance to pyrethroids and organophosphorus compounds. Esterase activity in head homogenates were: Cooper – 100%, Tverskaya – 72%, TEC-26 – 61%, Rassvet – 103%, Krylatskoe – 88%; in abdomen homogenates were: 100%, 216%, 125%, 138% 158% respectively. Cholinesterase activity in head homogenates were Cooper – 100%, Krylatskoe – 128%, Rassvet – 102%. Acid phosphatase activity in head homogenates were: Cooper – 100%, Tverskaya – 122%, TEC-26 – 70%, Rassvet – 127%, Krylatskoe – 124%; in abdomen homogenates were: 100%, 116%, 85%, 137% 121% respectively.

Investigates of esterase nonsusceptibility to paraoxon showed its resistance in head homogenates of Tverskaya and Rassvet populations. In abdomen homogenates this effect we occurred in Krylatskoe population.