



Figure 5. Synthesis of glycogen and triglyceride by *Culex nigripalpus* females after a 50% glucose meal. Modified from Nayar & Sauerman (1975a).

25% sucrose than on the other two concentrations. Both the volume and the caloric intake of the sucrose increased rapidly after the first day, reached a maximum during the next 5 days, and then declined sharply, stabilizing at a maintenance level with minor fluctuations during the subsequent 4 weeks (Nayar & Pierce 1980). Similar patterns of sugar intake have also been observed in the blowfly *Phormia regina* (Gelperin & Dethier 1967), *Ae. taeniorhynchus* (Nayar & Sauerman 1974b), and F_1 *Cx. nigripalpus* females maintained on a 10% radioactive sucrose solution ad lib. (Nayar et al. 1979). The total amount of sugar present in those females that fed on the 5% or 10% solution was very low (0.08 to 0.33 cal (0.34 to 1.38 joules) per female) and rarely changed, suggesting a rapid metabolism on free sugar following ingestion. However, at higher concentration (25% sucrose) a large amount (0.63 to 0.89 cal (2.64 to 3.73 joules) per female) of free sugar was always present in the females. After the first week, glycogen accumulation stabilized and gradually decreased in females fed on either 5% or 10% sucrose, but remained high in females fed on the 25% sucrose. Triglyceride reserves were consistently lower in those females which fed on 5% sucrose when compared with the other two concentrations, especially 25% sucrose, where the amount of triglyceride reserves remained very high. As observed in both *Ae. taeniorhynchus* and *Cx. nigripalpus* (Nayar & Pierce 1977, Nayar & Sauerman 1974b), a maximum accumulation in the energy reserves (glycogen and triglycerides), at a specific concentration of sucrose, regulates