Eurydema ventrale is an important pest of Cruciferae and Capparaceae species. This species is distributed throughout Europe including Turkey. Due to agricultural and economical losses resulting from the insect damage to the crops, it is important to examine female reproductive system of E. ventrale. In this study, structure of the female reproductive system of E. ventrale is studied using light, scanning and transmission electron microscopes to contribute for a better understanding of its biology. The female reproductive system of E. ventrale consists of the paired ovaries with ovarioles, a pair of lateral oviducts, a common oviduct, a spermatheca and the paired accessory glands. Each ovariole consists of terminal filament, tropharium, vitellarium, and pedicel. The ovarioles in the ovary are connected to each other by terminal filaments forming a compact bunch shaped structure. Apical part of ovariole is formed by a tropharium region with large trophocytes and small prefollicular cells. The latter are located at the basal part of the tropharium. Trophocytes contain a large nuclei, many ribosomes and mitochondria in the cytoplasm. The centre of the tropharium, termed the trophic core makes a connection with trophocytes and oocyte in the vitellarium. Trophocytes and oocytes communicate with the core by means of long cytoplasmic processes and by nutritive cords, respectively. The other region of ovarioles in E. ventrale is constituted by vitellarium. The vitellarium is characterized by oocytes in three different development stages: Previtellogenesis, vitellogenesis and choriogenesis. Undeveloped oocyte in the previtellogenesis stage is surrounded by a single columnar epithelium in which has a great number of rough endoplasmic reticulum and mitochondria. On the oocyte surface in the vitellogenesis stage, variable shaped polygons are clearly seen and abundant organelles are seen in the follicular cells. During choriogenesis numerous rough endoplasmic reticulum and ribosome appear in the cytoplasm of the follicular cells. At this stage of egg maturation, there is a chorion layer which is composed of two well-differentiated layers: a narrow electro-dense endochorion, and a thick exochorion. At all stages, lipid droplets and protein granules are found in oocyte. Each ovariole connects through a pedicel to the lateral oviduct. Lateral oviducts unit together in the middle line of the abdominal cavity, forming the common oviduct, which is very short relative to the total size of the reproductive system. The common oviduct opens ventrally the genital chamber. The oocytes leave the terminal portion of the ovariole towards the lateral oviduct and are fertilized when going through the genital chamber.
Fig. 1: General view of female reproductive system in Eurydema ventrale

Fig. 2: Tropharium and vitellarium in Eurydema ventrale

Fig. 3: The oocyte surface in the choriogenesis stage of Eurydema ventrale

Fig. 4: The oocyte in the previtellogenesis stage of Eurydema ventrale