The origin of lateral roots is one of the determinants of the structure of the overall architecture of the root system of plants. Individual plant species differs in point of initiation of lateral roots in the longitudinal and transverse plane of the parent root. This paper briefly summarizes the findings relating to the establishment and development of lateral roots in the model of plant Arabidopsis thaliana and on the sample of several species of ferns and monocots and dicots of literature outlines the variability that manifests itself especially during initiation of lateral roots. The ferns initiation site located in the endodermis of the parent root, for other species to form the lateral root primordium of pericycle cells that are found in a certain position in relation to vascular elements in the central cylinder of the parent root. Another highly variable factor in the development of lateral root initiation site is the distance from the root apical meristem, which is related to the place of the auxin signal competent cells and also the rate of growth and progress of cells from the parent root apical meristem.