Apple scab, the most serious disease of apple is caused by fungal pathogen Venturia inaequalis. Knowledge about the apple response to apple scab attack on the cellular and tissue level is insufficient. For studies of Malus-Venturia interaction on the cellular and tissue level, the establishment of methods for cell structures visualization in apple leaves is necessary. In this work, the experimental plant material grown in vitro and ex vitro was successfully established and the method of apple infection by conidia of V. inaequalis was optimized. Various methods of cell components visualization such as vital staining, in situ immunolocalization, transformation, environmental scanning electron microscopy and confocal microscopy, were tested. Cell structures, such as the cytoskeleton, the cell wall and the cuticle were visualized in apple leaves. Preliminary experiments following specific the changes of cell wall structures induced by V. inaequalis attack were performed. Further, changes of cuticle structure, the first barrier for penetration of pathogen to plant tissues during infection, were observed during the leaf ontogenesis.