

Abstract

Stomata are structures located in higher plants' epidermis and they regulate mainly CO₂ intake and transpiration. The stomata are important for plants' protection against excessive water loss during osmotic stress. This thesis is a literary research summarizing stomatal movements regulation during osmotic stress. The main part of the thesis is focused on stomatal closure with the help of ABA under water deficiency conditions. There are the ABA synthesis, transport and its impact on stomata described in individual chapters. The ABA early signalling pathway and an ionic channel regulation are described in detail on the basis of the published data. The second part of the thesis is about second messengers produced by ABA and their impact on stomatal movement regulation. The special attention is paid to hydrogen peroxide and nitric oxide and their contribution to stomatal closure. The last part is about passive (hydraulic) stomatal closure.

Keywords: plants, stomata, osmotic stress, ABA, stomatal movements