CHANGES IN METABOLIC EFFICIENCY DURING CORN SEED GERMINATION

Elena LUTCAN[1], Ala BOROVSKAIA[1], Raisa IVANOVA[1]

e-mail: elena.lutcan@sti.usm.md

Abstract

Plant growth can be defined as an irreversible process of increasing size and biomass, often associated with the formation of new structures: root and shoot growth is a complex multistage biochemical and physiological process. The purpose of this study was to evaluate changes in the metabolic efficiency of corn seeds during ten days of their germination. The objects of the study were seeds of corn hybrids P280, P398 and P402, which have different ripening periods and differ in endosperm structure. The metabolic efficiency of seeds was determined after 5, 7 and 10 days of germination under optimal conditions. The maximum content of reserve substances utilized for germination and root/shoot growth was observed during 5-7 days of seed germination. Moreover, for two hybrids (P398 and P402) it was necessary to germinate for 7 days to achieve the highest metabolic efficiency, but hybrids P280 had the maximum metabolic efficiency on the 5th day. After this period the metabolic efficiency of seeds decreased. The obtained results can be used to change the methodological approaches to the comparative determination of metabolic efficiency of corn seeds of various hybrids.

Key words: corn seed, germination, metabolic efficiency