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摘要: 以耐涝品种垦丰14和不耐涝品种垦丰16为试材, 采用双层套盆法, 研究淹水胁迫时间(1, 3, 5, 7, 10 d)对不同耐涝性大豆品种苗期根部形态和生理指标的影响。结果表明: 两个品种均在淹水处理第3天出现不定根, 与CK相比, 短时间(1~3 d)胁迫, 根瘤数、电导率、丙二醛和脯氨酸含量变化无明显差异; 随着胁迫时间增加, 根瘤生长受到抑制, 耐涝品种根瘤受到抑制程度小于不耐涝品种, 不定根数量、电导率、丙二醛含量均增加, 且相同胁迫时间垦丰16增幅大于垦丰14。脯氨酸含量变化与其他生理指标不同, 垦丰14在淹水第7天开始大幅度增加, 而垦丰16在淹水第5天开始大幅度增加, 在胁迫处理7 d内, 垦丰16增幅大于垦丰14; 胁迫处理7 d以后, 变化趋势相反。

Abstract: Under waterlogging stress at seedling stage by using double set of basin, two soybean varieties, Kenfeng 14 with stronger waterlogging tolerance and Kenfeng 16 with the weaker, were used to study the effect of waterlogging time (1, 3, 5, 7, 10 days) on root morphology and foliar physiological indexes of soybean. Adventitious roots were occurred after 3 days of waterlogging stress, compared with CK, number of nodules, relative conductivity, MDA of two varieties changed little at the first three days. while with the increasing of stress time. The growth of root nodules was restricted with prolonged stress time and nodule numbers of Kenfeng 14 was less restrained than Kenfeng 16. With the increasing of stress time, adventitious roots number, relative conductivity, and MDA content of the two varieties were all increased, and at the same stress time, increment of Kenfeng 16 was significantly greater than Kenfeng 14. Different from other physiological indexes, significant increase of proline content appeared at seventh day of waterlogging stress for Kenfeng 14 and at the fifth day for Kenfeng 16. In the first 7 days, proline content of Kenfeng 16 was significantly greater than Kenfeng 14, while had the opposite trend from 7 to 10 days.

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