

研究论文

# 水分胁迫对不同抗旱性小麦品种芽根生长过程中IAA、ABA含量的影响

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**摘要** 用30%的PEG-6000模拟干旱条件, 对抗旱性强的北农2号和抗旱性弱的921842萌发期的小麦 幼苗根系进行水分胁迫处理, 分别在处理后0、3、8、20、32、45h测定了IAA、ABA含量及芽、主胚根的长度、含水量。结果发现: 水分胁迫引起两个品种根、芽中ABA含量大量增加, 抗旱性强的北农2号ABA反应较抗旱性弱的921842快。在胁迫3h, 北农2号的根、芽中ABA就有开始增加; 而921842在胁迫8h才开始增加。胁迫条件下, 921842芽中ABA的含量较北农2号高。较对照增加幅度大。水分胁迫下两个品种芽中IAA含量均有降低的趋势, 921842降低相对较多; 但胁迫引起了北农2号根中IAA含量在3h和8h大幅度升高, 随后下降。921842在胁迫3h IAA含量稍有升高, 随后降低到低于对照的水平。无论是胁迫条件下, 还是正常水分条件下, 根中IAA含量的峰值均在芽之前。水分胁迫对芽生长的抑制与ABA含量的升高和IAA含量的降低有关, 但根系生长与两种内源激素的关系则较复杂。

**关键词** [IAA](#) [ABA](#) [水分胁迫](#) [小麦](#)

分类号

## Effects of Water Stress on Level Changes of IAA and ABA in Root and Shoot of Different Drought Resistance Wheat

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**Abstract** Desiccation-stress conditions were applied to the roots of winter wheat using 30% (w/v) polyethylene glycol(PEG). The levels of indole-3-acetic acid(IAA) and abscisic acid(ABA) in roots and shoots of wheat with strong drought-resistance and weak drought resistance wheat were determined by ELISA after water stress. The enhancement in ABA in both roots and shoots during water stress was observed. The largest increased contents of ABA were found in roots at 3h and in shoots at 20h after treatment in Beinong No.2 (a cultivar resistant to drought), respectively. And that were found at 8h after water stress treatment in both root and shoot in 921842 (a cultivar no resistant to drought). But the level of IAA in root and shoot were very different, the level of IAA in root increased strongly at 8 h after treatment in Beinong No.2, then decreased. However, there is only a little increase at 3h in 921842. But, the level of IAA in shoots decreased, especially cultivar 921842 no resistant to drought. The inhibition of shoot growth under water stress conditions is directly related to the increased level of ABA and decreased level of IAA, especially the IAA/ABA. But the relation of the root growth and phytohormones were complicated.

**Key words** [IAA](#) [ABA](#) [Water stress](#) [Wheat](#)

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