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Aerenchyma plays a major role in imparting water logging tolerance in soybean (*Glycine max*)

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Soybean is extremely sensitive to water logging stress and even a short period of as long as few hours can cause a considerable reduction in its overall performance. Plant root requires adequate amount of oxygen for proper growth and development. However, water stagnation for a considerable period makes this oxygen unavailable to the roots (hypoxia or anoxia) causing them to decay and resulting in plant death. In this experiment, we have studied the root characters viz., root porosity, adventitious root formation and aerenchyma development in seven indigenous soybean genotypes viz., JS 95-60, JS 97-52, JS 20-38, NRC 37, JS 335, JS 93-05 and PK 472. The studies show that there is a direct effect of adventitious root formation and root porosity to the better survival of the plant, which was in line with the anatomical studies which confirmed that these roots possess gas spaces (aerenchyma) thus enabling them to absorb atmospheric oxygen leading to better plant survival. This study found that genotype JS 20-38 has performed very well under water logged conditions followed by JS 97-52. Thus it is verified that quantification of these roots can be taken as a criteria to screen for water logging tolerance.