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| Abstract: | The symbiosis between the root-nodule bacteria of the genus Rhizobium and legumes results in the fixation of atmospheric nitrogen in root-nodules. This symbiotic relationship is of special significance to legume husbandry as seed inoculation with effective strains of Rhizobium can meet the nitrogen requirements of the legume to achieve increased yields. In all regions of the world where food consumption exceeds production or where nitrogenous fertilizer has to be imported, leguminous crops have a special relevance. Self sufficiency for nitrogen supply and the high protein and calorific values of food, forage and feed legumes make them increasingly attractive. Greater use of legumes can have a significant beneficial impact in tropical countries where population increase and food production are most out of balance, and where the purchasing power for imported fertilizers is least adequate. Long-term effects of crop rotation, crop residue treatment and mineral fertilizer application levels on topsoil carbon (C), plant N uptake, net N mineralization and soil organic matter fractions in soils. Soil acidity has a negative impact on fertility, biological activity and plant productivity. In India, it is about 100 million hectares of the total geographical area. Symbiotic nitrogen fixation may be adversely affected by acidic environments. This dissertation describes experiments that assess the acidic sensitivity of: 1) Rhizobium as symbiosis organisms; 2) Cajanus cajan nodule function; and 3) Cajanus cajan nodule formation; 4) Growth rate of cajanus cajan; and Identify the up/down regulated proteins. The growth rate of Rhizobium in culture media is slowed / fast. Some strains were incapable of growth according to their growth characteristic. Proteomic approaches were applied to identify candidate genes and proteins involved in it. In our present study we find that protein changes between isolates from normal pH and acidic pH intervals (marked by arrows). Lot of protein changes in form of prominent spots which were altered across the various isolates collected from various pH regimes. Such changes reflect the adaptative changes which are under play at protein level for helping the bacteria survive under harsh acidic pH regimes. On the other hand, it is also a possibility that such changes reflect many other protein changes which arise out of processes, such as post-translational modification and the presence of isoforms. |
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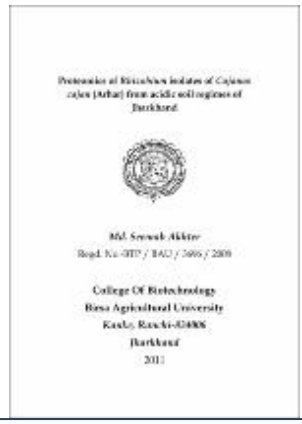
| 1346 Seemab Akhtar.pdf | 7.82 MB | Adobe PDF |  |

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