Protein Profiles in Roots of Aluminum-Sensitive and Aluminum-Tolerant Soybeans

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Four soybean lines were screened for aluminum (Al) tolerance at pH 4.2 in a greenhouse using nutrient solution method. Based on root length criteria, two of them were chosen, namely Lumut and Yellow Biloxi as sensitive and tolerant lines, respectively. The two selected lines were then evaluated for their specific responses to Al stress by hematoxylin staining and by gel electrophroresis methods. By hematoxylin, Lumut was grouped into Al-accumulator type, while Y. Biloxi was grouped into Al- excluder type.

To study the relationship between Al toxicity and tolerance response of the selected lines we isolated proteins of root tips that had been subjected to 0.7 mM Al for 2-3 days. The proteins were isolated using *SDS-PAGE.* Electrophoregrams of *SDS-PAGE* revealed that Lumut did not express specific protein, while Y. Biloxi specifically expressed a 78.9 kD protein. By immunoassay test using this protein as the antigen, we can develop and produce a rapid detection kit for identifying Al-tolerance character in soybean crops.