

Characterization of nutrient deficiency symptoms in sweetpotato through farmer-scientist participatory approach

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ABSTRACT

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The nutritional disorders in the leaves, shoots, and root systems of sweetpotato variety PSB SP-17 were evaluated using the solution culture technique. Nutrient deficiency symptoms were established for the following elements: nitrogen, phosphorus, potassium, magnesium, calcium, sulfur, iron and micronutrients. Thirty-six healthy stem cuttings of sweetpotato were allowed to root for one week before placing them in culture bottles containing the nutrient solutions representing the various treatments. The sweetpotato cuttings were grown in culture bottles for more than two months and visible deficiency symptoms of each element were noted as they occur in the leaves and roots. Results showed that each nutrient element has a characteristic deficiency symptom there were also some similarities in the general performance of sweetpotato in nutrient deficient culture solutions. These similarities include the stunted growth of the plant and general yellowing of the leaves and reduced root biomass.

After the symptoms were established in the laboratory, farmers from two sweetpotato producing towns in Pinabacdao, Samar and Dulag, Leyte, Philippines were asked to identify the symptoms using their own indigenous knowledge and perception. Farmers' concept of crop health and assessment of deficiency symptoms were likewise noted.

Keywords: nutrient deficiency symptoms, farmer-scientist participatory characterization, sweetpotato variety, PSB Sp-17

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