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The metabolic interaction of potassium salt of active phosphorus and its stimulatory effects on the growth and productivity of sugarcane under stressful environment

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The world's population has been increasing rapidly day by day and would demand more food from the limited natural resources such as land and water. Agricultural productivity will have to be increased substantially by using available resources, which are being depleted rapidly. Therefore, it is a challenging and herculean task for farming communities and agricultural technologists to fulfill the basic needs of the ever-increasing population. Agricultural scientists are engaged in developing improved varieties of crops along with their matching agro-technologies. Enhancing productivity and improving the quality of agricultural produce are the prime objectives of all the agricultural development organizations and funding agencies, and they are striving hard to achieve the same. Plant nutrients play a very important role in crop growth, development, and production. The role of phosphorus (P) in metabolic processes and potash (K) for inducing ability in plants is very significant to tolerate major abiotic and biotic stresses. These major crop nutrients are supplied traditionally through chemical fertilizers through soil irrigation, resulting in only 10–20% absorption by crop plants. The share of 80–90% of phosphate gets fixed in soil which is not available for the plants. To overcome these challenges on phosphorus and potash, the potassium salt of active phosphorus (PSAP) was invented using catalytic technology. The technical molecule of PSAP is 180% water-soluble and easily absorbed by the plant roots and leaves and plays a vital role in plant metabolism by inducing tolerance to the major biotic and abiotic stresses. Application of PSAP increases plant productivity from 30 to 50% with remarkable improvement in product quality along with the reduction in the cost of cultivation. The inclusion of PSAP in farming will certainly enhance the farmers' income due to earning substantial additional profits. In conclusion, PSAP has emerged as a molecule of choice for enhancing the farmers' income by improving the yield and quality and reducing the cost of crucial inputs.