

## **The Application of Nuclear Energy for Sustainable Agriculture and Food Security: A Review**

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**Abstract :** The goals of sustainable agricultural are development, improved nutrition, and food security. Sustainable agriculture must be developed that will meet today's needs for food and other products, as well as preserving the vital natural resource base that will allow future generations to meet their needs. Sustainable development requires international cooperation and the effective use of technology. Access to sustainable sources of food will remain a preeminent challenge in the decades to come. Based upon current practice and consumption, agricultural production will have to increase by about 70% by 2050 to meet demand. Nuclear techniques are used in developing countries to increase production sustainably by breeding improved crops, enhancing livestock reproduction and nutrition, as well as controlling animal and plant pests and diseases. Post-harvest losses can be reduced and safety increased with nuclear technology. Soil can be evaluated with nuclear techniques to conserve and improve soil productivity and water management.

**Keywords :** food safety, food security, nuclear techniques, sustainable agriculture, sustainable future

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