

Potato + Maize Intercropping: An Eco-friendly Pest Management Approach for Climate Resilient Agriculture

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NEWS STORY

Climate change is one of the major challenges to the productivity and sustainable growth of the agricultural sector in Bihar due to moderate to severe water stress, droughts as well as changes in temperature. Climate change may increase the prevalence of insect-pest and diseases that affect productivity of crops. Chemical controls are the only strategy being currently adopted by the farmers and rely on synthetic organic insecticides to manage the insect-pests and diseases in the crops. This increases the risk of environmental contamination, loss of biodiversity, health hazards, killing of natural enemies and development of insecticide resistance. To avoid ill effects of chemical pesticides, use of ecofriendly methodology like intercropping and strip cropping technique are effective for insect-pest and disease management in the crops. Intercropping of potato with maize has



demonstrated by KVK, Narkatiaganj and Madhopur in an area of 30 acre in five villages of district West Champaran, Bihar under the **Climate Resilient Agriculture programme**. Intercropping of potato with maize play an important role to reduces the potato tuber moth population by increasing several natural enemies including parasitoids (e.g., *Copidosoma koehleri* Blanchard; *Diadegma pulchripes* (Kokujev); *Temelucha decorate* (Gravenhorst); *Bracon gelechiae* Ashmead) and predators (e.g., *Coccinella septempunctata* Linnaeus; *Chrysoperla carnea* Stephens; *Orius albidipennis* (Reuter). The practice of intercropping of potato with maize markedly reduces the incidence and rate of disease development of bacterial wilt (*Pseudomonas solanacearum*) and Rhizoctonia rot (*Rhizoctonia solani*) in the potato crop due to the effect of increased distances between individual potato plants, their spatial arrangement and the presence between potato plants of root systems of other plant species, all of which resulted in a reduction in plant-to-plant transmission via the roots. Intercropping also reduces the chance of total crop failure and assured income from some crops in the event of extreme weather events. It also reduces soil, water and nutrient loss due to effective ground cover, hedge formation and obstruction to runoff during heavy showers. Thus, intercropping is a sustainable adaptation to climate change especially to extreme weather events like temperature hike, floods and drought etc. for small landholdings farmers.

