

Increased Pesticide Use Could Make India Self-Sufficient in Vegetable Protein

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Leonard Gianessi and Ashley Williams

A large proportion of the population of India depends on pulses (chick pea, pigeon pea, mung bean, gram, lentils) for their daily protein requirements. In India, pulses are grown on 22-23 million hectares with annual production of 11-15 million tonnes and yield of about 600 kg/ha [1]. However, the yields of pulse crops in India are quite low in international comparisons. The net availability of pulses grown in India has decreased by 50% since 1951 due to stagnant production and population growth [1]. Due to the mismatch between supply and demand, prices of pulse crops have increased significantly, pushing pulses out of the reach of poor households [1]. Although India is the largest producer of pulse crops in the world with 25% share of global production, the country has to import 2-3 million tonnes of pulses. This dependence on imports for an essential source of protein is a matter of serious concern [1]. One of the major causes of low pulse yields in India is pest damage. Hence, there is an urgent need to increase production by reducing pest attack [2].

Key pest constraints to pulse crop improvement in India include foliar diseases, pod borers and weeds. The use of pesticides is minimal in pulse crops in India [3]. A survey of pulse farmers in four regions determined that 4-12% used fungicides, 0-24% used herbicides and 16-50% used insecticides [4]. Even in situations where farmers are ready to use these technologies, they are not properly trained to use the inputs in the right manner and at the right time [5]. Thus, attention needs to be paid to policy options (such as training and provision of spray services) that would increase application of pesticides in pulse crops [3].

About 30% of the potential production of pulse crops in India is lost annually due to insects and diseases [5]. These losses can be significantly reduced by the use of fungicides and insecticides. Research has demonstrated a reduction in pod borer populations of 90% and 60% reduction in *Ascochyta* blight incidence [6],[7]. Due to labor constraints and continuous rain, it is often impossible to remove weeds by mechanical or manual means. Research has shown bean yield doubled with herbicide use in comparison to traditional farmer practices [8].

References

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Pod borer larvae on chickpea



Ascochyta-infected lentils



Yellow dal, a dish made from pulses