Fungicides Are Key for Sustained Edible Oil Production from Groundnuts in India

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Spurred by sustained growth in per capita income, increasing population and urbanization, demand for cooking oil has been growing rapidly in India. Groundnuts, also known as peanuts, are the major source of edible oil in India. In the mid-1990s, India was self-sufficient in the production of edible oils, but in the post-WTO period, imports increased to about one-half of domestic consumption [1]. Low yield levels meant that Indian edible oils were not able to compete with cheap imports. To make India self-sufficient in edible oils, the production of oilseeds has to be increased.

India ranks first in groundnut area (8 million ha) and second in production. However, groundnut yield in India is less than half of major groundnut growing countries. Fungal foliar diseases are the major production constraint in India. Three fungal diseases, early and late leaf spot and rust are widespread and often occur together causing yield loss up to 50-70% [2]. The two leaf spots are often referred to in India as “tikka” leaf spot disease.

The fungi penetrate leaf cells and withdraw their contents causing the cells to collapse and die, forming spots. These foliar diseases lower yields by reducing the green leaf area available for photosynthesis and by stimulating leaf abscission leading to extensive defoliation. There is no resistant or tolerant variety to these diseases which will suit the agroclimatic conditions of India. As a result, use of fungicides is the only alternative for effective management of these diseases [3].

Several effective fungicides are available to control the diseases and have been extensively tested in India. Research has consistently shown yield increases of 60-70% [4][5]. However, most farmers are not using fungicides [1]. Farmers in India often consider the occurrence of late leaf spot as a sign that the crop is approaching maturity. ICRISAT developed a strategy that included one foliar application of a fungicide which provided consistently higher pod yield under farm conditions [6]. Demonstration of the technology led to >10,000 farmers adopting the practice. Through the adoption of fungicides, the average productivity of groundnut can be enhanced and existing large yield gaps can be narrowed in India.

References