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Contributions of Legumes to Human Nutrition and Health

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Description

Diseases that cause root rot are a major constraint on the production of legumes. The sicknesses push down seedling germination and cause post rise damping off, bringing about unfortunate harvest stand and low yields. In Ethiopia, a number of root rot casing pathogens have been identified, including Rhizoctonia bataticola, *Rhizoctonia solani*, and *Fusarium solani* on chickpea, Rhizoctonia bataticola, *Rhizoctonia solani*, and *Fusarium solani* on lentil, and Rhizoctonia bataticola, *Rhizoctonia solani*, and *Fusarium solani* on faba bean. They can cause yield misfortune up to 45% and half in faba bean and chickpea if appropriately not make due. On the basis of this information, a review was conducted to examine some of the current root rot management strategies for legume crops and to offer some recommendations for those that are not yet in use. Bio-gent, cultural practices, and a number of chemicals were used to control this disease. *Trichoderma viride* and *Bacillus megaterium* make up the majority of the bioagents used to treat this disease. Later on especially in our nation full abuse of the capability of organic control of this sickness must be finished. When developing resistant varieties, it is generally necessary to employ molecular-based strategies like marker-assisted selection in order to deploy resistance.

Vegetable Yields

The leguminosae (pea or bean family) are made out of approximately 690 genera and 18,000 species. Following the Gramineae, it is the second-largest family of seed plants. There are 18 to 20 species of leguminosae that are widely grown for their edible, high-protein seeds. The seed of vegetables are second just to oats as the main wellspring of nourishment for people and creatures. Most species of leguminosae, whose seeds, pods, or leaves are eaten by humans, are referred to as "food legumes." In India and Pakistan, two of Great Britain's colonized nations, the term "pulse" is used to describe the dry, mature seeds that humans consume.

In Ethiopia, smallholder livelihoods depend on legumes, which occupy approximately 13% of cultivated land and account for approximately 10% of the agricultural value added. In the country, these legume crops play a negative role. They add to smallholder pay, as a higher-esteem crop than oats and to slim down, as a savvy wellspring of protein that records for roughly 15% of protein admission and they right significant amino corrosive lacks in grains. Additionally, beats offer regular soil support benefits through nitrogen-fixing, which further develops yields of cereals through crop pivot and can likewise bring about investment funds for smallholder ranchers from less manure use. Additionally, pulses make a significant contribution to Ethiopia's balance of payments. After coffee and sesame, they are the third most exported crop, contributing USD 90 million to export earnings in 2007/08. Diseases, insect pest attacks, poor agronomic practices, and a lack of improved cultivars and crop protection technologies are the primary obstacles to the production of these crops. One of the main socioeconomic reasons for these crops' low productivity is also that the participatory approach's recommended crop protection technologies are not widely used. Diseases that cause root rot are a major constraint on the production of legumes. The sicknesses push down seedling germination and cause post rise damping off, bringing about unfortunate harvest stand and low yields. Seed-borne diseases are to blame, but most farmers use seeds from previous harvests, which goes against the idea of sanitary practices. This study's objective was to examine a number of existing methods for managing root rot in legume crops and offer some recommendations for those that are not yet in use.

Root rot frequently occurs after the seedling emerges due to persistent cool, wet weather. Stunted, yellow plants are among the symptoms, which may be mistaken for nitrogen. The plant's roots will be much thinner than those of a healthy plant when it is removed, or there may be no secondary roots at all. Roots will be stained and the variety and example of staining relies upon the microbe tainting the roots. There are four principal kinds: Aphanomyces root rot, Fusarium root rot, Pythium root rot, and Rhizoctonia root rot (bare patch). These contagious infections influence an extremely expansive host range, so crop revolution is of restricted viability. The fungus Rhizoctonia solani is to blame. Poor or declining stands serve as the initial diagnostic criteria. Root advancement is poor and roots are for the most part dark and delicate. At relatively low soil temperatures (65°F or 18°C), Rhizoctonia root rot can harm peas, but it is more aggressive in warmer temperatures (76°F to 86°F or 24°C to 30°C). The infection and disease caused by Rhizoctonia can occur at a wide range of soil moisture levels.

Treatment of Seeds

Current control methods for fungal pathogens that cause root rot have not been fully developed. The primary means of preventing root rot and other root diseases are proper sanitation and the use of clean planting materials. Before planting, chemical seed treatment is commonly used to prevent damping off, seed and seedling rot, and other fungal diseases. When chemical seed treatments and rhizobia inoculants are used together, however, issues arise. The seed fungicide may suppress the rhizobia bacteria's effectiveness or fail to protect against the intended pathogen in some instances. At last their outcome uncovered that seed treatment with fungicide (Copper oxychloride)+soil use of potential parasitic (Trichoderma disconnect) and bacterial bio-control specialist was viewed as unrivaled as it recorded the most noteworthy germination rate (100 percent), most elevated introductory (10.00) and last populace.

It is proposed that biological control is an efficient and non-hazardous method for reducing crop damage caused by plant pathogens. In a greenhouse, the faba bean was tested to see how Trichoderama viride protects plants from the black root rot infection. This study's findings suggest that faba bean black root rot can be controlled using the biological control agent Trichoderama viride. Another international study used synthetic plant resistance inducers like Salicylic Acid (SA) and Hydrogen Peroxide (H_2O_2) as antimicrobial or disease resistance inducers. It found that the tested bio-control agents and chemical inducers significantly reduced the linear growth of black rot casing fungi, either individually or in combination. In general, using chemical inducers and biocontrol agents in combination was more effective than using each of them separately.