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# The Cinnamon Therapist: An Image based Cinnamon Plant Stem and Branch Disease Detection and Treatment Recommendation System

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## **Abstract**

Cinnamon is a widely distributed spice that is used by people all over the world. Cinnamon is a member of the Lauraceae family and the spice family. It is extremely important for our country's economy and is in high demand on the global market. Sri Lanka is the world's leading cinnamon producer. It accounts for more than 90% of the global spice market. Cinnamon's inner bark is extensively used as the tastiest spice and as a medicinal substance. Therefore, many nations import Ceylon cinnamon, as it has a unique taste and scent. The objective of the author is to preserve the cinnamon plantation in Sri Lanka. Identifying and managing plant disease, which is currently done using the human eye of an expert by manually monitoring the plants, which is a costly, complex, and an unaffordable method. As a result, the demand for partially or fully automated plant detection systems can be identified as a research topic. Many diseases have different impacts on the cinnamon plant. As a result, Sri Lankan agriculture centers and cinnamon planters have a responsibility towards the country to improve and protect the cinnamon harvest for the future. Therefore, the author is attempting to discover diseases of cinnamon plants early so that planters can have healthy cinnamon plants by offering treatment techniques.

This application's core technical approach is image processing, which is accomplished using convolutional neural networks. The treatment recommendations related to the disease identified will be proposed. The cinnamon plant stem and branch samples were gathered manually, and the classification of the cinnamon plant stem and branch disease was completed under the observation of an expert.

This research aims to provide a proper solution by developing an application that analyzes cinnamon plant stem and branch disease from an image and recommends the best treatment that may be performed based on the kind of cinnamon plant disease in Sri Lanka. By the input of a cinnamon stem or branch image to the system, the user will be able to detect the type of cinnamon plant disease once the cinnamon image is uploaded. Following that, the disease type will be mapped with treatment criteria produced under professional supervision.

**Keywords:** Cinnamon plant stem and branch disease identification, Treatment Recommendation, Neural Network, Image Processing.