

Predictive Analysis of Ceylon Cinnamon Market Price Fluctuations Using Artificial Neural Networks

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Considering the demand for Sri Lankan Cinnamon in the world market, it is important to look at the economic status of Sri Lankan crop growers. Today, Sri Lanka is a leading exporter of Ceylon Cinnamon, Ceylon Pepper, Ceylon Cloves, Ceylon Nutmeg and Ceylon Cardamom, all branded under the geographical indication of Ceylon Spices due to their unique aroma and flavour shaped by the territory of the country. It is important for crop growers to be aware of the price changes happened in past as well as it is important to know how prices are going to fluctuate in the coming years. The Cinnamon market makes purchases at different prices over the same period of time when it is observed across geographical locations within the country. Thus, these growers are still suffering due to the unavailability of correct prices to sell their crops. The economic status of those growers has not changed over years and research revealed that it is mainly due to growers not knowing the correct prices, different traders buying crops at different prices, and traders and growers not having an accurate understanding of prices. Therefore, this study focuses on encouraging small export crop growers in Sri Lanka to boost Sri Lanka's foreign exchange reserves by providing them a better understanding of their market prices in terms of buying and selling. This research predicts cinnamon price fluctuations using artificial neural networks with 94% accuracy for Alba grade in 10 cinnamon growing districts in Sri Lanka using past prices of 2016 to 2020. Results show that Artificial Neural Networks predict the price changes in a higher precision than other statistical methods used to predict cinnamon market prices.

Keywords: *Cinnamon Market price, Neural Networks, Ceylon Cinnamon, Price Prediction*