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ALIEN INVASIVE FAUNA OF AGRICULTURAL IMPORTANCE AND THEIR CONTROL

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SUMMARY

Alien pest species have entered the country via agricultural commodities, despite the strict quarantine measures existing in Sri Lanka to prevent the entry of pests. The threat of an alien pest should be anticipated to be devastating and appropriate safeguards devised. The legal basis for plant protection and plant quarantine (Plant Protection Ordinance) dates as far back as 1924, amended in 1981, and currently being revised to include present day needs of the country aiming at minimizing the unwanted alien introductions.

INTRODUCTION

Agriculture plays a major role in the economy of Sri Lanka. Hence, it is important to ensure the development of agriculture for economic stability in the country. Various agricultural pests severely affect crop production. Populations of pests thrive due to the availability of tropical climate and suitable soil types in different agro-climatic zones in the country. Protection of crops from these pests is imperative for food security in Sri Lanka.

Environmentally safe control strategies have been used to combat these pests while maintaining a sustainable cropping environment. However, locally grown plants are constantly at risk of attacks by alien pest species introduced via imported agricultural commodities such as plant material, fresh and processed fruits, vegetable and ornamental plants. There is ample evidence that alien invasive species affecting production of a large number of economically important crops, sometimes devastating crops completely, changing the existing equilibrium among existing local pests and their natural enemies in different agricultural eco-systems in the country. Strict quarantine measures exist in Sri Lanka to prevent the entry of pests. However, some

pest species have entered the country with agricultural commodities brought in by travelers and imports under the open economy. No country can afford to close its ports indiscriminately to the exchange of plant material. Though quarantine interferes at every port of entry and commodities are subjected to thorough examination to restrict the introduction of alien pests, there are limitations with large import consignments.

LEGAL BASIS FOR PLANT PROTECTION IN SRI LANKA

In Sri Lanka, the legal basis for plant protection and plant quarantine (Plant Protection Ordinance) dates as far back as 1924. The same ordinance has been amended in 1981. However, Plant Quarantine Service started receiving due attention only in the recent years. It has been speculated that *Exobasidium vexans* and *Hemileia vastatrix* were hitchhiked to Sri Lanka in airplanes. *Hemileia vastatrix* caused devastating effects to the coffee plantations of Sri Lanka in 1869, *Exobasidium vexans* to the tea plantations in 1946, and *Promecotheca cumingi* to coconut plantations in early 1970's.

Plant Quarantine Service of the Department of Agriculture usually monitors the pests in intercepted materials. However, over the years, several devastating pests have established themselves in Sri Lanka during the last decade. Potato cyst nematode (*Globodera rostochienses*), originated in South American countries, was detected in Sri Lanka in the latter part of 1980's. It destroyed 75% of the potato cultivation in Nuwara-eliya district in the central province. Pea leaf miner (*Liriomyza huidobrensis*) was reported in 1997, which destroyed almost the entire vegetable and potato cultivations in Nuwara-eliya. Currently *Liriomyza huidobrensis*, *L. sativae, Melanogromyza hibisci*, *M. Obtusa*, paddy root knot nematode (*Meloidogyne graminicola*), lesion nematode (*Pratylenchus vubrus*) and fruit fly species (*Braciocera dorsalis* and *B. zonata*) have become serious pests of the agricultural crops of Sri Lanka.

Coconut mite (*Aceria (Eyophyes) guerreronis*) infestation was a serious threat faced recently by the coconut growers in the country. It was first reported from the Guerrero State of Mexico in 1965. Since then it has been reported from many coconut-growing countries in the world. This infestation was first reported in India and Sri Lanka in 1997. In Sri Lanka, it has spread in the entire Kalpitiya Peninsula and Wanatha willu, Puttalam up to Rajakalaluwa. Control measures implemented against the pest has reduced the mite population effectively.

In the near future Sri Lanka will enact a new plant Protection Act repealing the existing ordinance, Act No. 10 of 1924. This includes several sections addressing the present day needs of the country pertaining to the international movement of plant material. However, for proper implementation of the act, it is important that politicians, policy makers, and administrators of this country realize the role of Plant Quarantine in the overall agriculture development.