

A Study on Factors Affecting Adoption of Maximum Residue Level in Tea Estate Sector with Special Reference to Kandy District

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Introduction

With the globalization of food and beverage industry, international organizations and food importing countries from every part of the world are concerned more about the food safety and have imposed very stringent regulations aiming a higher level of food safety.

'In recent past, Japan & EU have stipulated the Maximum Residue Levels (MRL) for various pesticides including some of which are used in tea fields. Conversely, it may not only the Japan and EU but in future all other tea importing countries would impose such stringent safety laws and regulations for our tea (Premathilaka, 2007).

Sri Lankan tea could expect a bright future only if it can comply with international standards at both field and factory levels. Our rigorous efforts have to be made to avoid all possible ways of build-up of residues. In this context, it is very important to follow all TRI recommendations on pesticides to ensure that Sri Lanka still produces the "cleanest tea in the world" (Premathilaka, 2007).

Therefore, adoption of MRL by the tea estate sector is imperative to open more of the world markets for Sri Lankan tea and gives a much needed competitive edge. This study was conducted to assess the factors affecting for adoption to MRL of tea by the tea estate sector.

Methodology

Adoption level of recommended practices on MRL (ALORP on MRL) was derived to have values ranging from 0 to 100% depending on number of practices adopted by each farmer.

Empirical model was developed to determine the factors influencing tea estate sector to act differently on ALORP on MRL.

$$\text{ALORP on MRL} = \frac{\text{Number of recommended practices followed by the tea estate}}{\text{Total (ten) number of recommended practices on MRL}} \times 100$$

$$\text{ALORP on MRL} = \beta_0 + \beta_1 \text{LAE} + \beta_2 \text{AWN} + \beta_3 \text{LBAV} + \beta_4 \text{WEXP} + \beta_5 \text{CNAG} + \beta_6 \text{OWNTYPE 1} + \beta_7 \text{OWNTYPE 2} + \epsilon_i$$

Where,

β_0 to β_7 = coefficient, ϵ_i = error term

LAE Land extent (acres)
AWN Awareness of the Manager on MRL (dummy)

LBAV	Labour availability (dummy)
WEXP	Working experience of the manager (years)
CNAG	Contacts with the agro chemical companies (dummy)
OWNTYPE 1	Type of ownership 1 - State ownership (dummy)
OWNTYPE 2	Type of ownership 2 - Company ownership (dummy)

The data were collected from random sample of 36 tea estates in Kandy district using structured questionnaires. The Multiple Linear Regression was used in data analysis.

Results and discussion

Table 1: Results of the multiple linear regression analysis

Variable	Coefficient	Standard Error Coef.	Sig. Value
Constant	44.247	4.122	0.000
LAE	-0.02187	0.01553	0.173
WEXP	0.7554	0.3252	0.030**
AWN	12.063	2.453	0.000***
CNAG	-0.010	2.434	0.997
OWNTYPE 1	2.551	2.797	0.372
OWNTYPE 2	16.153	4.404	0.001**
LBAV	0.460	2.259	0.841

*** Significant at 1% level ** significant at 5% level, R-Sq = 90.5 %

The results revealed that the adoption of recommended practices on MRL was significantly determined by the awareness on MRL, ownership type – 2 (company ownership) and working experience of the estate manager.

This model explains up to 90.5% of variation of adoption level of recommended practices on MRL in tea estates by the all independent variables.

Working experience of the estate manager

Working experience of the estate manager was positively related with the adoption of recommended practices. It indicates that when the working experience increases; there is a tendency to adopt recommended practices. With the working experience, manager becomes aware of the causes of high pest and diseases occurrence and ways of managing them. They attempted to implement IPM strategies while minimizing chemical methods.

Awareness on MRL

When the estate managers were aware on Maximum Residue Level (MRL) as the international food safety regulation, they concentrated more on recommended practices and avoid possible ways of build up of residues to achieve higher competitiveness in the international market by producing residue free quality tea.

Ownership type 2 – Company ownership

Company ownership had a positive impact on adoption of recommended practices on MRL. Plantation companies expose to marketing information and get the details on new market trends, food safety regulations and other international standards of tea. Therefore, they try to adopt international food safety regulations from the field level to achieve higher competitiveness in the international market.

According to the analysis, there was no significant relationship between adoption level of recommended practices on MRL and the variables of land extent, state ownership, contacts with the agro chemical companies and labour availability at any significant level.

Conclusions

It was revealed that the adoption of recommended practices on MRL by the tea estates is significantly determined by the awareness on MRL, company ownership and working experience of the estate manager.

Appropriate policies should be formulated to make aware the tea estate sector on international food safety regulations of tea and to implement Good Agricultural Practices in tea fields as a mandatory requirement. This will help to ensure that Sri Lankans still produce the "Cleanest tea in the world" thereby opening more world markets for Sri Lankan tea.

References

Premathilaka, K. 2007. Detection of Herbicide Residues in Exported Tea: Its repercussion, possible causes and way out. *Journal of the National Institute of Plantation Management* 22 (01): 7 – 13

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