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MANAGEMENT OF THE RUSH CROP

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1. Introduction

There is a fluctuation in the amount of tea crop harvested over the year. This fluctuation varies from region to region according to the rainfall pattern and other climatic factors. The crop is low during the dry months when the moisture is limited, and it is high during the monsoon, particularly during the mid-monsoon period. The increased crop after a spell of dry weather is known as the rush crop.

The management of the rush crop is of vital importance in enhancing and sustaining the productivity of tea plantations.

2. Factors contributing to the rush crop

The rush crop is due to both climatic and plant factors prevailing in the region.

(a) Climatic factors

Shoot growth is accelerated when favourable weather conditions return, particularly at rainfall after a dry spell.

(b) Plant factors

Tea is a crop which exhibits periodicity in shoot growth: an active phase followed by a dormant phase. When conditions are favourable for growth, active shoot growth is relatively higher, and vice versa. Therefore, although shoots are harvested continuously during dry weather, a large number of axillary buds remains inactive or dormant, or grows slowly owing to conditions of moisture stress. All these buds become activated at once with the first few showers during intermonsoonal or monsoonal rains. This synchronized surge in the growth of shoots leads to an increase in shoot density.

Thus, the crop yield closely follows the rainfall pattern. Most of the tea plantations in Sri Lanka receive rain from both the southwest and the northeast monsoons. Since

the rainfall pattern is bimodal, there are also two peaks in the cropping pattern during one calendar year, and both these peaks can be considered as rush crop periods. The duration and degree of the rush crop vary from region to region.

3. The labour demand during the monsoon periods

In addition to there being a high labour demand for harvesting the rush crop, the monsoonal period is agronomically more conducive for various field operations involving labour.

As a result of an abundance of harvestable shoots, and the necessity to adopt closer plucking rounds, given the enhanced rate of shoot growth during the rush crop period, estates require comparatively more labour for harvesting during this period.

Also, other field operations such as planting, pruning, fertilizer application, lopping of shade trees, infilling, weed management, and sometimes nursery work, are invariably planned for this period. As a result, many estates encounter problems regarding labour deployment for all these operations.

The problems are aggravated when there is a poor worker out-turn during this period. Most of the social activities, resulting from the Sinhala and Hindu New Year, and the Wesak and Poson festivals, occur during April-June, which also happens to be the period when the requirement for labour is at its maximum in most of the plantations. Since the crop harvested during the rush crop period constitutes a comparatively high proportion of an estate's annual production, a proper organisation of available resources is essential to achieve satisfactory productivity and profitability.

4. Planning and management strategies

In order to maintain the quality of the end product, shoots should be harvested in their pristine condition before they become over-mature or coarse. Therefore, plucking policies should be formulated in relation to harvestable extent, plucking rounds and plucker intake. The following strategies are advocated to maximize available resources, and mitigate the problem of labour shortage, during the rush crop period.

4.1. The harvestable extent

The harvestable or pluckable extent could be advantageously reduced by resorting to (a) resting of the fields to be pruned, (b) a suitable timing of pruning, and (c) proper tipping practices rather than 'plucking-in'. (The practice of commencing plucking soon after pruning is known as 'plucking-in'.)

Such pruning policies help in the management of the rush crop to a great extent.

4.1.1 Resting of pruning fields

Owing to labour scarcity during the rush crop period, it may not be possible to harvest the entire extent without resorting to extended rounds. Under these circumstances, the resting of fields, which are due for pruning, mitigate the problem of labour shortage. Resting will not only help to reduce the extent to be harvested, but also improve the health and vigour of the bushes to be pruned, leading to better recovery after pruning.

In addition, in fields due for pruning, the plucker intake is usually low, and the quality of shoots is poor.

4.1.2 Suitable timing of pruning

In most of the tea plantations, pruning is done after harvesting the rush crop. This not only makes management of the rush crop difficult (owing to an increase in the pluckable extent), but also brings about a deterioration of the health and vegetative vigour of the tea bushes (owing to depletion of root reserves).

4.1.3 Proper tipping practices

The practice of 'plucking-in' results in an increased plucking extent during the rush crop period. Therefore, the adoption of proper tipping practices not only helps in the reduction of pluckable extent during this period, but also enhances frame development and vigour of the tea bush for sustainable productivity.

4.2. Manipulation of plucking rounds

During the rush crop period, there is a faster rate of shoot growth, and therefore less time is taken for the formation of a pluckable shoot when compared to other periods. In order to harvest the shoot before it is over-mature, it is necessary to maintain closer plucking rounds during a rush crop. However, the maintenance of proper plucking rounds is difficult if adequate pluckers are not available.

An extension of the plucking round, without affecting the quality of the harvested shoots, would be one of the solutions to maintain plucking rounds during the rush crop period. This could be achieved to a certain extent by resorting to 'hard plucking' and 'black plucking'.

During hard plucking, the shoot is plucked to the fish leaf and one generation of *arimbu* shoots is removed. In black plucking, all the *arimbus* are removed. The

degree of removal of *arimbus* determines the length of subsequent plucking rounds. However, *arimbu* removal should not be continued as a routine practice, as it is detrimental to bush health and bush vigour.

The problems encountered during the rush crop period could be avoided to a certain extent by manipulation of the plucking round.

4.3. Measures to increase plucker intake

The labour requirement for harvesting could be reduced by increasing the output of workers. This could be achieved by (a) introducing appropriate mechanical harvesters, and (b) introducing schemes that would incentivise workers to bring in more crop.

4.3.1 Mechanical harvesting

By adopting mechanical measures for harvesting, plucker intake can be increased. The patented shear recently introduced by the TRI, now well known as the TRI Selective Tea Harvester (the TSTH), proved to be successful in enhancing plucker intake.

In the case of severe labour shortages, motorized machines can be used for harvesting. The output of motorized machines can be high: about 8-10 times more than in manual plucking. However, continuous machine plucking leads to a reduction in yield, and affects the health and vigour of the bush. In addition, machine harvesting results in poor quality shoots, with a high percentage of coarse leaves. The use of machines should therefore be limited to extreme situations where pluckable fields are to be abandoned owing to lack of labour.

4.3.2 Incentives

Labour productivity can be enhanced by implementing various incentive schemes. Payment of an attractive extra rate per kg of leaf harvested, over and above the fixed norm (the 'over-kilo' rate), and encouraging cash plucking before commencement of estate work, as well as after working hours, could be adopted to increase output of the workers. In addition, in order to minimize absenteeism, incentives may be given for better attendance during the month.

Such measures are already being practised by some estates.

4.4. Proper deployment of workers

Priority should be given for harvesting during the rush crop period. Accordingly, sundry work, such as maintenance of roads and buildings, fencing, and de-silting of drains, should be postponed to lean periods when the crop is low.

5. Conclusion

Proper management of the rush crop is an important activity to enhance and sustain the productivity of tea plantations. It is necessary to plan an integrated strategy or ways and means of managing the rush crop in advance, and to explicitly implement a work plan which would achieve the desired objectives.

References

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