

Chapter 4

Plucking and Pruning Management

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Plucking and Pruning Management

4.1 Introduction

In this chapter some GIS tools have been integrated to analyze the spatial and attribute data to generate an information system of tea estate [5, 41]. The tools are customized to generate the pruning style and plucking schedule of different section of tea estate for duration in terms of multiple years. The statistical analysis also been made here to determine the yield pattern of different segments of the tea garden which in term directly related to the productivity of the tea estate. Though the digitization of the map of the garden and attachment of data and analysis of the integrated data in a database system a graphical user interface has also been designed which reflects the visual interpretation of the different analyzed attributes through GUI based mapping in a colorful manner.

4.2 The Scheme

In this chapter the system provides spatial and non-spatial information of a Tea Estate like area of sectors, yield and production, pruning style and plucking schedule etc. It will be presented as a colorful manner and all the associated attribute data will be stored in a database.

The proposed system is divided into different phases.

Step-1.

Collect tea garden maps and scanned first. Then digitized the map to convert it to vector format.

Step -2.

Develop software to fetch different query regarding plucking details, pruning style and display the production yield and generate a decision support system. Java is used as frontend to design different forms, reports and coding and Oracle is used as backend to store the data.

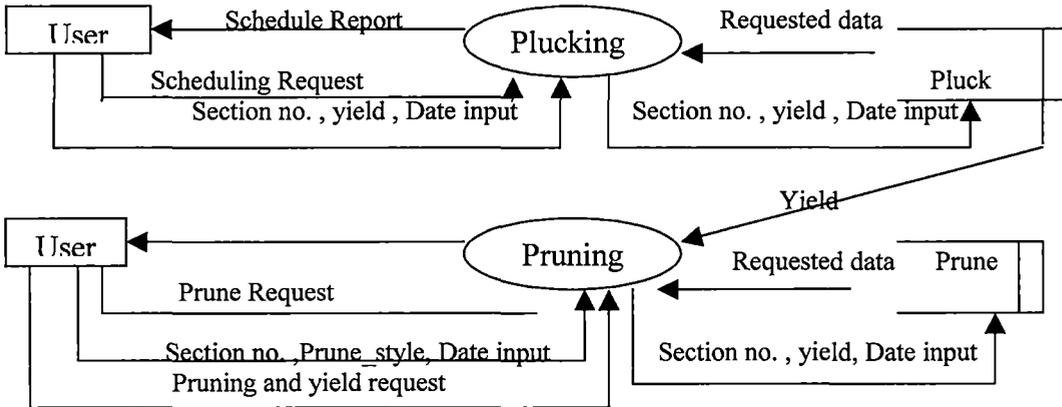


Figure 4.1: Context Diagram of plucking and pruning schedule

Some input/ output forms and reports are given in section 4.3.

4.3 Results

Figure 4.2 shows the input form for the insertion of the records related to plucking. The form gives the image of the section along with its section code where the plucking is going on. It also gives the details of the pluckers who are plucking on that particular date.

Plucking Insert

Section Code 1

Date: 03 Jan 1999

Worker Id: w013
Name: Pintu patra

Green Leaves Pluck 15 Kg

BACK SAVE

WORKER ID	GREEN LEAF PLUCKED
w001	15.00
w002	15.00
w003	14.00
w004	16.00
w005	13.00
w006	17.00
w007	15.00
w008	14.00
w009	14.00
w010	16.00
w011	16.00
w012	15.00
w013	15.00
TOTAL=195	

Figure 4.2: Insertion form for plucking

Figure 4.3 is the insertion form of pruning in which a user has to insert the date of pruning of a particular section and the type of pruning.

Pruning Insert

Section Code 1

Date: 03 Dec 2004

No.Of.Workers: 10

Pruning Type: up1

BACK SAVE

Figure 4.3: Insertion form of pruning

Figure 4.4 shows the plucking report of a particular section within time duration and figure 4.6 gives the six years pruning report of the garden.

SECTION CODE	DATE	GREEN LEAF PLUCKED(kg)
pug1	03-MAY-1999	317
pug1	10-MAY-1999	324
pug1	17-MAY-1999	327
pug1	25-MAY-1999	321

Figure 4.4: Plucking report of a section

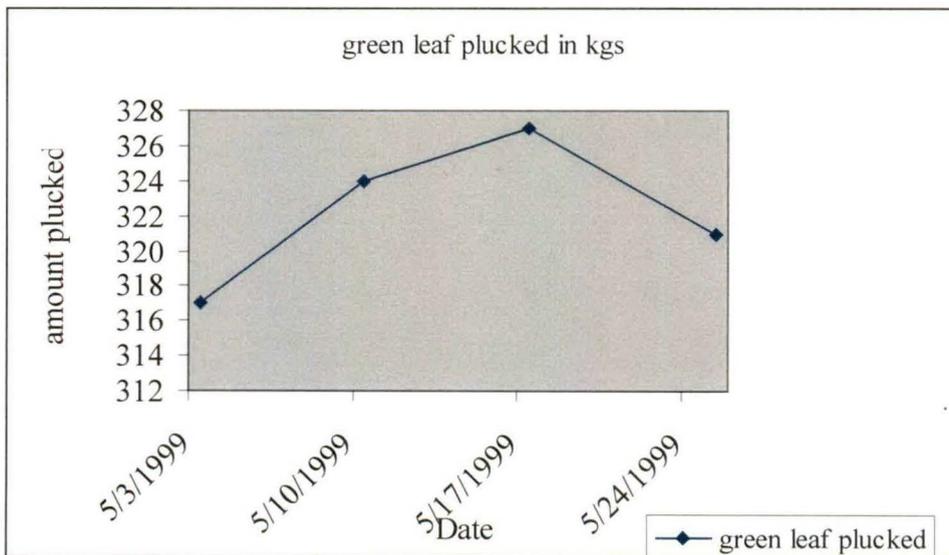


Figure 4.5: Graphical plucking report of a section

In the above two figures, reports on plucking of green leaves of a section of the garden are given. Here plucking round is seven days. So after every seven days a section

is selected for plucking. We can see the plucking amount of green leaf from the figure 4.4 and a depletion graph from figure 4.5. From the above graph one can check the plucking amount and take decision if there is any disparity in the production.

.....LAST FIVE YEAR PRUNING REPORTI.....

SEC CODE	AREA	DATE	TYPE	YIELD
pug1	4.9	21-NOV-2007	up1	3120.575
pug2	6.7	12-NOV-2007	up2	1774.557
				4895.133
pug1	4.9	16-NOV-2006	lp	1400.000
pug2	6.7	26-NOV-2006	up1	5996.681
				7396.681
pug1	4.9	06-NOV-2005	up2	2903.319
pug2	6.7	19-NOV-2005	lp	5521.903
				8425.222
pug1	4.9	06-NOV-2004	up1	2721.239
pug2	6.7	11-NOV-2004	ds	2077.212
				4798.451
pug1	4.9	06-NOV-2003	ds	1475.664
pug2	6.7	06-NOV-2003	up2	1494.247
				2969.911
pug1	4.9	01-NOV-2002	lp	811.947
pug2	6.7	04-NOV-2002	up1	5614.602
				6426.549
				TOTAL YIELD=34911.945

BACK PRINT

Figure 4.6: Last six years pruning report

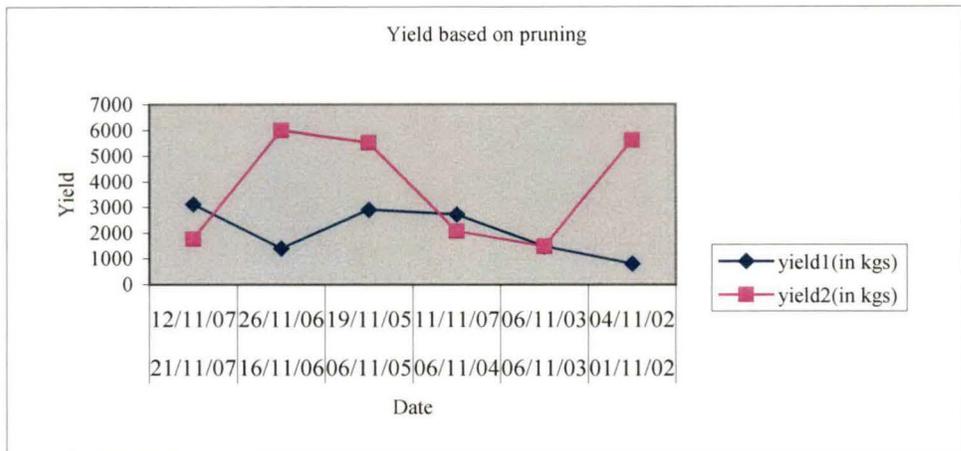


Figure 4.7: Last six years pruning report of two sections

The figure 4.7 shows graphical representation of tea production of two selected sections based on different pruning method. Production is low when light pruning is done and in case of untouched pruning, production is high. So from the figure 4.6 and figure 4.7 if one can find that if there is very less production rate other than light pruning

scheduling year then it is obvious that it is the time to check all other aspects and take decision to improve production.

A GIS based plucking and pruning management of tea garden is presented here in an efficient manner. It will help the management to take decisions on plucking and pruning from the generated reports.