

2. MATERIALS AND METHODS

2.1 Field Selection and Preparation

The rubber plantation in the Rubber Research Center, Hatyai was selected for the study. Three sampling sites with floor area of 7x14 meters were cleared before the start of the fall season. The rubber trees were planted in the rows of 7 meters apart and the distance between the trees (in the same row) is 3.5 meters. Thus, the sampling area covered 8 trees along the perimeter and one tree in the middle. The rubber trees were about 20 year old

of RRIM 600 variety, the most popular variety planted in Thailand.

2.2 Residue Collection

Fallen residues in the sampling areas were collected every week. The types and the amount of the residues were recorded. Consequently, the amount of residues per rai and nationwide could be estimated. At the end of the residue collection programme, top soil samples both within and outside the sampling areas were collected. A comparative study on the effects of residue collection on the moisture content of the soil was carried out.

2.3 Leaf Densification

The leaves were densified by a hydraulic press under pressure 5,00-19,000 psi. Cylindrical dies used had diameters of 3.5 and 2.25 inches. The strength of the densified leaves was evaluated by drop tests at 1 meter height.

2.4 Energy Analysis

Heating values of the gatherings were determined by an adiabatic bomb calorimeter. The energy involved in the whole process was analysed as well as economic feasibility study.