

RUBBER SEED PRODUCTION IN SRI LANKA AND ITS POSSIBLE EFFECTS ON THE RUBBER PLANTING MATERIAL

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The total area under rubber in Sri Lanka is around 166000 ha. The annual replanting hectorage is therefore around 5478 ha i.e. 3.3% of the total hectorage. For replanting of 5478 hectares, nearly three million budded plants are required annually. As far as the seed requirement is concerned, it has been found that only 25% of the seeds sown in the germination bed ultimately produce vigorous root stocks. Accordingly, the annual seed requirement is around 12 million. Generally, 1 kg holds about 250 seeds and therefore, about 48 metric tons of seeds are required annually.

The production of seeds of individual trees is highly variable depending on various factors including, the age, clone, climatic condition of the area, microclimate, weather condition during flowering and pod formation, diseases etc. (Seneviratne, 1996). Wycherley (1971 a) has reported that the maximum number of seeds per hectare per year was 160,000 from a seed garden of prolific clones with continuous flower protection throughout the year. The bottom end of the scale has been reported as zero in monoclonal areas of poor seed-bearers without flower protection. Having considered the many possible variables, an average figure of 10,000 seeds per hectare has been suggested by him for moderate seed bearing clones.

Nevertheless, the survey carried out in small holdings located in relatively dry areas has revealed that some old clearings of about 25 years had produced more than the potential production of the seed gardens of prolific clones as reported by Wycherley. Further, similar age clearings of the same clones located in wet areas have produced only very small quantity of seeds.

Anyhow, if 10,000 seeds per hectare is considered as the average, about 1200 hectares are required to produce 12 million seeds, i.e. the country's annual requirement. This is about 1% of the total mature hectorage in Sri Lanka.

The distribution of rubber lands in different districts in Sri Lanka is given in Figure 1. Accordingly, the total hectorage under rubber in Kegalle district alone is 46720 ha, i.e. about 25% of the total hectorage Figure 2.

Source :
 Dept. of Census & Statistics
 Census of Agriculture 1982

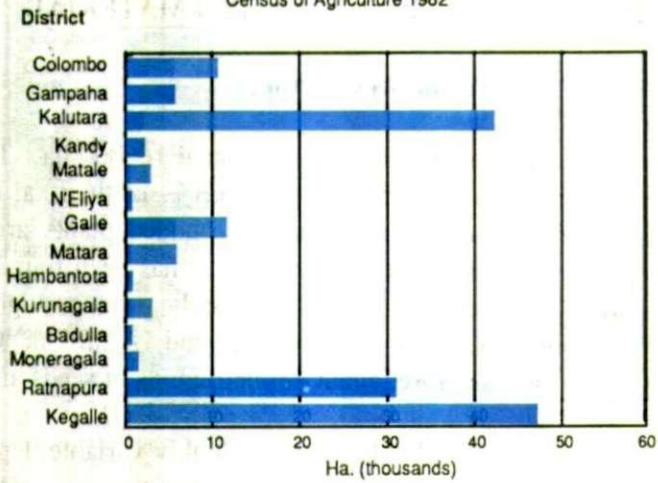


Fig. 1 The rubber lands in Sri Lanka according to administrative districts.

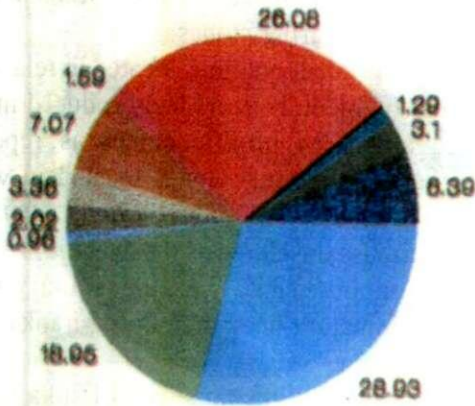


Fig. 2 The percentage distribution of rubber lands in Sri Lanka.

If the accepted ratio of mature to immature is followed, 80% of this, i.e. 37376 ha will be under mature rubber. This is about 31 times the required hectareage to produce the country's seed requirement. The weather conditions in Badulla, Monaragala, Matale & Matara areas are also dry and very favourable for seed production. Nevertheless, the seed fall in these areas occur 2-3 months late than that of Kegalle and other rubber growing areas.

Though the climatic condition in Kegalle and other dry areas are favourable for seed production, it should be mentioned that the nurseries, should be established in wet areas such as Kalutara in order to produce quality planting materials at a low cost, as watering etc. during dry periods can be expensive if the nurseries are to be established in dry areas.

Since the seed production in wet region during the past 10-12 years was not satisfactory at all, it may be advisable for the nurserymen in wet regions to make arrangements to get the seeds supplied from regions such as Kegalle and Kurunegala.

The data gathered have indicated that the climatic conditions where the field is located will be the key factor in determining the rate of seed production though the age of the clearing and the clone are also important factors.

As the viability of rubber seeds goes down very rapidly, the collection and transportation should be done with minimum possible delay. Use of fresh and good quality seeds is a basic requirement in producing good quality budded stumps (Seneviratne et.al., 1996). However, it has been noticed that though arrangements had been made to get the seeds supplied from dry areas, still the seedlings used in rootstock nurseries are inferior due to the use of every seed that germinate in the germination bed. The main reason for the poor germination is the delay between seed fall and seed sowing due to delay in collection & also long storage. Wycherley (1971 b) has reported that seeds stored at normal ambient conditions for three weeks were shrivelled inside and did not germinate. Accordingly, in the field most seeds germinate or die within three to six weeks.

However, Wycherley 1971 b has reported that when the seeds were mixed with an equal quantity of sawdust containing 10% moisture and spread in shallow layers inside perforated polythene bags they could be stored. But the duration has not been mentioned. The success of storage at low temperature and under controlled ventilation and moisture at ambient temperature suggests that viability is prolonged by restriction of the rate of respiration. Therefore, storing rubber seeds even at a high cost has less value as the storing period is not very long for the storage to be practically or economically important.

Therefore, it is recommended that the collection and planting of seeds in germination beds should be done with the minimum possible delay. Moreover, whenever there is a shortage of quality seeds in the wet regions such as Kalutara, arrangements should be made to collect seeds from comparatively drier areas such as

Kegalle and Kurunaegala, that in such instances also, undue delay in transportation should be avoided.

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