

WOULD THE LOW PRODUCTION OF SEEDS CONTINUE TO BE A PROBLEM FOR THE FARMERS IN WET REGIONS?

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As we are all aware, the rubber seed production in wet rubber growing areas of Sri Lanka has gone down to threatening levels during the recent past. The planters, in particular the nurserymen in these areas, are severely affected with this change in seed production. The shortage of seeds has led the nurserymen to ignore most of the recommended practices in establishing seedling nurseries. Generally, only about 25% of the seeds in seed beds are recommended to be used for bud grafting. Nevertheless, the short supply of seeds has compelled the nurserymen to bud graft each seedling that grows into buddable girth at any age, sometimes at two years of age. This should definitely affect the quality of the planting materials, i.e., budded stumps, which has a long term impact on the condition of the plantations specially, the length of the immature period.

Early days, some clones such as Tjir 1, were recommended for collecting seeds for establishment of nurseries. However, as they introduced more new clones for plantations, the clones recommended for collecting seeds disappeared gradually.

Anyhow, later it was revealed that the seeds of all recommended clones are suitable for establishing nurseries if vigorous seedlings were selected by adopting the recommended culling process. This should not mean that the root system, its behaviour and other characteristics of seedlings of all clones are uniform. The message is the vigorous growth is more important than the other characteristics for rootstocks. Anyhow, the recommended selection procedure to select vigorous seedlings was not practical for the nurserymen in the wet rubber growing areas due to shortage of seeds experienced during the past 8-10 years.

The causes for this change seem very complicated. Among the possible reasons, which may have contributed to this, change in weather conditions, change in clones planted and disease incidences are important. However, the possible factors related to the seed production can be outlined as in Fig.1.

A survey conducted on the seed production in different climatic regions has also suggested that this problem of poor seed production prevail only in wet regions. This shows direct or indirect influences of climatic and weather conditions. Among the factors related to the climate, the annual rainfall, the pattern of rainfall distribution, sunshine hours, relative humidity, temperature etc. may be important for the production of seeds. Sunshine is a basic need of the plant to synthesize its carbohydrates. Further, sunshine or dry weather is important for flowering, pod set

and for seed fall by dehiscence-explosion.

Nevertheless, unfortunately, weather changes in the past are very difficult to detect. Attempts are being made to identify any changes in weather patterns. Even if such patterns exist, as we cannot influence on this to change favourably, they will be least important. However, if weather influences the production of seeds indirectly, such as by spreading diseases, then some remedial measures may be adopted such as growing resistant clones or resistant canopies by crown budding, spraying chemicals to control diseases etc.

Change in the clones planted is also an important aspect in the production of seeds as the seed production can well be a clonal characteristic. One of the most popular clones, PB 86 is losing its hectareage gradually, yet a substantial mature area remains under PB 86. In fact, one would have thought that when the yield is remarkably high in a particular clone, the seed production to be low. However, the information gathered from Kegalle area has shown that all three clones PB 86, RRIC 100 and RRIC 121 are producing a higher number of seeds, RRIC 121 being the highest in both yield and seed production.

This however is a fortunate situation that high yielders producing higher number of seeds. Had this been vice-versa, a very difficult situation would have to be faced where separate clones or seed gardens would be the only answers to collect seeds.

However, RRIC 121 has not yielded much in other areas. As stated earlier also, seed production may be controlled or influenced by many factors. Anyhow, weather being the most important, until the actual causes and their influence on the seed production is understood fully, predicting the production of seeds in wet areas will not be possible.

Moreover, leaf diseases, such as oidium and Phytophthora spread rapidly in wet and humid weather. Oidium attaches flowers that can severely influence on the number of seeds. This is followed by phytophthora attacking young pods resulting the same. No information is available on disease epidemics during this period but both Oidium and Phytophthora were present.

Age of trees may also be an important factor. Normally, after seven or eight years, trees should flower.

Another important aspect regarding the seed production is the quality of the seeds. Most seeds collected in wet areas was inferior quality as shown in Fig.2(a). Seed coats were pale colour and they contained no endosperm. Sometimes they were found in pods, but, they were collected during the seed fall. The percentage of poor quality seeds was low in the clone RRIC 100 which is resistant to leaf diseases.

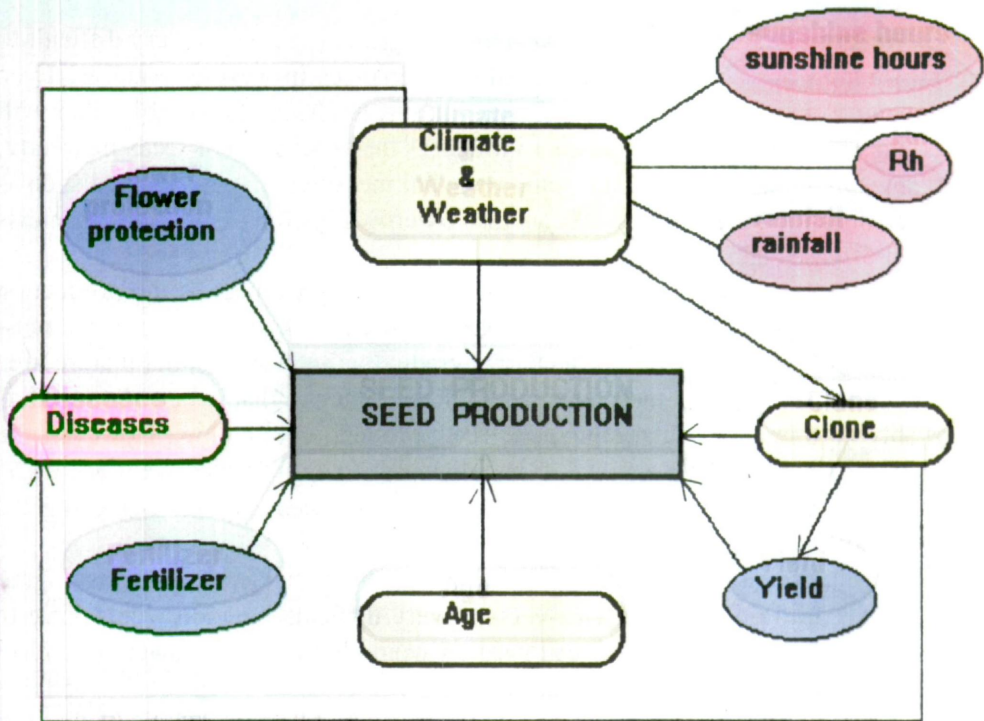


Fig.1. The possible factors influencing the production of seeds.



Fig.2. The quality of the seeds.

Fig.2. The quality of the seeds, (a). Inferior quality seeds and (b). Good quality seeds.

If the low production of seeds in wet areas is due to diseases, there again obtaining seeds from Kegalle & Matale might be cheaper than using flower or pod protecting chemicals. However, as stated earlier also, disease resistant canopies would be an answer for this. Yet, the effect of the crown on the growth and the yield is not known and should be considered.

However, the situation as it is, is not that favourable for the nurserymen in wet regions. Having arrangements to get the seeds supplied from dry areas such as Kegalle and Kurunegala may be advisable. Currently, the Kegalle region alone is producing the whole countries annual seed requirement, if arrangements are made for collection and transportation without delay. Though long distance transport may be costly, an alternative is very unlikely to be established soon.