Malling Merton 111 Apple Rootstock Exhibits Tolerance to Heat and Drought

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On April 9, 1964, ten each of EM VII and MM 111 apple rootstocks were planted on Linker loamy fine sand in a nursery row at the fruit station at Clarksville, Arkansas. These rootstocks had been obtained from the Traas Nursery at Langley, B. C., Canada. They had been propagated in stoolbeds and were of ⅜ inch caliper.

Table 1. Weather conditions at Clarksville, Arkansas, during the period of May through August, 1964.

	Rainfall in inches	Days of rain	Avg. high temp.	Maximum temp.	Days over 90° F	Days over 100° F
May		4	83.1°F	101°F	11	1
June		2	91.3	103	23	11
July		2	98.4	109	29	22
August		11	91.6	110	20	8

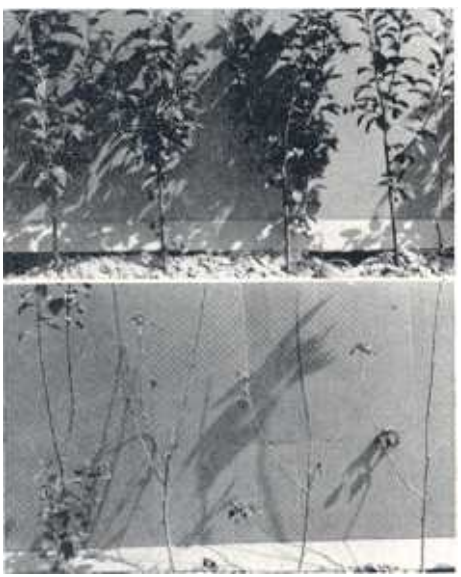

Fig. 1. Trees of Malling Merton 111 (above) and EM VII (below) apple rootstocks, as they appeared in September, 1964, after a very hot and dry June and July.

The season of 1964 provided an excellent opportunity to observe the adaptability of these two rootstocks to extremes of heat and drought. The data in Table 1 gives a good indication of the environment in which the trees grew during the period from May through August. No supplemental irrigation was applied.

Observations made through the growing season indicated that the Malling Merton 111 trees tolerated these extremes of heat and drought extremely well. The EM VII trees, on the other hand, showed symptoms of moisture stress, and limited growth by July. Defoliation of older leaves occured on the EM VII trees, and they did not appear to recover following rain late in August.

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