STUDIES IN FORCING RHUBARB

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Paris
(8.7.1959)

OBJECT

The purpose of this project is to study the effect of different media and temperatures in forcing rhubarb.

INTRODUCTION

Rhubarb-forcing on a commercial scale is known to be a profitable enterprise in many parts of the northern countries. This practice varies with different growers but in general the principles are similar. With any method of growing and forcing, the roots are dug or plowed out late in the fall and thoroughly frozen, after which they are ready for forcing.

The forcing itself consists of the production of marketable petioles in the absence of light with a minimum expansion of the leaf blade. There are various methods used, but this project is concerned only with the forcing at two temperatures and in three media.

REVIEW OF LITERATURE

Very few investigations have been carried out to study the use of forcing rhubarb for commercial purposes. SAYER (1927) reports that regardless of the freezing temperature, the roots which received the longest rest period, produced a two- to three-fold greater yield and made a more rapid growth than roots which had not been given the rest period. A temperature of about 60° F (15.5° C) is considered right, at higher temperatures the crop is earlier, but the color and quality are not as good as when the crop is forced at the lower temperature. At temperatures about 50° F (10° C) growth is too slow. The soil should be kept moist but not wet. Fertile sandy loams and silt loams are preferred for good yields. When grown in darkness and semi-darkness, the stems develop a good color and good quality, and the leaf blade expands very little.

BJORNSET (1946b) found that rhubarb which is dormant will
respond and produce satisfactory yields if the roots are treated with ethylene, 2 parts to 1000 parts of air, for 12—14 hours, due to the effect of freezing. Bjornseth (1946a) found that rhubarb that is in a dormant state when forced with room heat of 60°C supplemented with bottom heat of 13—18°C will produce a greater percentage of the total yield early. The increase in early yield from the use of bottom heat amounts to 130% for 13°C, 105% for 18°C, 49% for 27°C, as compared with no bottom heat.

Hepler (1928) studied the effects of temperature on forcing rhubarb and found that temperature affects both yield and color of forced rhubarb. The lower the forcing temperature, the slower the growth and the more red or pink in the stalks. He found that the rate of growth of forced rhubarb is directly proportional to the temperature, the first few pickings are not greatly affected by other growth factors; and that the average weight of the leaf stalks is considerably higher in the lower temperatures.

Hepler came to the following conclusion regarding temperature and humidity.

A humid atmosphere and a high temperature produce a heavy crop of rhubarb, while a dry atmosphere and a high temperature produce a low yield. Another very important factor in marketing is the color of the forced rhubarb stalks. This color depends on two factors, heredity and temperature.

Material and Methods

Two parallel tests at warm and cool temperatures were carried out, with five different varieties in three different media. The varieties used were:

- MacDonald
- Canada Red
- Ruby
- Early Sunrise

and the media:

- Vermiculite
- Clay
- Compost soils

Experiment

The experiment described gives a good picture, illustrating that in general the results obtained do not show a great variation in the different trials made.