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Adultness in cuttings of Brussels sprout plants[1]

H. G. Kronenberg

Department of Horticulture, Agricultural University, Wageningen, the Netherlands

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Summary

Brussels sprout plants from cuttings of adult plants remained in the adult phase of development.

Introduction

Seedlings of Brussels sprout plants (*Brassica oleracea gemmifera* (DC) Schulz) pass through a juvenile phase during which the young plants cannot be induced to flower. A period of 6–9 weeks of low temperature (2–10° C) which causes older plants to form flower initials is ineffective in these juvenile plants (Stokes and Verkerk, 1951).

Kronenberg (1967) described a method of vegetative propagation of sprout plants by which plants were taken from the field at the end of September and kept in a greenhouse at 15° C during winter time. From February on it was possible to take bud cuttings, to root them and to produce young plants.

The question arose whether the plants from these cuttings are in the juvenile or in the adult phase of development. The general rule is that bud cuttings from adult phase do not return to the juvenile phase after rooting. According to Wellensiek and Doorenbos (1956) both possibilities could occur.

Materials and methods

In the summer of 1969 bud cuttings were taken along the stems of adult Brussels sprout plants (cv. 'Sandra'). The cuttings were inserted in moss-peat and rooted at 21° C. After four weeks the rooted cuttings were potted. Twenty were brought to a coldstore and kept at an average temperature of 5° C (fluctuating between 4–8° C) during 10 weeks. During this period each row of plants was illuminated by fluorescent light (Philips TL 40W/55) during 16 hours/day at a height of 25 cm above the plants. After this cold treatment the plants were brought into a greenhouse with a temperature of 18° C. Twenty untreated control plants were brought to the same greenhouse immediately after potting.

Results and discussion

All treated plants started flowering within three weeks time after the low temperature treatment (Fig. 1). All untreated plants remained vegetative. This proves that Brussels sprout plants propagated by bud cuttings from adult plants are in the adult phase at

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an age of four weeks, where generatively propagated plants are still completely juvenile.

The observations that these cutting plants have a thicker stem than seedlings and show an earlier development of the axillary buds also points to their being in the adult phase (Stokes and Verkerk, 1951). Apparently bud cuttings of Brussels sprouts confirm to a general rule and show no reversion to juvenility.

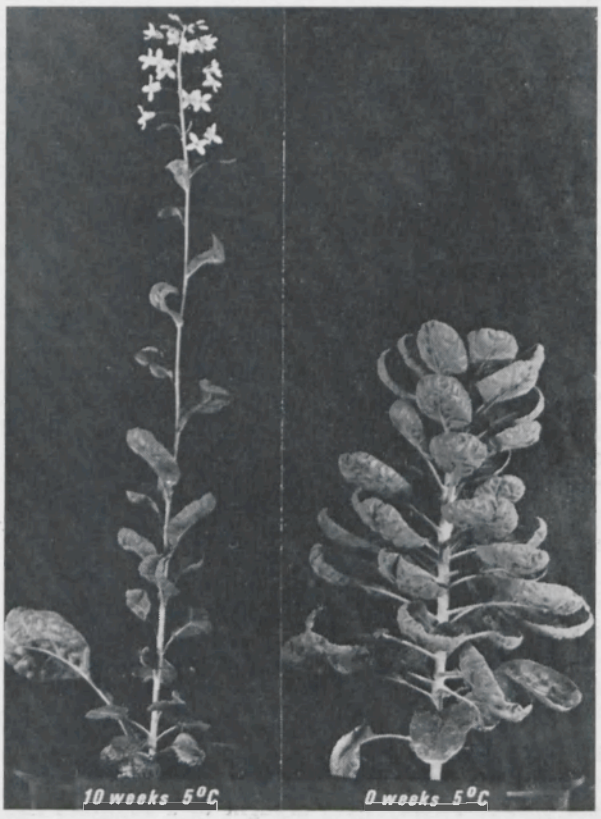

Fig. 1 Seventeen-week-old Brussels sprout plants cv. 'Sandra' obtained from bud cuttings. With cold treatment (left) and untreated (right).

References

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