RESEARCH ON SOME CHARACTERS IN BLACK CURRANT PROGENIES

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ABSTRACT

Populations derived from selfs and crosses of a small number of black currant varieties with the variety Consort were analysed for various characters, viz. vigour, number of flowers, flowering time, ripening time, fruit-set, strig-length and berry size. Flowering began in the third growing year. In the next year the bushes could be assessed to best advantage. The results of the evaluations are:

1. The vigour of the selfed progenies showed, with the exception of Consort, a clear inbreeding depression as compared with the hybrid populations.
2. In the first year of flowering the number of non-flowering bushes in the progenies from Consort x Roodknop and from Wellington XXX x self was much larger than in the others.
3. The progenies from Consort x Roodknop and from Consort x self showed a large number of bushes with few flowers.
4. Later flowering seedlings were obtained only in the crosses with the later flowering varieties Seabrook's Black and Roodknop, and in the selfed progeny of Seabrook's Black (the one of Roodknop was lacking).
5. Later ripening seedlings were obtained only in the selfs from Baldwin and Daniels' September, both late -ripening varieties.
6. Fruit set was highest in the selfs of Consort and Baldwin.
7. The crosses with Wellington XXX and with Blacksmith yielded the most plants with long trusses. It was remarkable that the self of Baldwin was best for strig length.
8. The number of seedlings with large berries was small, as a whole; most seedlings with large berries were produced by the cross Blacksmith × Consort and by Wellington XXX × self.
9. Seabrook’s Black × self produced the aberrant leaf types already described by Tydeman.
10. Daniels’ September (Baldwin-type) transferred leaf-variegation to a number of seedlings. This variegated leaf pattern resembles greatly the variegation which Ellenberger demonstrated to be caused by a virus.
11. Several young seedlings were attacked by American powdery mildew, mostly in the population derived from Daniels’ September × Consort.
12. The supposition of Hughes that Baldwin and Daniels’ September are not identical was supported by the observations in the selfed progenies of these varieties which agreed in many respects, but differed clearly in some.

1. INTRODUCTION

For many years interest and use of black currants has been mainly restricted to Great Britain. Elsewhere the strong and typical flavour of the berries was little appreciated. Yet in the early part of this century some countries, e.g. the Netherlands, grew black currants and exported large quantities to Great Britain, mainly as pulp for jam making.

Today almost the whole production of black currants is processed, mainly as juice, liquor, wine and jam. In recent years the demand for black currant juice processed to fruit drinks has increased enormously, not only in Great Britain, but also and particularly in Germany. The high vitamine C-content (100–200 mg per 100 g) provides this tonic drink with extra value. Stimulated by this increasing demand black currants have become widely grown in the last 10 years, both in Western Europe, and in countries where formerly practically no black currants were grown, such as Poland, Italy and Yugoslavia.

In 1963 some 1,300 ha black currants were grown in the Netherlands, producing 4,774 tons of berries for a value of 4.9 million guilders, which amounts to about 2.5% of the total turnover of all fruit crops. The production is very variable, however, owing to the unreliable yielding capacity of black currants and the changes in acreage. At the moment black currant growing is rather unprofitable in our country. Costs are becoming higher than the output. The main causes are the average low productivity, low prices and the fact, that picking by hand is very labour-consuming and therefore expensive.

Mechanical harvesting-methods may help to change this situation (4). These may change cultural methods and the choice of varieties. Long trusses, very much desired for hand-picking, will be no longer necessary then; for mechanical harvesting short strigs are good. Other characters will become of prime importance, such as the growing habit of the bushes, the toughness of the berry-skin and the tenacity of the berries on the strigs and of the strigs on the branches (8).