Abstract: Yield and quality of carrot seeds, cv. Brasilia, as a result of plant population, gibberellic acid and stage of maturity

Topic: production

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‘Brasilia’ is a cultivar of carrot with characteristics suiting cultivation under hot conditions but with problems in seed production, arising from the conflicting requirements of root and seed production. One solution is to select cultivars requiring vernalisation and then to use GA3 to induce flowering where the climate prevents this. There is, however, little information on plant population, seed maturity and harvesting time on which to base such a procedure. Accordingly this research was carried out to study the physiological quality and production of the seeds in plant populations from 25,000 to 800,000 plants/ha, in the seed-to-seed method of cv. Brasilia in Anápolis, GO, Brazil. In each population, two harvest methods (from first and second orders of umbels, or “selected harvest”, and remaining orders, or “total harvest”) and two stages of maturity (brownish, or “mature” seeds, and yellowish, or “immature” ones) were also evaluated. Two trials were carried out, with and without gibberellic acid. Seed was evaluated for physical characters, germination, vigour, 1000-seed weight, water content, dry matter and productivity. Seed was produced in both experiments (with or without GA3 spraying). Mature seed showed germination at least 30% greater than immature, and seed from the selected harvest showed germination 16% greater than from the total harvest. In increasing plant population to 200,000 plants/ha, seed quality was not affected, but productivity increased.