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'Cascadia' Snap Pea

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'Cascadia' snap pea *(Pisum sativum* L.) is resistant to pea enation mosaic virus (PEMV). This cultivar was developed primarily for the Pacific Northwest and other areas where PEMV limits pea production. Snap peas comprise a class of edible pod peas that differs from "Oriental" or "snowpeas" in that they have a thick pod wall conditioned by the gene *n* (Wehner and Gritton, 1981; Wellensiek, 1925). They are usually eaten when the pods have become plump and the seeds are well developed. Compared with shelling peas, Oriental and snap peas lack pod wall parchment due to the action of either the *p* or *v* gene (White, 1917).

Known as butterpeas when they were introduced, but failed to persist, many years ago, snap peas regained popularity when Calvin Lamborn (Gallatin Valley Seed Co., Twin Falls, Idaho) introduced 'Sugar Snap' and other cultivars (Thomdyke, 1983). Lamborn also developed the first cultivars of snap peas with truly stringless pods, making the commercial processing of snap peas feasible.

Among available snap peas, 'Cascadia' offers, in addition to PEMV resistance, an unusually thick pod wall and excellent succulence and flavor. It is recommended for home and market trials irrespective of the threat of PEMV. 'Cascadia' is susceptible to bean leafroll virus and should not be planted in areas where this virus is severe, such as the pea seed production area near Twin Falls, Idaho.

Origin

'Cascadia' was an F_7 selection made in 1986 from the F_6 generation of the cross 'Oregon Sugarpod II' × 'Sugar Snap'. It has been carried since 1986 as a bulked pureline while being increased and evaluated. 'Sugar Snap' is the original snap pea introduced by the Gallatin Valley Seed Co., and 'Oregon Sugarpod II' is a PEMV- and powdery mildew-resistant Oriental pea released by the Oregon Agricultural Experiment Station (Baggett, 1982) (Fig. 1). 'Cascadia' derived PEMV resistance, conditioned by the gene *En* (Schroeder and Barton, 1958), from 'Oregon Sugarpod II'. As the condensed pedigree (Fig. 1) shows, the original source **of** PEMV resistance was a resistant selection from PI 140295 (Schroeder and Barton, 1958), which was crossed with 'Wando' in 1953. In the early pedigree, P601 was a freezer pea breeding line from the Gallatin Valley Seed Co., and G59-29 was a powdery mildew-resistant breeding line from the New York Agricultural Experiment Station, Geneva.

Annual exposure of breeding materials to a high incidence of PEMV and red clover mosaic virus (RCMV) permitted retention of strong field resistance to PEMV. A useful level of resistance to red clover vein mosaic virus, obtained from unidentified sources, also was maintained by field selection.

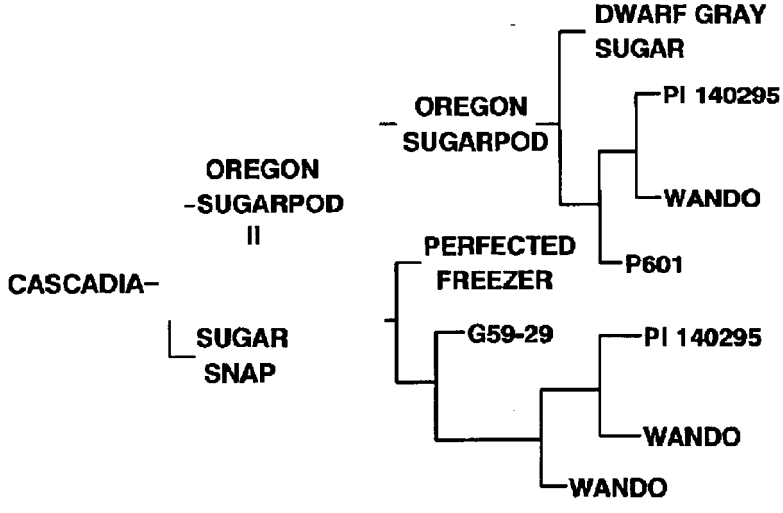

Fig. 1. Pedigree of 'Cascadia' snap pea.

Fig. 2. 'Cascadia' pods at prime eating stage. Note the thick walls of the sliced pod.

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Description

'Cascadia' plants have short internodes and commonly will reach 75 cm in height. They mature midseason, with flowers beginning on node 14 or 15. Pods normally are borne two per node, and under good growing conditions, there may be four or more pairs of pods per plant. The pods are 7 to 8.5 cm long with seven to eight seeds per pod. The pods are plump and have very thick walls (Fig. 2). At full development, and before becoming overmature, the pods are nearly round in cross section and measure from ≈ 17 mm wide · 15 mm thick to 17 mm wide × 17 mm thick. They are tightly filled by the seeds. Pod walls are up to 3 mm thick and free from parchment. We have judged flavor as sweet and good. The flavor improves up to the time pods are overmature and rough in appearance. 'Cascadia' pods are not stringless.

Seeds are wrinkled. At edible maturity, they are dark green and have good flavor. Mature seed count is ≈ 4900/kg.

Disease resistance

'Cascadia' has shown excellent field resistance to PEMV and moderate tolerance to RCMV. It is resistant to common pea wilt *[Fusarium oxysporum* f. *pisi* (Linford) race 1 Snyder and Hansen] as indicated in 5 years of fieldtests at Washington State Univ. 'Cascadia' is moderately susceptible to powdery mildew *(Erysiphe pisi* Syd).

Availability

'Cascadia' was released jointly in 1.992 by the Oregon and Idaho Agricultural Experiment Stations and the Washington Agricultural Research Center. Seed samples for trial, and information, can be obtained from J.R.B.

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