

# 'Oregon Pioneer' and 'Oregon Trail' Peas

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'Oregon Pioneer' and 'Oregon Trail' are pea enation mosaic virus (PEMV)-resistant pea (*Pisum sativum* L.) cultivars developed primarily for the Pacific Northwest and other areas where PEMV seriously limits pea production. These cultivars are intended to be replacements for 'Corvallis', a PEMV-resistant cultivar released in 1976 (Baggett, 1977). Although the quality of 'Corvallis' has been well accepted, it matures late and is susceptible to powdery mildew. 'Oregon Pioneer' is also susceptible to powdery mildew, but it matures earlier and, with a shorter plant, is considered to be a better early spring cultivar. 'Oregon Trail' has about the same maturity as 'Corvallis' but is powdery mildew resistant and recommended for summer and fall plantings, when powdery mildew often becomes serious.

## Origin

'Oregon Pioneer' was increased and tested as OSU 700, an F<sub>5</sub> selection made in F<sub>5</sub> family B435-18-1-1 in 1976. The pedigree of 'Oregon Pioneer', shown in condensed form in Fig. 1, involved ≈ 15 crosses or backcrosses beginning in 1953 with a cross of 'Wando' with a PEMV-resistant selection from PI 140295 (Schroeder and Barton, 1958). The program then included a series of backcrosses involving 'Wando' and P601,

a freezing line from the Gallatin Valley Seed Co., Twin Falls, Idaho. Later crosses included canning cultivar Eureka and freezing cultivars Small Sieve Freezer and Early Frosty, all developed by the Rogers Brothers Seed Co., Twin Falls.

'Oregon Trail' was increased and tested as OSU 695, an F<sub>5</sub> selection from F<sub>5</sub> family B434-13-1-1-2 in 1976. Figure 2 shows a condensed pedigree that involved 20 crosses and backcrosses beginning with the same original cross, 'Wando' × PI 140295, as that described for 'Oregon Pioneer'. Additionally, the parentage of 'Oregon Trail' included the freezing cultivar Frosty (Rogers Brothers) and powdery mildew-resistant G59-29 from the New York Agricultural Experiment Station at Geneva.

Throughout the development of 'Oregon Pioneer' and 'Oregon Trail', breeding materials were annually exposed to a high incidence of PEMV infection, permitting retention of strong field resistance conditioned by the dominant gene *En* (Schroeder

and Barton, 1958). A useful level of resistance to red clover vein mosaic virus (RCVMV) was obtained from undefined sources and maintained by selection under high field infection pressure.

## Descriptions

'Oregon Pioneer' bears long, straight, well-filled, parchmented (shelling-type) pods on a short Perfection-type plant (Fig. 3). Plant height is typically 45 to 60 cm. Flowering begins at about node 14 (medium early), and pods are borne two per node. Leaves are medium-sized, and the plant is usually somewhat determinate in bearing because of earliness and strong pod set. Pods (Fig. 4) are blunt, 8 to 8.5 cm long × 1.5 cm wide when fully mature. Seeds are usually borne eight or nine per pod. Immature seeds at optimum quality are medium-sized and are medium dark green. We judged flavor to be mild, sweet, and free from bitterness. Mature dry seeds are wrinkled and number 4120/kg.

'Oregon Trail' bears well-filled, parchmented (shelling-type) pods on a short Perfection-type plant, typically 60 to 76 cm high. Flowering starts at about node 15 to 16 (medium late). Pods are borne two per node. Up to eight sets of doubles have been observed. Pod load may be bunched at the top of the plant as internodes shorten. Pods (Fig. 5) are blunt, 9 cm long × 1.7 cm wide, and normally bear nine seeds. Edible seeds are medium dark green, with flavor judged as sweet and free from bitterness. Mature dry seeds are wrinkled and number 4380/kg.

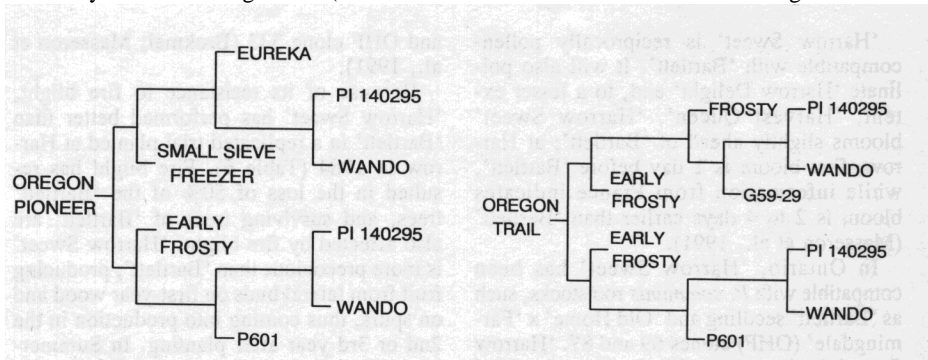


Fig. 2. Pedigree of 'Oregon Trail' pea.

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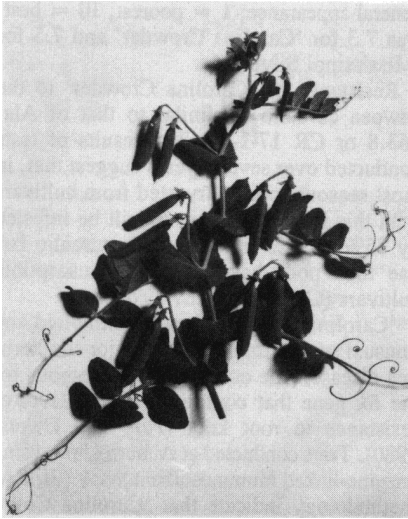


Fig. 3. Plant and pod-bearing habit of 'Oregon Pioneer'.

#### Disease resistance

'Oregon Pioneer' and 'Oregon Trail' have shown good field resistance to PEMV, with moderate and good levels, respectively, of field resistance to RCVMV. They are resistant to common pea wilt [*Fusarium oxysporum* f. *pisi* (Linford) race 1 Snyder and Hansen] as indicated by 7 years of field tests by F. Muehlbauer at Washington State Univ.

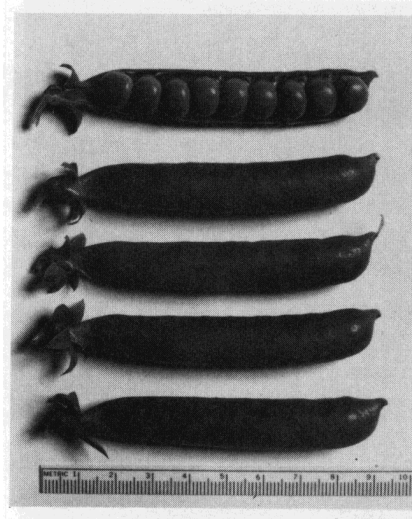


Fig. 4. Typical mature pods of 'Oregon Pioneer'.

'Oregon Trail' is resistant to powdery mildew (*Erysiphe polygonum* DC) in the field at Corvallis.

#### Availability

'Oregon Pioneer' and 'Oregon Trail' were jointly released by the Oregon and Idaho Agricultural Experiment Stations and the Washington Agricultural Research Center. Samples

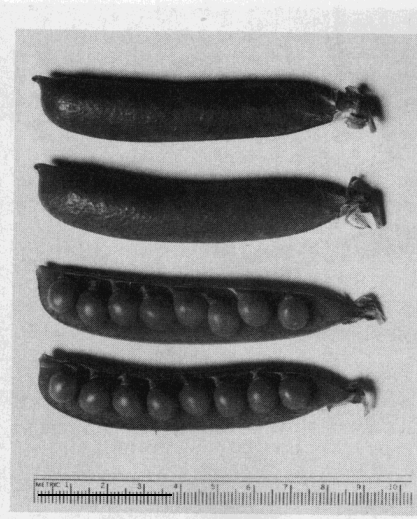


Fig. 5. Typical mature pods of 'Oregon Trail'.

of seeds for trial purposes can be obtained from J.R.B.

#### Literature Cited

- Baggett, J.R. 1977. 'Corvallis' pea. *HortScience* 12:170.  
 Schroeder, W.T. and D.W. Barton. 1958. The nature and inheritance of resistance to the pea enation mosaic virus in garden pea *Pisum sativum* L. *Phytopathology* 48:628-632.