



Melrose Austrian Winter Pea

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Melrose is a new variety of Austrian winter pea which was developed by the University of Idaho in cooperation with Washington State University, Oregon State University and Michigan State University. Originally obtained as an experimental line from Michigan State University, Melrose is a selection from a cross between Common Austrian winter pea and powdery mildew resistant Perfection, a spring pea. Melrose has been evaluated by the University of Idaho since 1973 as experimental line ID 119.

Field trials indicate that Melrose should yield 12% more seed than Common and 8% more seed than Fenn in northern Idaho. Field observations and greenhouse trials indicate that Melrose has more tolerance to *Ascochyta* foot rot, better winter survival and better stand persistence than Fenn. Melrose also makes a high quality An Paste product.

Melrose has a chocolate brown seed coat and yellow cotyledons. It forms purple flowers which

appear in early June above the 16th node in an indeterminate manner. Two to three pods are borne on each peduncle. At maturity, vines often exceed 5 feet in length. Melrose forms abundant nodules and appears to be adapted to a wide range of soils.

Seed Yield

Melrose has been evaluated in field trials at several locations in northern Idaho during the past 5 years. It has yielded more than existing varieties in 9 of 10 trials (Table 1), averaging 196 and 288 pounds more seed per acre than Fenn and Common, respectively. In 1973, under extremely severe winter conditions at Moscow, Melrose yielded 1,920 pounds per acre compared to 1,390 and 1,110 for Common and Fenn. Melrose yielded more seed in this trial because of better winter survival. Under optimum conditions, experimental yields of Melrose have been very high. Commercial seed yields of Melrose under good management should average between 1,800 and 2,000 pounds per acre.



Fig. 1. Part of the University of Idaho's pea research is carried out in these off-station field plots near Grangeville with the cooperation of Idaho County Extension Agent Edward F. Mink, shown here.

Table 1. Seed yield of fall-planted Melrose, Common and Fenn Austrian winter peas in northern Idaho.

Location	Year	Varieties		
		Melrose	Common	Fenn
			(lb./acre)	
Moscow	1973	1920	1390	1110
	1974	4980	4080	4720
	1977	1570	1440	1530
	1978	4260	4043	4188
Grangeville	1973	1390	1050	1110
	1974	2290	2540	2450
	1977	2310	2190	2230
	1978	2450	2080	2190
Nezperce	1975	850	550	650
Reubens	1978	1700	1480	1580
Average of 10 trials		2372	2084	2176
% of Fenn		109%	96%	100%

Melrose was evaluated for seed yield potential as a spring-seeded crop in 1976, 1977 and 1978. In these trials, Melrose and Fenn averaged 2,066 and 2,062 pounds of seed per acre, respectively (Table 2). When spring-seeded, both Fenn and Melrose averaged 400 pounds less per acre than Garfield, a spring pea recently released by SEA, USDA and Washington State University. Successful production of spring-seeded Austrian winter peas requires seeding in the early spring, providing good weed control and receiving sufficient rainfall during late June and early July to mature this crop. Spring-seeded Melrose peas usually mature 2 or 3 weeks later than Garfield. Dry conditions in June and July at Nezperce in 1976 reduced the seed yield of Melrose to 920 pounds per acre.

Winter Survival

Winter survival counts were made during the relatively mild winters of 1977 and 1978. Melrose, Fenn and Common averaged 80%, 80% and 81% winter

survival in those trials (Table 3). Romack, an Austrian winter pea released by the Georgia Experiment Station in 1937, averaged only 61% survival. Severe winterkill was observed in the September seeding at Moscow and at Bozeman, Montana, in 1977. In both trials, Melrose had 15% more seedlings survive the winter than Fenn. This performance combined with the winter survival noted at Moscow in 1973 indicates that Melrose has excellent winter hardiness.

Disease and Insect Resistance

Melrose, Fenn and Common Austrian winter peas are susceptible to Fusarium Wilt Race 1, Sclerotinia white mold and powdery mildew (Table 4). These diseases can cause serious losses under certain environmental conditions. No existing varieties of Austrian winter peas have resistance to these pathogens.

Melrose, Fenn and Common Austrian winter peas are more tolerant to Fusarium root rot than

Table 2. Seed yield of spring-seeded Fenn, Melrose and Garfield peas in northern Idaho.

Location	Year	Planting date	Varieties		
			Fenn	Melrose	Garfield
				(lb./acre)	
Moscow	1976	May 11	1420	1730	2280
	1977	April 12	3250	3240	2460
	1978	April 13	3500	2660	4310
Grangeville	1977	April 18	1560	1780	1860
Nezperce	1976	May 4	580	920	1470
Average			2062	2066	2476
% of Garfield			83%	83%	100%

Table 3. Winter survival of Austrian winter peas at Moscow, Idaho, and Bozeman, Montana.

Variety	Moscow: Year and seeding date						Bozeman		Average winter survival, 8 trials
	1977			1978			1977	1978	
	Aug. 16	Sept. 16	Oct. 16	Aug. 15	Sept. 15	Oct. 15	Sept. 15	Sept. 27	
	(% winter survival)								
Melrose	93	59	49	97	97	84	65	96	80
Fenn	95	44	58	100	100	100	50	96	80
Romack	57	25	45	76	100	68	25	92	61
Common	99	56	63	100	100	81	52	98	81
Average survival in each test	86	46	54	93	99	83	48	96	

other winter or spring pea varieties under greenhouse conditions (Table 1). This disease can cause severe damage even to tolerant varieties under some conditions.

Ascochyta is one of the most serious diseases of Austrian winter peas. This fungus in the form of foliar blight can destroy leaf and stem tissue or it can attack the root and underground stem of the pea as a foot rot. Greenhouse trials indicate that Melrose has more tolerance to both forms of this disease than either Fenn or Common. In 1975 at Craigmont, Idaho, Ascochyta foot rot severely reduced stands of most varieties but Melrose was clean-rooted and maintained good stands.

Melrose can tolerate only limited populations of pea leaf weevil. Its tolerance is not high enough to allow growers to avoid chemical control of the insect.

Cultural Practices

Fall Seeding Dates and Rates

Plant Melrose winter peas during the first two weeks of September to obtain maximum yields (Table 5). Early fall seeding increases winter survival and offers protection against pea leaf weevil attack the following spring because plants are larger

and more vigorous. Early fall-seeded peas flower earlier and avoid much of the hot weather that could limit seed production. The early-seeded peas also reduce soil erosion.

If limited soil moisture prevents the preparation of good fall seedbed, delay seeding until you can prepare a seedbed with moderate sized clods and moderate straw residues. Melrose should not be seeded into excessive amounts of wheat straw.

Seeding rate should be 75 pounds per acre on September 15. Increase seeding rates 1 pound per acre for each day that seeding is delayed beyond September 15. In rough seedbeds, increase seeding rates an additional 15 to 25 pounds per acre.

Spring Seeding Dates and Rates

Melrose should be planted as early as possible in the spring. In northern Idaho, plant during early March at the lower elevations and early May at the higher elevations. Early seeding is crucial to producing good seed yields because Melrose takes longer to mature than most spring peas.

Spring seeded Melrose should be planted at 90 to 120 pounds per acre. Higher seeding rates should be planted in rough seedbeds. Increased seeding rates will not compensate for seeding too late in the spring to allow Melrose to mature.

Table 4. Disease resistance of Melrose, Fenn and Common Austrian winter peas.*

Variety	Diseases					
	Fusarium wilt Race 1	Fusarium root rot	Ascochyta		White mold	Powdery mildew
			Foot rot	Foliar blight		
Melrose	Susceptible	Tolerant	Tolerant	Tolerant	Susceptible	Susceptible
Fenn	Susceptible	Tolerant	Susceptible	Susceptible	Susceptible	Susceptible
Common	Susceptible	Tolerant	Susceptible	Susceptible	Susceptible	Susceptible

*Data from greenhouse trials and field observations.

Table 5. Seed yield of Melrose, Fenn and Common Austrian winter peas planted on two dates at Moscow and Grangeville in 1978.

Variety	Moscow seed yield ²		Grangeville seed yield	
	Sept. 2	Oct. 4	Sept. 14	Oct. 5
Melrose	6346 ¹	6642	3972	2892
Fenn	6732	6443	3650	2835
Common	6248	6010	3580	2781
Average	6442	6365	3734	2836

¹Varieties within planting dates were not statistically different in seed yield.

²Peas planted on Oct. 25 at Moscow did not survive harvest.



Fig. 2. Melrose peas typically produce two to three pods on each peduncle.

For Additional Information

Additional information on the cultivation of winter peas is available in University of Idaho Experiment Station Bulletin 578, Dry Pea and Lentil Production in the Pacific Northwest.

The Authors

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This work was conducted with financial support provided by the Idaho Pea and Lentil Commission. Earlier work on Melrose was contributed by Dr. Al Slinkard and Dr. Arden Campbell, former plant breeders at the University of Idaho.