

PEA CULTIVAR EVALUATION AT PGRO

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The Processors and Growers Research Organisation (PGRO) is the center for independent evaluation of pea cultivars in the United Kingdom. The organization has been in operation since 1944 and, in addition to a wide range of agronomic research, now annually evaluates around 100 vining pea and 50 combining pea cultivars. Evaluation of vining pea cultivars takes place in three stages. The first stage is the screening trial. Here, new lines from plant breeders are tested for plant type, habit, maturity, and suitability for quick-freezing or canning; a general idea of the yield potential is also obtained. When cultivars are to be entered for the National List Tests of an EEC member country, they are then simultaneously entered into our preliminary trial. At this stage more attention is paid to the yield and a more detailed assessment is made of agronomic performance. Also, they are screened for resistance to pea wilt (Fusarium oxysporum race 1), downy mildew (Peronospora viciae) and tolerance to commonly used herbicides. The third stage of evaluation is the main trial. This consists of the most promising varieties from the preliminary trial and once in this trial they are evaluated for at least three consecutive years. From here the best go on to field trials with growers and processors and, we hope, are taken up by the industry.

In the evaluation of new cultivars for use in the UK, we are looking for many qualities, some of which are outlined below.

1. Yield

A significant and consistent increase in yield over the standard control varieties within the different maturity groups.

2. Disease resistance

Resistance to pea wilt (Fusarium oxysporum f. pisi race 1) and downy mildew (Peronospora viciae). Downy mildew especially is a major problem in the UK and many new cultivars have been shown to be highly susceptible to this disease, which has led to reduced yield. Susceptibility to root and soilborne diseases may be genetically controlled; increased root vigor and disease resistance could be very beneficial, especially for early-maturing cultivars.

3. Maturity

Difficulties are still encountered at extreme ends of the season; new first early cultivars are always being looked for. Late-maturing ones are also useful for reducing the length of the drilling program and to enable sowing to be made under less adverse conditions.

4. Plant architecture

A plant habit which is erect and open increases air circulation within the crop canopy and helps to prevent fungal infection. A determinate, erect habit allows easier operation of harvesting machinery while also ensuring a more even maturation. Good results have recently been obtained with reduced leaf and semi-leafless cultivars and these types look more promising than leafless ones at present.

5. Produce quality

For the freezing market the produce must be of a uniform bright green color and be uniform in size, texture, and maturity. Although the trend has been towards smaller sized peas, many processors still use the standard medium to large sized cultivars such as 'Sprite', 'Scout', and 'Dark Skinned Perfection'. Canners are also using these cultivars, although there are signs of a renewed interest in pale-seeded types.

Requests for information on PGRO and entries for the pea cultivar trails are invited. Details can be obtained from:

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ERRATUM

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In "Additional evidence bearing on the pleiotropic action of Am-1 and Am-2" by G. A. Marx, pp. 30-32:

—p. 31, Table 2: under "Presumed F₂ genotype"

<u>Present</u>	<u>Should be</u>
A <u>am-2</u> B/B	A <u>am-2</u> b/b
A <u>am-2</u> B/b	A <u>am-2</u> B/b (same)
A <u>am-2</u> b/b	A <u>am-2</u> B/B
A <u>Am-2/am-2</u> b/b	A <u>Am-2/am-2</u> b/b (same)

The list of presently cultivated cultivars of field pea officially registered in Poland (1981)

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REGISTERED POLISH FIELD PEAS

1982

PNL Volume 14

Name of cultivar	Origin	Breeding station	Year of registration	Length of stem (cm)	Thousand grain weight (g)	Type of usage	State trials 1979-81 Yield		Genotype
							Seeds (t/ha)	Green forage (t/ha)	
<u>Dry Seed Types</u> (human consumption)									
Kujawski Wczesny	(Edelperle x Victoria) x Victoria Mahndorfer	Nagradowice	1957	121	300	Seeds	2.57	-	<u>a,Le,l</u>
Kaliski	Kujawski Wczesny x Ceser	Sobotka	1977	118	240	Seeds	2.84	-	<u>a,Le,l</u>
Zefir	Bulawa x Orlik	Sobotka	1979	80	241	Seeds	2.80	-	<u>a,le,l</u>
Sum	Porta x Wasata	Radzikow	1979	78	220	Seeds	3.05	-	<u>a,le,af,l</u>
Hamil	Porta x (Wasata x 21/2)	Przebedowo	1981	65	242	Seeds	2.94	-	<u>a,le,af,l</u>
Karat	(Bulawa x Iwo) x (Bulawa x Grestikak)	Sobotka	1981	110	234	Seeds	3.10	-	<u>a,Le,l</u>
Opal (RWT 4025)	Auralia x Flavanda	Wiatrowo	1982	81	290	Seeds	3.08	-	<u>a,le,l</u>
<u>Forage & Fodder Types</u>									
Kosieczynska (Enka)	(P. sativum x P. arvense) x P. quadratum	Nieznanice	1955	190	140	Green forage	-	27.4	<u>A,och,l</u>
Nieznanicka	Selected from land race	Nieznanice	1955	174	140	Green forage	-	28.1	<u>A,Pl,oh,l</u>
Pomorska	Pop. 294 Litwa x Pop. 187 Poniewierz	Datnowo	1957	160	136	Seeds for fodder	1.97	-	<u>A,oh,l</u>
Fioletowa	Country pop. x English pop. x Wiktoria x Folger hybrid x Russian pea	Przebedowo	1974	172	154	Green forage	-	25.4	<u>A,Pl,l,oli</u>
Mazurska	(Pop. Antocjanowa x Weibull) x Mutant 361	Szyldek	1975	172	142	Seeds for fodder	1.98	-	<u>A,och,l</u>
Karo	Selected from land race from Mazury Lake district	Kosieczyn	1976	178	176	Green forage	-	26.9	<u>a</u>
Wasata	Mutant <u>afila</u>	Przebedowo	1979	162	136	Seeds for fodder	1.72	-	<u>a,af,l,Pl</u>
Fidelia	Zeiners Durz und Gut x R. 1002	Wiatrowo	1980	172	142	Seeds for fodder	2.27	-	<u>A,ohs,l</u>
WTD 2814	Poneka x Dorina	Wiatrowo	1982	180	161	Seeds & green fodder	1.80	27.7	<u>A,Ob,l,l,Pl</u>
T-II	Fioletowa x Przebedowska Oliwkowa	Przebedowo	1982	173	154	Seeds for fodder	1.91	-	<u>A,l,oli,Pl</u>