

Procedures for Evaluation and Recommendation for Registration of Cultivars of Field Pea for Western Canada, 2017

In order for a field pea cultivar to be registered by the Canadian Food Inspection Agency (CFIA), a recommendation of support for registration must be obtained from the Prairie Recommending Committee Pulse and Special Crops (PRCPSC). To obtain that recommendation the candidate cultivar must be evaluated in the Field Pea Co-operative Registration Test (Pea Co-op Test) for a minimum of two years. In order to be evaluated in these trials the sponsor of the candidate cultivar must apply to the test coordinator to enter the candidate cultivar into those trials.

Requirements for entry into the Field Pea Cooperative Test

The Pea Co-op Tests consists of Co-op Test A and B, as well as Co-op Test C (short season). All entries must be resistant to powdery mildew. The following information must be provided to the test coordinator: name of entry, name of sponsor, name of breeding institution, cotyledon colour, the maturity of the candidate cultivar relative to a current check cultivar (to assist in grouping candidate cultivar into Co-op Test A, B or C, the year in the coop test, i.e. the 1st year or 2nd year Pea Co-op Test, and whether the cooking test is requested. The maximum size of the Pea Co-op Tests is 36 entries including checks. The amount of seed required is 40,000 germinating seeds with no seed treatment applied.

Field Pea Cooperative Registration Test Procedures

Ten sites will receive funding for Co-op A, Co-op B, and Co-op C, and one site (Fort St. John, BC) will receive funding for Co-op C. Additional Co-operators who request to grow the test without funding may do so at the discretion of the coordinator. Data obtained from non-paid sites will be incorporated into the report in the same manner as paid sites. For sites abandoned before harvest, the test Co-operators and the test coordinator will determine the proportion of work completed at that time and payment will be prorated on that basis. Any surplus funds will be distributed to cooperators growing voluntary sites.

Two years of testing are required. A third year of testing may be conducted at the expense of the sponsor. Candidate cultivars can be withdrawn at the beginning of any test year at the discretion of the sponsor. The tests are arranged in a randomized complete block or lattice design with three replicates.

Agronomic data typically collected include % plant stand, leaf type, vine length, pre-harvest lodging score, days to maturity and seed yield. Typical maximum acceptable coefficient of variation (CV) for seed yield is 15, however, discretion is allowed the test coordinator to accept somewhat greater CV under exceptional circumstances, for example, in rare seasons where adverse environmental conditions cause many of the tests to have CV greater than 15. Minimum acceptable trial site mean yield is 1500 kg/ha.

Disease data collected typically include mycosphaerella blight, powdery mildew, and Fusarium root rot. In recent years these assessments have been made at AAFC, Morden, MB, and at University of Saskatchewan, Saskatoon, SK, but starting in 2017, the Morden site will be replaced by AAFC, Lethbridge site.

Quality data typically collected include:

- a) On all entries: cotyledon and seed coat color, seed weight, seed shape at a minimum of eight locations; and crude protein concentration at a minimum four locations per year.
- b) On green cotyledon entries: green color bleaching score, and green color intensity score at a minimum of six locations.
- c) Cooking quality is an optional test at the discretion of the variety sponsor. The cooking test is conducted at the Crop Development Centre, University of Saskatchewan.

Check cultivars are determined annually by the PRCPSC. Entries are compared to the same set of checks for all years of Cooperative Testing. Checks are replaced when a better performing cultivar is registered in that class, and is grown on a wide scale commercially, or is anticipated to be grown on a wide scale within a year or two.

For Co-op C, all plots are desiccated and then harvested when the designated check variety is mature. In order to facilitate the operations of applying desiccants and harvesting, sufficient space should be given between the Co-op A, Co-op B and Co-op C tests.

All tests are managed and harvested according to sound agronomic practices for field pea in western Canada as outlined in provincial pulse grower manuals. Typically, the trials are planted as part of a four-year crop rotation and follow a cereal crop or chem-fallow season. The coordinator, all cooperators, and the PRCPSC will strictly adhere to the professional code of ethics as developed by the PGDC.

Inspection of coop trials

The cooperative trials are open for inspection by variety sponsors, PRCPSC members, and CFIA staff. If concerns are detected they should be communicated to the site cooperator and the test coordinator.

Submission of data for support for registration

The test coordinator will provide a standardized data package for all sponsors of final year entries in the test. This package will also be distributed to all members of the PRCPSC at least one week prior to the annual meetings of the PRSPSC. The data submitted by variety sponsors requesting support for registration may also include other pertinent supplementary data. The PRCPSC will judge the acceptability of the supplementary data.

The principle of merit is used by the members of the PRCPSC in their decision regarding the support of a candidate cultivar for registration. Candidate cultivars must meet the following standards.

A) For yellow and green pea candidates

1. Powdery mildew resistance
2. Grain yield at least 103% of the mean of the cotyledon colour checks
3. Lodging rating not significantly poorer than the mean of the cotyledon colour checks

B) For yellow pea candidates

4. Crude protein concentration not significantly poorer than the mean of the yellow cotyledon checks

Additional data collected for other traits will be presented for information purposes to the PRCPSC.

A candidate with a deficiency in 2, 3, or 4 above could be offset by superior performance in one or two of 2, 3, or 4, or in one or more of the traits presented for information.

Once a candidate cultivar has been supported for registration, both the sponsor and the secretary of the PRCPSC shall submit the data summaries, along with copies of letters of support from the PRCPSC to the Canadian Food Inspection Agency-Variety Registration Office.

Fees established by the PRCPSC will be charged for the inclusion of entries into the Pea Co-op Test. This fee will be ratified annually by the PRCPSC. The coordinator of the Field Pea Cooperative Registration Test is required to collect and distribute fees according to the coop trial guidelines.

A. Field Pea Cooperative Test Coordinator

Dr. Tom Warkentin
Crop Development Centre
University of Saskatchewan
51 Campus Drive
Saskatoon, Sk. S7N 5A8
Tel : 306-966-2371
Fax : 306-966-5015
email: tom.warkentin@usask.ca

B. Check Cultivars

Co-op A, Co-op B:
2017 checks for 1st year entries:
Yellow pea: CDC Amarillo and AAC Lacombe
Green pea: CDC Limerick and CDC Greenwater

2017 checks for 2nd year entries:
Yellow pea: CDC Amarillo and AAC Lacombe
Green pea: CDC Limerick and Cooper

Co-op C:
2017 checks for 1st year entries:
Yellow pea: AAC Lacombe and Peace River
Green pea: CDC Raezer and CDC Limerick

2017 checks for 2nd year entries:
Yellow pea: AAC Lacombe and Peace River.
Green pea: CDC Raezer and CDC Limerick

Note for Co-op C: AAC Lacombe is the maturity standard; when AAC Lacombe is ready for desiccation, all plots of Co-op C should be desiccated.

C. Paid sites in 2017

Manitoba:

Brandon, MB (Co-op A, B, C)

Saskatchewan:

Indian Head, SK (Co-op A, B, C)

Melfort, SK (Co-op A, B, C)

Limerick, SK (Co-op A, B, C)

Saskatoon, SK (Co-op A, B, C)

Scott, SK (Co-op A, B, C)

Swift Current, SK (Co-op A, B, C)

Alberta:

Barrhead, AB (Co-op A, B, C)

Lacombe, AB (Co-op A, B, C)

Brooks (Co-op A, B, C)

British Columbia:

Fort St. John, BC (Co-op C only)

Note: The number of sites per province approximately reflects the area in field pea production in western Canada. To facilitate year-to-year comparisons at individual sites, it is recommended that, if possible, these sites remain constant over the years.

D. Volunteer sites in 2017

Kamsack, SK

St. Albert, AB

Vegreville, AB

E. Fees (\$ Cdn/entry/year) for 2017-2019

Component	2016	2017	2018	2019
Test coordination	415	435	457	480
Agronomic	1103	1158	1216	1277
Pathology	110	116	122	128
Quality	168	176	185	194
Cooking (optional)	110	116	122	128
Total	1906	2001	2101	2206

* The agronomic portion will be divided by the total number of plots at all test sites, and distributed to each test site based on the total number of plots grown at any particular site. Plots of check varieties are not paid.

E. Summary of Deadlines:

Due date for intention to enter the Field Pea Co-operative Test: **February 15, 2017**

Due date for seed delivery to coordinator: **March 15, 2017**

Seeds to be delivered to:

Jaret Horner
Plant Sciences Dept.
University of Saskatchewan
Saskatoon, Sk. S7N 5A8
Tel: 306-966-1216
Fax: 306-975-0456
Email: jaret.horner@usask.ca

Amount of seed required: 40,000 germinating seeds; no seed treatment.

Due date for fee payment: May 1, 2017. An invoice will be sent to each variety sponsor. Make cheque payable to "University of Saskatchewan" and mail it to the test coordinator. **Due date for agronomic data and composite seed samples** provided by Co-operators to coordinator: **September 30, 2017.** Preliminary yield data will be distributed by the coordinator to sponsors by **October 15, 2017.** Disease evaluation report will be delivered to the coordinator by **December 1, 2017.** **Due date for complete Co-operative Test report: January 31, 2018.**