

**2017 GUIDELINES
FOR TESTING PERFORMANCE OF
ONTARIO SOYBEAN CULTIVARS**

***Ontario Soybean Public Trials:
Ontario Conventional Soybean Trial***

Ontario Glyphosate Soybean Trial

**Provided through the
ONTARIO SOYBEAN AND CANOLA COMMITTEE**

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These guidelines involve the implementation of decisions made in meetings of the Ontario Soybean And Canola Committee (OSACC) over a number of years.

If any errors or omissions are noted, they should be brought to the attention of the soybean data coordinator.

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1. Introduction

The Ontario Soybean Trials (OST) are public trials conducted by research institutions in Ontario through the Ontario Soybean And Canola Committee (OSACC). The purpose of the Ontario Soybean Trials is to obtain agronomic, pest, disease, and quality information from Oilseed varieties for use in preparing a performance report of varieties. Soybeans used for food such as Food Grade varieties are included in the trials for industry information only.

The OSVT are divided into two separate sets of trials; the Ontario Conventional Soybean Trials (**OCST**) and the Ontario Glyphosate Soybean Trials (**OGST**), each grown at the same locations.

OSACC conducts performance testing of entries registered by CFIA, or certified by CSGA, or experimentals for a fee. Entries may only be entered in the Ontario Soybean Variety Trials through a Canadian sponsor. The performance of registered and certified varieties is published in a brochure format entitled 2017 Report, Ontario Soybean Variety Trials and on the OSACC website, www.GoSoy.ca which are available in late November.

2. Membership

The Ontario Soybean And Canola Committee (OSACC) is comprised of individuals from the following public and private soybean groups:

- Canadian Grain Commission (CGC)
- Canadian Seed Trade Association (CSTA)
- CSTA Researchers
- Kemptville campus of the University of Guelph (KCUG)
- Ontario Agricultural College, University of Guelph (OAC)
- Ontario Canola Growers' Association
- Ontario Seed Growers Association (OSGA)
- Ontario Soil and Crop Improvement Association (OSCIA)
- Grain Farmers of Ontario (GFO)
- Canadian Certified Crop Advisor Association (Ontario)
- Ontario Ministry of Agriculture, Food and Rural Affairs
- Research and Development Centre, Harrow - Agriculture & Agri-Food Canada (HRDC)
- Research and Development Centre, Ottawa - Agriculture & Agri-Food Canada (ORDC)
- Ridgetown campus of the University of Guelph (UGRC)
- Variety Registration Office - Canadian Food Inspection Agency (VRO)

3. Meetings

Annual meetings of OSACC are held during the latter part of January to discuss research reports, trial results and changes or modifications to the testing program. Other meetings may be called as necessary. A quorum is defined as **50%** of the membership of OSACC. Voting is conducted by show of hands unless a secret ballot is requested. All members will vote on all motions unless a conflict of interest is declared. Individuals who are not members of OSACC but are interested in the proceedings of these meetings may attend as observers with the permission of the OSACC Main Committee Chair, Mr. Albert Tenuta, OMAF.

An annual Ontario Soybean Tour of public test sites is held in September.

4. Entry of Lines in Public Trials

4.1 Trial Sites and Co-ordinators

Trial sites for OST in 2017 are given in Table 1.

TABLE 1. Trial Sites and Co-operators for Ontario Soybean Tests – 2017

Heat Unit Zone/ Maturity Group	Location	Co-operator	Heat Units Available*	Row Width (cm)	Rows per plot
Early MG 00 (00.1 to 00.3) (2200 CHU) (only RR)	New Liskeard	U of G - New Liskeard	2200	56	3
MG 00 (00.2 to 0.1) (2400 CHU) (only RR)	Dundalk	Kent AG Research Inc	2400	56	3
	Arthur	Kent AG Research Inc	2500	56	3
	Elora	OAC	2550	35	4
MG0 (0.1 to 1.1) (2600 CHU)	Elora	OAC	2550	35	4
	Walton	Kent AG Research Inc	2550	56	3
	Ottawa	ORDC	2750	40	4
	Lindsay	Kent AG Research Inc	2825	56	3
MG1 (0.8 to 1.8) (2800 CHU)	Woodstock	OAC	2700	35	4
	Exeter	OAC	2800	35	4
	Winchester	KCUG	2825	35	4
	St Marys	OAC	2900	35	4
Early MG2 (1.7 to 2.7) (3100 CHU)	Talbotville (loam)	Kent AG Research Inc.	2900	56	3
	Palmyra (clay)	RCUG	3000	43	5
	Inwood (clay)	RCUG	3050	43	5
	Ridgetown (loam)	RCUG	3250	43	5
Late MG2 (2.1 to 3.2) (3400 CHU)	Chatham (loam)	RCUG	3300	43	5
	Merlin (clay)	RCUG	3300	43	5
	Woodslee (clay)	HRDC	3400	46	5
	Malden (loam)	HRDC	3500	46	5

*Crop heat units

Co-ordinators for Individual Test Areas are as follows:

Maturity Group (MG)

Crop Heat Units (CHU)

Name and Address

Early MG00 (2200) Dr. Elroy Cober,
MG00 (2400) Ottawa Research and Development Centre (ORDC)
MG0 (2600) Agriculture & Agri-Food Canada
 960 Carling Ave, Bldg # 110
 Ottawa, Ontario K1A 0C6
Elroy.cober@agr.gc.ca

MG1
2800 Dr. Istvan Rajcan
Department of Plant Agriculture (OAC)
Crop Science Bldg
University of Guelph
50 Stone Road East
Guelph, Ontario N1G 2W1
irajcan@uoguelph.ca

Early MG2
3100 Dr. Milad Eskandari
Ridgetown campus - University of Guelph
210 Main Street East
Ridgetown, Ontario N0P 2C0
meskanda@uoguelph.ca

Late MG2
3400 Mr. Tom Welacky
Harrow Research and Development Centre (HRDC)
Agriculture & Agri-Food Canada
2585 County Rd 20
Harrow, Ontario N0R 1G0
gosoytom@cogeco.ca

Food Grade Soybeans - data co-ordinator is Dr. K. Yu – Kangfu.yu@agr.gc.ca

4.2 Criteria for Acceptance of Entries

i) **Canadian Sponsor**

Entries may only be entered in the OST through a Canadian sponsor located at a Canadian address. A Canadian sponsor will be an individual or organization involved in an agricultural endeavour in Canada, either public or private.

ii) **Seed Requirement**

Entries with de-regulated traits that have stewardship requirements or special handling requirements will not be eligible for entry into public trials.

Seed is to be sent to the following:

Early MG00 (2200) – 4,000 seeds
MG00 (2400) – 15,000 seeds
MG0 (2600) - 15,000 seeds
Send to Dr. Elroy Cober.

MG1 (2800) – 16,000 seeds
Send to Dr. Istvan Rajcan.

MG2E (3100) and MG2L (3400) – 14,000 seeds
Send to Dr Milad Eskandari

iii) Additional test factors -

It is permissible to enter the same variety in more than one area, provided the appropriate fees are paid for each area.

A portion of the seed submitted will be stored for possible testing of genetic identity.

Seed from the United States must be cleared through Canada Customs. Companies must have import permit numbers for seed being imported or seed will be sent back from customs. Canadian representatives are requested to clear the seed through customs themselves. Also, please ensure that the proper affidavits accompany the seed. These will include:

- (a) a Certificate of Origin and
- (b) a Phytosanitary Certificate.

Seed entries for each zone must be bagged separately by the sponsor when submitted.

iv) Number of Entries

For any one zone, no more than ten (10) entries for the OCST and no more than ten (10) entries for the OGST will be accepted from any one sponsor in 2017.

v) Germination Requirement

A germination of 85% will be assumed unless germination testing information to the contrary is provided by the source supplying the seed.

Treated seed will not be accepted and will not be included in a test site unless approved by OSACC zone coordinators and test site cooperators for pest problems affecting emergence at that specific test site.

The OSACC standard is that only untreated seed will be used for OST trials.

vi) Information for Entry Forms

Entry forms will be available on the OSACC website (www.GoSoy.ca). Information for each MG Trial Entry list can be referenced on the GoSoy.ca member's area.

Sponsors are required to mark the check box at the beginning of the entry form indicating that they will accept the conditions of the security agreement as outlined in the OST Guidelines, Section 4.3 (i) Security of Entries.

If an entry is made under a name or number different from that used previously, both names or numbers must be listed as well as trial year, at the time that the entry application is made. Please indicate if an entry is a backcross-derived strain of a variety recommended in Ontario.

Entry Forms must include descriptive information on flower colour, pubescence colour and hilum colour. Any Phytophthora resistance (Rps) genes known to be present in a line should be identified. Information in the "Exname" column is hidden except for Coordinator reference.

When submitting a Food Grade entry for inclusion in the OCST, sponsors must indicate that it is a Food Grade entry and indicate its distinctive attributes. Sponsors should include the CSGA Certificate of Eligibility for Certification number on the entry form; food grade entries lacking this number will be entered as (EXP) entries submitted for performance, testing and charged the higher fee.

Beginning in 2017 season, sponsors may elect to mark a check box on the entry form indicating that they wish to have the PBR 91 or the PBR 91 pending logo attached to their

variety name. The PBR 91 logo will be attached and illustrated on Table 1 for the November review by sponsors and will offer another opportunity for the sponsor to elect the application of the logo to the sponsor's variety.

Effective in 2017, sponsors that enter entries into a maturity group and are not able to supply seed to the seed distributors and do not cancel the entry request in time to meet final planting plans and planting dates as determined by the MG co-ordinator will be required to pay the entry fee. The missing entries will be replaced with fillers by the MG co-ordinator.

vii) Blends and Brands

Blends of soybean varieties will not be accepted in the Ontario Soybean Trials. Only pure-line material which will potentially enhance the choice of cultivars for Ontario growers will be acceptable.

Some U.S. companies market soybeans as Brands, which may not be the same variety each year. Such brands will not meet CFIA registration standards. Canadian representatives should ensure that entries are varieties rather than brands.

viii) Conventional herbicide entries in OCST

All entries in the Ontario Conventional soybean trials must be non-glyphosate resistant.

ix) Deadline for Entries and Seed Submission

Entry forms completed on the website (www.GoSoy.ca) will automatically be forwarded to the appropriate coordinators and entry lists.

Entry forms for performance evaluation for each zone should be **completed by April 7, 2017**.

Soybean seed for the Early and Late MG2 zones should be sent by April 14, 2017 to Dr. Milad Eskandari.

Soybean seed for the MG1 zone should be sent by April 14, 2017 to Dr. Istvan Rajcan.

Soybean seed for the MG0, MG00 and Early MG00 zones should be sent by April 14, 2017 to Dr. Elroy Cober.

4.3 (i) Security of Entries

OSACC conducts soybean variety trials in Ontario as an information source for the soybean industry. Its main goal is to compare variety agronomic performance in specific maturity zone test sites across the province. OSACC does not develop intellectual property or make patent applications on the information it collects. Its primary interest is to provide producers a relative comparison of similar soybean varieties for yield and variety characteristics.

Seed of entries will be used only for the indicated trial purposes. Seed and/or pollen will not be used for breeding purposes by the trial co-operators, nor will they be given out to unauthorized individuals, except under conditions specified by the sponsoring company, institution or individual. Sponsors are asked to notify the Soybean Coordinator in writing before the submission deadline if individual companies/institutions have further restrictions on their genetic material.

(ii) Canadian Food Grade Database

Seed of non-GMO Food Type and dual purpose soybean varieties from the Ontario Conventional Soybean Trials (**OCST**) which are registered or have a CSGA Certificate of Eligibility for Certification number will be analyzed for compositional quality for inclusion in a public Canadian Food-Grade Soybean Database on the OSACC website – GoSoy.ca.

Only the varieties of those sponsors who have consented to have their varieties included will be added to the website. If your organization wishes to have your varieties included for the 2017 crop year, please be sure to indicate this when completing your entry form.

4.4 Entry Fees

The Ontario Soybean And Canola Committee will send invoices to sponsors in July, 2017 for payment of their entries based on the following fee schedule plus the Harmonized Sales Tax (HST). Applicable fees are as follows:

Code	
R	Cultivars registered or “Eligible for Certification (Form 300)” in Canada by March 20, 2017 - \$460 cost (\$300 fee to be paid by sponsor and \$160 of services provided by testing institution).
EXP	Experimental entries submitted for performance testing, limited to 12 entries per sponsor in each relative maturity zone - \$550 to be paid by sponsor.

The above fees apply to the MG0, MG1, Early MG2 and Late MG2 zones which have 4 locations each. Fees for the Early MG00 zone (1 location) will be invoiced at 25% of the above rates and fees for the MG00 zone (3 locations) will be invoiced at 75% of the above rates.

Voluntary White Mold Test fee is an additional \$70 (Testing at Harrow MG 2L zone).

5. Public Trials

5.1 Trial Management

The Ontario Soybean Public Trials are conducted across Ontario by co-operators at various research facilities, and farm locations. For the MG00E MG00 (2400), MG0 (2600), MG1 (2800), MG2E- (3100) and MG2L (3400 HUZ) four Public Registration/Performance tests per Maturity Group will be grown each year for each of the OCST and OGST. Entries will be categorized as performance entries (registered varieties by **January 20, March 20, July 20 and November 20, 2017.**

Sponsors can have a maximum of 20 entries in each MG zone OSVT test.

Tests are managed using accepted agronomic practices and the utmost care is taken to ensure successful tests. OSACC, however, does not guarantee that any test will be considered acceptable for testing purposes since factors out of the control of OSACC such as weather extremes, etc. may influence the outcome of tests. Fees for invalid tests deemed to be the result of mismanagement will be returned. Fees for invalid tests which, in the opinion of OSACC, were caused by events beyond the control of the test co-operator, will not be returned.

Herbicide Management. The OSV public trials are divided into 2 separate trials, the OCST and the OGST, based on herbicide management. The OCST, with only standard (glyphosate susceptible) non-GMO varieties will be grown using standard management methods and recommended herbicides (non-glyphosate herbicides) and the OGST will have transgenic varieties only, using standard management methods and glyphosate herbicides applied according to label recommended rates and plant growth stages.

Maturity of Candidates. OSACC does not want to extend the maturity (on the late side) of the entries in the tables in the annual Ontario Soybean Variety Trial Report. The coordinator will identify anomalies

each year in the MG tables to indicate the preferred late cultivars in each table.

Prior to entry of a line in a MG trial, **the sponsor** should have Ontario maturity test data which would support that the entry would mature no later than the preferred late cultivars in the intended MG Table in which it is to be entered. The test cooperator will have the discretion to handle the entry as needed if entries in a trial are sufficiently late to impair the timely harvest of the trial. After analysis of data from the first year in the trial, if an entry is later than any entry in the published corresponding MG table, then the coordinator will contact and alert the sponsor that the entry might be in the wrong HU zone trial. If the sponsor re-enters the late cultivar in that trial and it is later than any other registered entry in the MG table, at the coordinator's discretion, the data would not be published.

5.2 Data Collection, Analysis, and Distribution

All Public tests shall have a minimum of three (3) replications/location with entries randomized in an experimental design suitable for the number of entries.

Data for yield, maturity, plant height, lodging, flower, pubescence and hilum colour, oil and protein content, and grams per 100 seeds will be collected in all Public tests. For Food Grade Entries in the OCST, the varieties of those sponsors who have consented to have their varieties included will be analyzed for compositional quality for inclusion in a public Canadian Food Type Database on the OSACC website GoSoy.ca. Other variables such as height of pods, seed quality and disease or pest incidence may be recorded in some tests.

Yield should be reported as kg/ha at 13% moisture. Maturity should be recorded as days from planting to the date when 95% of the pods have ripened. Delayed leaf drop and green stems are not considered when assigning maturity. Oil and protein are reported on a dry matter basis and are obtained with an NIR whole-grain analyzer.

5.3 Evaluation of Special Attributes

(i) Phytophthora. Sponsors may enter test entries in the Phytophthora test on a voluntary basis on entry forms. All voluntary public test entries will be tested at Woodslee by Late-MG 2 coordinator at the Greenhouse and Processing Crops Research Centre of Agriculture & Agri-Food Canada for field tolerance to prevalent races of root rot caused by *Phytophthora sojae*. Field tolerance will be determined by the percentage of plants killed by the disease in the field. Entries that are only in Private tests are not tested.

Race specific resistance is not determined; this information should be supplied by the sponsor if available. Companies or institutions that wish to have a variety/line identified as having specific gene resistance to phytophthora in the Ontario Soybean Variety Test Reports should indicate the specific resistance gene(s) on the entry form for public tests.

(ii) White Mold Testing. Sponsors may submit varieties for testing for white mold (*Sclerotinia sclerotiorum*) on a voluntary basis on the entry forms. White mold test will be located at Harrow in the Late MG2 zone for 2017. Test varieties are maintained at a high moisture level with misting sprinklers and are dependent on natural inoculation. Early MG entries (00) are discouraged due to untimely synchronization between white mold development and very early floral development. Fees are **\$70.00 per entry** and are invoiced in July. Year end results are reported to participating sponsors and on the GoSoy.ca white mold web page if infection is adequate.

(iii) Soybean Cyst Nematode. Sponsors that have entries with SCN resistance can voluntarily submit entries for testing in the SCN Performance Test of the Cooperative Development of SCN Resistance Variety tests. Entry information, fees and seed requirements are outlined in the annual SCN guidelines.

5.4 Inspection of Tests and Valid Tests

Public Tests will be inspected by members of OSACC. Inspections will be made by representatives of institutions other than those conducting the test. Inspection is generally done during the Soybean Tour.

Problems with individual tests should be reported in writing to the Soybean Coordinator and the MG Coordinator in a timely manner. White mold, Phytophthora and SCN tests will be inspected by OSACC representatives of institutions other than those conducting the test.

All Public test locations must have a coefficient of variation (CV) of less than 15% for seed yield to be considered valid. Test data for each test location must be analyzed using sound scientific statistical techniques.

6. Performance Reporting and Publication

Any entry which is registered through the Canadian Food Inspection Agency, by November 20, or varieties that are exempted from registration but have obtained CSGA certification by November 20, will be included in Table 1, of the annual Ontario Soybean Variety Test brochure and website.

At the request of the sponsor, entries supported for registration will be posted on Table 1.

At the request of the sponsor, one year varieties registered by November 20 and having performance information from the OSACC public tests will be entered on Tables 2-6 and will be added to the GoSoy.ca OSVT posted publication for the November 20, January 20, March 20 or July 20th updates.

At the request of the sponsor, additions will be made to the GoSoy.ca OSVT tables after November 20, March 20 and July 20 providing that there is a minimum of 4 new registered or certified varieties. If there are fewer than 4 new registered or certified varieties by the 20th of the month then these will be carried forward to the next update of January 20, March 20, July 20 and November 20.

Drafts of Table 1 will be posted on the website for sponsors assigned a password and ID code and e-mailed to sponsors during the last week of October for review and modification.

Maturity will be listed as days to maturity in Tables 2-7. Table 1 varieties will be sequenced by using days to maturity to one decimal point for listing the varieties from early to late. Varieties listed in Table 1 will be assigned a Relative Maturity rating by the sponsor. Evaluation of changes to a variety Relative Maturity grouping will be the responsibility of the sponsor.

Information for assigning of Relative Maturity is available on the GoSoy.ca website at the bottom of the Entry Fee tab section. The following is the reference guide available on the website the entry section:

OSACC use of Relative Maturity for Soybean

In 2010, OSACC (then OOPSCC) made the decision to use Relative Maturity (RM) ratings for soybean maturity, replacing the system of Heat Unit ratings. Relative Maturity is a system whereby new cultivars are compared over years and locations to established cultivars, and RM ratings for the new cultivars are assigned relative to the established cultivars. There are 13 maturity groups (MG) recognized in the Americas ranging from the earliest MG 000 to the latest MG X. In Canada, soybeans in maturity groups ranging from MG 000 to MG III are grown. Each decimal unit is approximately equivalent to one day of maturity, that is, a cultivar rated MG 1.5 is about 5 days later maturing than a cultivar rated MG 1.0 in its region of adaptation.

Rules for assigning a relative maturity

- 1. Cultivars with the same average days to maturity, over several years grown in the same test, should have approximately the same RM rating.**
- 2. Relative maturity ratings cannot be negative.**
- 3. Relative maturity ratings can only have one decimal place. A double zero rating is denoted "00.2", not "0.02".**

Additional information about MG designations is available on GoSoy.ca Sponsor Homepage.

Seed availability concerns will be indicated on Table 1 in the brochure as "Not Available" or "Limited Supply", as designated by the sponsor.

Entering varieties into performance tests is voluntary by the sponsors; a fee is required which varies depending on whether an entry is registered or certified by March 20, or an experimental variety.

All data and variety information should be submitted by November 20 (depending on conditions during harvest), in order to be included in the Ontario Soybean Variety Trials Report. Publication editing will be carried out the following seven days in order to meet the earliest possible publication date. .

7. OSACC Soybean Database and Preparation of Summaries

OSACC has a custom web-based Data Management System (DMS) for maintaining a database of Public test results and for computing performance summaries. Each entry designation is assigned a unique numerical code in the program. For the computer to read a data set from a test, the matching designation for each entry must be in the computer and the data file.

Each spring all soybean cultivars to be tested are entered electronically by the sponsors into the OSACC website database to establish the entry lists for each Public area test.

Each year locations for all Public tests are checked against those in the system and any OSACC approved test locations are entered into the annual guidelines and database.

Annex 1: OSACC 2017 Timeline of Events:

20-Jan	Date for refreshing 2016 OSVT Publication and ViPP program on GoSoy.ca website for registered and certified varieties.
20-Mar	Date for refreshing 2016 OSVT Publication and ViPP program on GoSoy.ca website for registered and certified varieties.
07-Apr	Final date to submit entries on the web site Entry list (Internet)
07-Apr	Final date to submit SCN Entry lists to coordinators (Internet)
14-Apr	Final date for sending all Test Entry seed to seed distributors -- Eskandari, Rajcan and Cober
07-Jul	Invoices for soybean entries to be mailed and emailed to all sponsors
20-Jul	Date for refreshing 2016 OSVT Publication and ViPP program on GoSoy.ca website for registered and certified varieties.
06-Sep	Self-guided Soybean Tour begins. Tour will be self guided format with plot maps and labelled plots in 1st rep available at each test site. Google map locations will be provided in advance on Sponsor Homepages.
29-Sep	Self-guided Soybean Tour ends.
13-Oct	First Draft of Table 1 variety list posted on web site. Sponsors to respond with updated list of changes to Entries and Maturity Group ratings for Table 1 publication.
03-Nov	Final version of Table 1 variety list posted on web site home pages
15-Nov	Final date for MG Coordinators to upload OSVT public test data summaries into database for summarizing and posting on web site OSVT Publication.
15-Nov	Draft copy of Tables 1-6 to be posted on Sponsors Home Page on web site for review and feedback.
20-Nov	Final date for accepting varieties registered by CFIA or have CSGA certification in order to be included in Tables 1-7, for the new 2017 OSVT Publication.
24-Nov	Posting of 2017 OSVT Publication for producers and industry.
05-Dec	Posting of updated 1-5 year averages for each MG zone and ViPP data on gosoy.ca web site.
Jan 25 2018	OSACC Research Committee meeting at 10:00 am. Meetings to be held at Four Points Sheraton, London.
Jan 26 2018	Main Committee meeting of OSACC beginning at 8:30 am.