



Oilseed Yield Enhancement Network Yield Contest 2019 Rules and Protocol

GENERAL

- 1 The 2019 Yield contest is open to any oilseed rape crop. The absolute winner will have the highest yield of grain expressed at 9% moisture content with less than 2% admixture. The 'open' winner will have achieved the highest proportion of the potential grain yield.
- 2 There are two classes of entry into the competition: field yields and research trial yields.
- 3 Field yields can be from whole fields or sub-fields but must be from an area of 2 hectares or more. Entries measuring less than 8 ha will not qualify for submission to the Guinness Book of Records.
- 4 Entry to the competition is by return of Registration Form to Yen@adas.co.uk before 15 June 2019, along with payment (or confirmation that site is sponsored by a Corporate Member). Eligible entrants must provide all information requested on the 'Yield Entry' form, along with a 'grab' sample and a combine grain sample, by 15 September 2019.

YIELD MEASUREMENT

- 5 To be deemed credible, each yield must be determined from a verified area, a verified weight and a verified representative grain sample. Verification requirements for field and research trial yields are described separately below.

Field & Sub-Field Yields

- 6 Harvest of fields/sub-fields must be witnessed by an independent verifier. An independent verifier must be nominated in the Yield Entry, along with their profession and contact details. The verifier is responsible for witnessing the harvesting, weighing and sampling. They cannot be related to the entrant, their employees or employers, and cannot have financial or direct business ties to the farm. NIAB TAG may be able to verify yield at around 20 sites if practical and a on a first-come, first-served basis. Contact Ian Midgley to register your entry.
- 7 Field or sub-field areas must be recorded by precisely marking their main corners on a satellite image or map, obtaining a verifying signature, and submitting this to ADAS. If a Sub-field area is used, the position of its corners in the field must be measured in relation to obvious landmarks (e.g. distance from hedge, gateway, telegraph poles etc.). Ideally length and width of the area should be measured by measuring tape or measuring wheel. Alternatively, corners can be identified on the plan by their GPS locations to within 1 metre (not from a SatNav or mobile phone). Harvest area and grain yield verification will be assisted by providing combine yield monitor printouts or yield maps.
- 8 Weights for field or sub-field entries must be recorded on a weighbridge, and copies of the weighbridge chits sent to ADAS with the Verifier's signature. Yield verification will be assisted by copies of combine yield monitor print-outs or yield maps. 'Sold' grain weights from delivery advice notes after the harvest date will only be accepted if it can be verified that the grain from the whole field was kept separate, and if weights are supported by yield monitor data.
- 9 A representative grain sample (0.5-1kg) must be taken (bulked from each trailer load) and sent in the plastic bag provided to ADAS for determination of moisture content and admixture.

Research Yields

- 10 Research trial yields must be verified by 2 people who may, or may not, be independent of the entrant organisation
- 11 Research trial yields may be from a selected treatment or treatment combinations from any trial. They must be averaged from at least 3 plots covering a total minimum area of 50m². The plots must have been selected before harvest and grab samples taken from each plot, bulked & submitted for analysis. The trial overall must have a coefficient of variation for grain yield of less than 6%. The plots entered must be from a coherent treatment or treatment combination with replication, they cannot simply be chosen from the highest yielding plots in the trial. An ANOVA must be submitted to ADAS with submitted treatment(s) and coefficient of variation identified. The treatments do not have to be disclosed to ADAS; they can be anonymised / given as treatment numbers.
- 12 Research trial plot yields will be calculated from an area including the adjacent path width if the whole width of plot harvested. The length of each individual plot should be measured to nearest 10cm. The plot width should be measured to nearest 1cm from plot centre to plot centre. The cropped width of the plots should be given to nearest 1cm (i.e. from outside row to outside row) along with uncropped or path width. Combine cutter bar width should also be given to nearest 1cm. These lengths and widths must be verified at harvest.
- 13 Weights of fresh grain from each trial plot should be recorded using calibrated plot combine weighing equipment. Copies of the latest weight calibration must be provided, and the weights must be signed by both the entrant and a verifier before submission.



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- 14 Moisture contents from each plot determined immediately after harvest should be provided. A representative grain sample (0.5-1kg) should be bulked from each plot and sent in the plastic bag provided to ADAS for determination of moisture content and admixture.

DATA REQUIREMENTS

Information required on registration

- 15 An independent verifier must be nominated with Entry for field yields, along with their profession, mobile number, and email address. The verifier is responsible for witnessing the harvesting, weighing and sampling. They cannot be related to the entrant, their employees or employers, and cannot have financial or direct business ties to the farm. NIAB TAG may be able to verify yield at around 20 sites if practical and a on a first-come, first-served basis. Contact Ian Midgley to register your entry. Other options for obtaining verifiers are being explored.
- 16 The location of the site must be given by Grid reference. Grid References may be found at <http://www.gridreferencefinder.com/> and right clicking on the field being entered. This will be used to obtain met data and to check soils info.
- 17 Good soil texture estimates are vital to the estimation of yield potentials. See The Fertiliser Manual, Appendix One (copy to right) for how to estimate soil textures. Ideally, soil textures should have been determined by an experienced soil scientist. Stone content can be assessed by comparing with the diagrams below.

Crop information required

- 18 Entrants must provide dates of sowing, green bud just visible (GS3,3) first flower open on main raceme, desiccation, pods no longer green, ripeness to harvest and actual harvest.
- 19 Take images at three locations from above the crop looking vertically down, trying to cover as wide an area as possible and include a sheet of A4 paper on the 2-4 leaf stage photos (so a plant population can be determined).
- 20 A grab sample of the crop must be taken when the crop would normally be desiccated by cutting one plant at ground level (with a hacksaw blade or similar) at eight points throughout the area to be harvested, and posting / sending to ADAS in the labelled paper sack (provided by ADAS). Grab samples from research trials should be bulked from ~3 plants per plot.
- 21 If local rainfall data are not provided, ADAS will obtain rainfall data from the database underlying ADAS-IRRIGUIDE
- 22 Basic agronomic information is requested from all entrants but is not obligatory. Winning entrants will be expected to provide at least some basic information, though product names and rates may be withheld.

ADAS Calculation of Potential Yields

- 23 For each site one potential yield estimate will be provided before harvest based on long-term average weather, and one potential yield estimate will be provided after harvest, based on the harvest year's weather.
- 24 Yield potential estimates will be made by ADAS, according to best available information on incident solar radiation and rainfall

AWARDS

- 25 Gold, Silver and Bronze Awards will be made as follows (prizes not yet determined):
 - Absolute Winner: for highest Field (or sub-field) Yield in 2019.
 - Absolute Winner: for highest Research trial Yield in 2019.
 - Open Winner: Highest percentage of potential yield for Field (or sub-field) in 2019.
 - Open Winner: Highest percentage of potential yield achieved for Research trial (or sub-field) in 2019.
- 26 There is no restriction to the number of sites that can be entered by an entrant. An entrant can win awards for more than one site.
- 27 There is no limit to the number of entries per site, however each site can only win one award in each category
- 28 If an entry has won the highest yield, it may also win the highest percentage of potential yield.



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SUMMARY

Commitments from entrants

- Register and pay (if not sponsored by Corporate Member) by 15 June 2019
- Provide contact details and site location
- Provide verifier details
- Provide soil information
- Provide basic crop information: (variety, sowing date, date green bud just visible (GS3,3), date of first flower open on main raceme, date of desiccation, date of pods no longer green, date of ripeness to harvest and date of actual harvest.
- Provide digital photos taken at leaf 2-4 and at stem extension
- Provide grab samples taken before harvest
- Provide verified measures of harvested area
- Provide verified measures of harvested weight
- Provide representative combine grain sample
- If field entry, send signed 'Yield Entry' sheet, plan, weighbridge tickets, digital photos, grab sample and grain sample by 15 Sept 2019
- If trial entry, send signed 'Yield Entry' sheet, copy of calibration, datafile, digital photos, grab and grain sample by 15 Sept 2019
- Provide 'Agronomy' information (optional for all but obligatory for winners of gold, silver & bronze awards)

What entrants will receive

- Access to YEN website and Newsletters
- Entry into Yield competition
- Protocols for crop sampling & yield measurements, with labelled sample bags
- Attendance at autumn conference to receive site-specific yield report, hear competition results & share ideas
- Each site-specific yield report will include:
 - Soil information including available water holding capacity
 - Average potential yield for site
 - Potential yield for 2019 harvest season
 - Verified actual yield
 - Grain Yield Analysis including:
 - Dates of sowing, date green bud just visible (GS3,3), date of first flower open on main raceme, date of desiccation, date of pods no longer green, date of ripeness to harvest and date of actual harvest
 - Total dry matter per plant (g)
 - Grain dry matter per plant (g)
 - Harvest Index
 - Dry matter per seed (mg (& TGW g))
 - Seeds per pod
 - Pods per m²
 - Total crop Biomass (t/ha)
 - Grain N%, Grain protein %
 - N Harvest Index
 - Grain N offtake (kg/ha)
 - Total N uptake (kg/ha)
 - Photos of crop at leaf 2-4, and at stem extension
 - Brief commentary on how the entered crop performed, explaining yield achieved, noting anything exceptional and suggesting how yield may be improved

What ADAS & partners will do

- Validate soil description against soil survey information
- Collate long term weather data for site
- Collate harvest-season weather data for site
- Calculate potential yield using average weather
- Calculate potential yield using harvest season weather



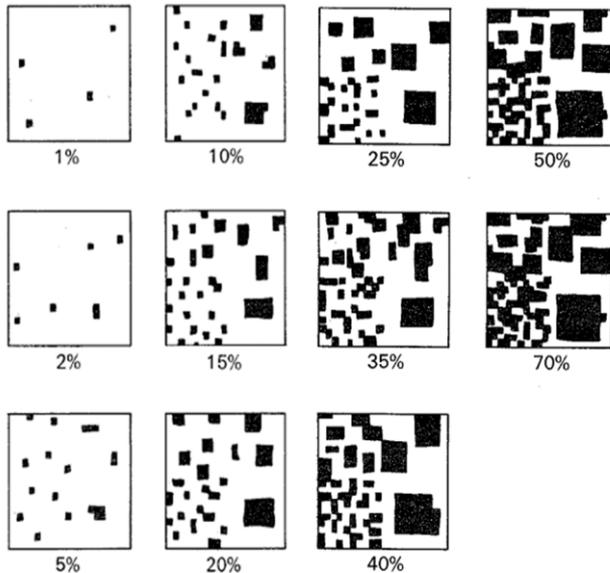
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- Send protocols for crop & yield measures
- Send labelled plastic bag for grain sample
- Send labelled paper sack for grab sample
- Advise on verification arrangements
- Determine grain moisture and admixture of grain sample
- Check areas & weights and calculate combine grain yield
- Process grab samples
- Calculate harvest index, yield components and N uptake
- Collate crop and agronomy information
- Produce brief report for each entry giving yield potentials, yield achieved, crop data collated and analysis of yield
- Identify winners of highest yields and highest percentage of potential yields
- Analyse all data to explain the season's yields in general, to understand how high yields were achieved & suggest how yields may be improved. Present results, findings & awards at November Conference & facilitate sharing of ideas.
- Appendix 1 from The Fertiliser Manual (RB209), Defra 2010
- Assessment of stone content



Example of digital photo

Chart for estimating mottles, stones, nodules etc.



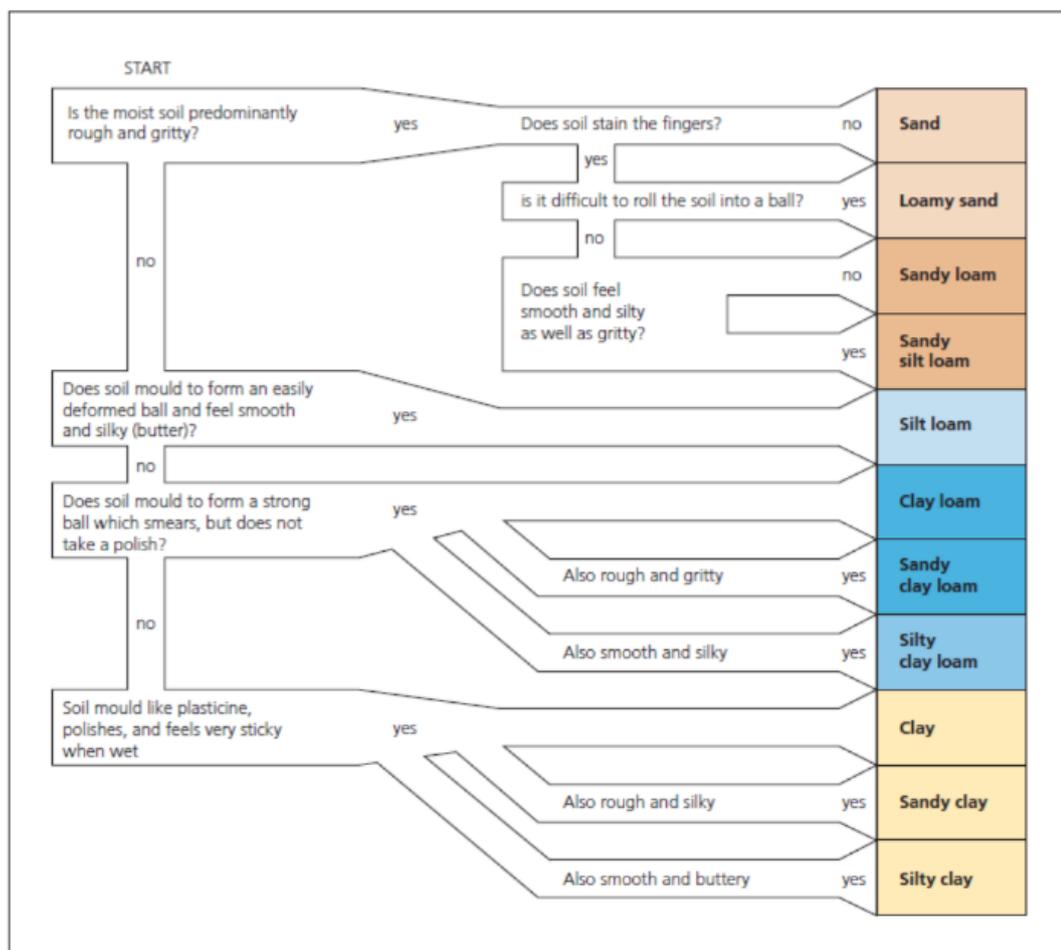
Each quarter of any one square has the same area of black



Assessment of Soil Texture

Accurate measurement of soil texture requires laboratory analysis, but for practical purposes texture can be assessed by hand using the following method:

Take about a dessert spoonful of soil. If dry, wet up gradually, kneading thoroughly between finger and thumb until soil crumbs are broken down. Enough moisture is needed to hold the soil together and to show its maximum stickiness. Follow the paths in the diagram to get the texture class.



A texture triangular diagram, defining the particle size distribution for each named texture class, is given in Appendix D of *Controlling Soil Erosion (MAFF PB4093)*.