



Fall Leaf Lettuce Variety Trial

Farmer-Researchers

| | Farmer(s) | Farm Name | Location |
|---|-------------------------|---------------------------|------------------|
| 1 | Angie Koch | Fertile Ground Farm | St Agatha (West) |
| 2 | Ann Slater | Ann Slater Organics | St Marys (West) |
| 3 | Lise-Anne Léveillé | BeetBox Cooperative Farm | Ottawa (East) |
| 4 | Harold Saunders | Saunders Family Farm | Dunfield (West) |
| 5 | Jon Gagnon | Earth to Table Farm | Millgrove (West) |
| 6 | Laurie and Corey Ahrens | Edible Acres | Dunfield (West) |
| 7 | Norah Quast | Parker Farm | Puslinch (West) |
| 8 | Sarah Judd | Meadow Lynn Market Garden | Simcoe (West) |
| 9 | Hilary Moore | Maplelane Farm | Lanark (East) |

Research Priorities: Seed Production, Varietal Selection and Breeding

EFAO Contact: Rebecca Ivanoff, rebecca@efao.ca

Objective

To document the best fall leaf lettuce across different farms in Ontario during the 2020 season.

Background

The fall slot for lettuce is challenging, as the lettuce has to handle both the heat of the summer and the cold of the fall with all the moisture and temperature variability that is characteristic this time of year. This year, 10 growers from across Ontario - many who participated in last year's trial - will trial five varieties and six types of seed of leaf lettuce in a randomized and replicated trial over their last two planting dates of the season. The farmers opted to trial fewer varieties with more replicates. The farmers will also include one variety from last year in the fall trial so that there is multi-year data.

This trial is in conjunction with a Summer Leaf Lettuce Variety Trial with the same grower group a different list of varieties. You can read last year's fall lettuce variety trial here:

<https://efao.ca/wp-content/uploads/EFAO-Lettuce-2019.pdf>



Varieties Included

This trial includes lettuce 5 varieties (one variety coming from 2 sources), all of which will be transplanted in the field with 2 replicates each at the last 2 lettuce plantings of the season. Each grower will grow all six types of seed.

The seed packet will have “code names” in order to conduct a blind trial. This is used to reduce observation and measurement bias.

Full Variety List for Fall 2020:

| Blind Code | Variety | Type | Colour | DTM | Source | Lot/ Batch # | Utility Patent Granted | Certification | Breeder |
|------------|----------|-----------------------|--------|---------|----------------------|------------------------|------------------------|---------------|-----------------------|
| LF1 | Encino | Leaf (Oak) | Green | 50 Days | High Mowing | 07757 | no | OG | Vitalis Organic Seeds |
| LF2 | Red Mist | Leaf | Red | 40 days | Saanich Organics | IOPA# 1606, 1105, 1620 | no | OG | Vitalis Organic Seeds |
| LF3 | Grazion | Leaf | Green | 52 Days | Johnny's | 64861 | no | OG | Rijk Zwaan |
| LF4 | Magenta | Summer Crisp/ Batavia | Red | 48 days | Johnny's | 64689 | no | OG | |
| LF5 | Ruby Sky | Leaf | Red | 58 Days | Johnny's | 61932 | Yes | OG | Rijk Zwaan |
| LF6 | Red Mist | Leaf | Red | 40 days | Vitalis Organic Seed | 7.700.873 | no | OG | Vitalis Organic Seeds |

Research Plan

| Time | Task | Methods & Measurements or Action Item |
|---------------------------------|--------------|--|
| Mid-July | Seeding | Rebecca will contact you as a reminder |
| Mid-August | Translating | Rebecca will contact you as a reminder |
| September | Observations | Rebecca will contact you as a reminder |
| End of September - Mid- October | Harvest | Rebecca will contact you as a reminder |



| | | |
|------------------------|------------------------|-----------------------------------|
| Deadline October 30 | Submit data and photos | Submit data and photos to Rebecca |
| Before November 15 | Invoice | Send Sarah invoice for farmer-fee |

Planting and Cultivation Recommendations

The table below provides suggestions based on practices discussed in the group. Use the suggestions if they make sense for your farm. For the fall trial last year we suggested the 1st planting to be at the same time as each farm's latest normal fall planting date and then the 2nd planting 1-2 weeks later. The trial should be grown as you would normally grow lettuce in the field for fall harvest, including your normal bed and row spacing.

Please record your planting dates, spacing, and other cultivation practices on this [Field Worksheet](#) and then enter them into these [Data Sheets](#) later in the season

Each of you should have received approximately 100 seeds of each variety. **We suggest that you plant 50 seeds of each variety for each planting.** This way, each farm will have at least 12 plants per replicate for a total of 24 heads per planting.

We have given you at least 50 seeds to sow for each planting, however, we know that lettuce has a hard time germinating in our summer heat. We hope that we get at least 24 seedlings that you can plant 12 per replication.

If you have germination issues and you have between 16-24 heads of a variety (for a single planting), plant about half in one replicate and half in the other replicate:

- 16 = 8 + 8
- 17 = 9 + 8
- 18 = 9 + 9
- 19 = 9 + 10
- 20 = 10 + 10
-
- 24 = 12 + 12

If you have fewer than 16 heads of a variety (for a single planting), plant 10 heads in one replicate and the remainder in the second replicate

If you have fewer than 10 heads, then plant all in one replicate.

In all cases, take notes of the # of heads that go in per planting on the data sheet. And take photos.

| | |
|-----------------------|--|
| Plot size per variety | 12+ heads per section 2 sections per planting = 48+ heads total for the trial. |
| Row and bed spacing | In-row: 12", Between-row: 12-14" |



| | |
|----------------------|---|
| Seeding dates | Mid to end of July (your last fall succession, and then the second planting 1-2 weeks after) |
| Transplanting dates | Mid to end of August |
| Days to harvest | 45-55 (End of September-Beginning of October) |

How to Arrange the Trial

The trial arrangement is flexible as long as you plant at least 2 sections of *at least* 12 heads per section (and you can plant more lettuce if you have space available).

Please observe these best practices as best you can and record what you do:

- For each planting, create two replicate blocks of your trial space by dividing the space in half (see layout below)
- Plots may be distributed in multiple side-by-side beds or planted in one bed (see examples below)
 - In each half, plant the varieties in a random order, either by drawing variety names out of a hat, etc. or randomly choosing the flat to transplant next.
 - Each of the 2 replicate sections should have a blocks of 12-20 heads of each variety; the order of the planting will be different in each section.
- Avoid the edge of the field and the end of the bed when finding a place for the trial.
- Avoid areas with known soil, shade or irrigation differences that would affect some plots more than others. That is, try to plant your trial plot in a homogenous area in your field.
- If possible, plant the trial in a spot where it has the same crop on either side of it.
- Use stakes to label the plots AND draw a field map showing the order and location of varieties. This serves as a backup in case the stakes get lost! Feel free to snap a photo of the layout and send to Rebecca, which is a third back-up!

Examples of field layout:

Example 1: Layout with 2 replicate blocks of 6 varieties (12-20 heads/variety) down a single row. Note: each variety is randomly assigned to a section in each replicate block.

| Replicate block A | | | | | | Replicate block B | | | | | |
|-------------------|-----|-----|-----|-----|-----|-------------------|-----|-----|-----|-----|-----|
| LS5 | LS2 | LS3 | LS4 | LS6 | LS1 | LS4 | LS3 | LS1 | LS5 | LS2 | LS6 |

Bed length →

Example 2: Layout with 2 replicate blocks of 6 varieties (12-20 heads/variety) planted across multiple rows. Note: each variety is randomly assigned to a section in each replicate block.

This layout can also be used within one bed, with two rows of lettuce on each side of the bed.

| Replicate block A | | | Replicate block B | | |
|-------------------|--|-----|-------------------|--|-----|
| LS5 | | LS3 | LS6 | | LS1 |



| | | | |
|-----|-----|-----|-----|
| LS1 | LS6 | LS4 | LS2 |
| LS2 | LS4 | LS2 | LS5 |

Evaluation

On-farm evaluation will consist of rating the varieties according to several traits and recording your observations. We ask that you evaluate the lettuce at a few points during the season, as outlined below.

All these Record Sheets can be found [here](#). They include

- Crop Management Records - once per season
- Germination Rates - once per planting
- Growing Season Observations for each variety per planting-once a week during harvest
- End-of-Season Questions - once per season

These forms are to be used in the field for data collection. Then this data is to be added here in these [Data Sheets](#).

Materials

Please list all the equipment that you need for this project. Indicate “in-kind” under Total Cost for any materials that you already own or have access to. For pre-approved research expenses, for which you will be reimbursed, please indicate cost.

| Material | Quantity Required | Note |
|-------------------------------|--|--|
| Lettuce Seed | 100 seeds of each variety | Rebecca will source and mail to farmer-researchers |
| Plastic T-Stake Field Markers | Four stakes for each variety (for a total of 24 stakes each) | Rebecca will source and mail to those who request them |
| Postage to mail seed | 10 | Envelopes and postage for each farmer-researcher. |

Farmer-fee

For farmer-researchers selling the lettuce: \$250 per farmer, invoiced to EFAO after farmer-researchers submit data.

For farmer-researchers leaving the lettuce in the field until it bolts or is otherwise unmarketable: \$300 per farmer, invoiced to EFAO after farmer-researchers submit data.



Memorandum of Understanding

Farmer-researchers agree to keep an active membership with EFAO throughout the duration of their trial. Reimbursement for research expenses and farmer-fees will be paid to current members only.

Please also refer to efao.ca/farmer-led-research for a **Memorandum of Understanding** of other responsibilities. Specifically refer to sections:

- *What is expected of me as a farmer-researcher?*
- *What support will I receive from EFAO as a farmer-researcher?*

To check the status of your membership, log in here:

<https://efao.z2systems.com/np/clients/efao/login.jsp> or contact Martina, martina@efao.ca.

Acknowledgements

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