

Annual meeting of the European Evaluation Network (EVA) for Lettuce

> 30 March 2020 12:30 – 16:30, online MS Teams



Summary Report of the Meeting

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The meeting substituted for an in-person project meeting on 30-31 March 2020 in Salsomaggiore, and took place on 30 March 2020, 13:00 to 16:30, on MS Teams. The agenda of the meeting is attached as Appendix 1 and the list of participants as Appendix 2.

A number of preparatory documents had been made available to the project partners in advance of the meeting, on MS Teams and the document list is attached to this document as Appendix 3. These included presentations on ECPGR and the EVA networks, on EURISCO and its role within EVA and an example of ongoing evaluation activities on lettuce at CGN in Wageningen, the Netherlands.

1. Introduction

The EVA coordinator Sandra Goritschnig opened the meeting, reminding participants of the expected outcomes of the meeting and highlighting the available documents. She explained the functions of the virtual meeting platform used and although several participants had problems accessing some of the functions, there were no major problems during the duration of the meeting.

Participants responded to a quick pre-meeting survey, indicating that for 67% of them this meeting was their first ever MS Teams virtual meeting. Asked for their expectations from this meeting, participants noted their interest in the exchange of knowledge on lettuce genetic resources, the hope to consolidate interests within the group and to agree on a well-designed and feasible project that would satisfy all partners' interests in a well-defined workplan.

2. Development of detailed project workplan

Chair: L. Maggioni

The majority of the meeting was dedicated to discussions on open questions which required agreement for the development of the project workplan.

Massimiliano Beretta (MB, ISI Sementi), who volunteered to help leading the EVA Lettuce Network, presented a proposed action plan for the project (available in the documents list and on MS Teams), with the intention to focus the evaluation efforts on two main activities which require differential experimental setup: lab tests for *Bremia* resistance on wild lettuce accessions (*L. serriola*), and field trials on a minimum of 150 mostly cultivated lettuce accessions per evaluation site (in 8-10 environments) in order to perform Genome-wide association studies (GWAS) for interesting traits. This proposal would require two different sets of accessions to be selected as well as the commitment of project partners to regenerate sufficient accessions and to provide space and resources to evaluate ~150 accessions in their field sites for the agreed traits.

Discussions on the proposals are summarized below.

2.1 Bremia

• 2.1.1 Bremia - general discussions on experimental setup

<u>MB</u> noted that ISI Sementi has committed to doing laboratory assays for *Bremia* resistance on 100 accessions annually as in-kind contribution to the project, starting in 2020 (depending on the development of the ongoing coronavirus pandemic and related restrictions). He called upon other project partners, especially companies to assist in obtaining relevant *Bremia* strains from the International Bremia Evaluation Board (IBEB), preferably those that might be most interesting for

future breeding efforts (i.e. BL 36 and later). He also noted that genotyping was not foreseen for the accessions screened, as it would be difficult to make any association between *Bremia* resistance and genetic loci in the wild lettuce accessions. He highlighted that the intention was to find new sources of resistance in these lab tests.

<u>Damien Peltier (DP, Vilmorin)</u> noted that *Bremia* resistance could be considered a competitive trait, especially when phenotyping for the newest strains, making it difficult to share the data between companies. He suggested that it may be interesting to study quantitative resistance to *Bremia* in the field, but agreed that this would require a greater amount of space and resources. If doing lab tests, he suggested that results should be confirmed in a ring test and that overlap with other phenotyping efforts, for example those at CGN, should be avoided. He proposed that depending on the number of accessions and strains, Vilmorin could contribute to doing lab tests. He suggested to start at a smaller scale and increase the numbers of accessions over time and suggested that their lab could test 50 accessions for 2 strains in one year, starting in the beginning of 2021.

<u>Robbert van Treuren (RvT, CGN)</u> noted that CGN is currently conducting *Bremia* evaluation on BL 32, 33, 34 and 35 on 800 wild accessions (*L. serriola*), and reminded participants that *L. saligna* is a non-host to *Bremia* and therefore not relevant for this experiment. He suggested to focus in the EVA project on other genebank accessions or other strains (e.g. BL 36), doing the tests at least in duplicate. He also offered that CGN would make available to the EVA project the official *Bremia* differential set of accessions which allows controlling for existing resistances in the tested accessions.

<u>Annette Hägnefelt (AH, NordGen)</u> said that the Nordic genebank can likely provide sufficient seeds for lab tests for a set of ~60 *L. serriola* accessions. It was noted that it should be verified that these do not overlap with the set currently being evaluated at CGN.

• 2.1.2 Selection of *Bremia* strains

<u>RvT</u> informed participants that *Bremia* strains could not be supplied by CGN, they would need to be obtained from companies, or be ordered from the national inspection services, as available. Alternatively, locally adapted strains could be used as they may be most interesting for local breeders.

<u>MB</u> considered it less interesting to evaluate resistance to old *Bremia* strains, as the corresponding resistances are already known, and he preferred to use new candidates among the around 500 strains collected each year by researchers.

<u>AH</u> cautioned that local strains more frequently break the resistance genes that are in the field, noting that all collected strains have the virulence they need to be successful in the field. She suggested that it would be more interesting to find new resistance genes in the wild varieties that could be incorporated into breeding programs. She reported that NordGen have previously tested ca. 300 of their wild accessions with BL 1-16 and around 80 of these were totally resistant to multiple strains. This suggests that new resistances could be identified even with older *Bremia* isolates in a screening approach, as long as these isolates are carefully selected. She did not know whether the proposed wild accessions have already been used by some companies that received them from the genebank.

<u>Giacomo Poluzzi (GP, ISI Sementi</u>) suggested to use the most representative strains from IBEB that have been published and are available.

<u>Anthony Laidet (AL, Gautier Semences</u>) suggested to contact IBEB directly to see which strains could be used in the EVA trials. Alternatively, and as a last resort, strains from the field could be isolated. He agreed with AH's proposal to use older *Bremia* strains to identify new resistances, as

including the differential set in the tests can ensure that an identified resistance is a new gene that hasn't been broken yet.

2.2 Field trials

• 2.2.1 General discussion on experimental setup

<u>MB</u> highlighted again that for doing GWAS at least 150 accessions need to be evaluated per environment, as this number of accessions is needed for the statistical analysis. Based on his experience doing GWAS on lettuce during his PhD, he proposed to plant 5 plants per accession but phenotype only the 3 central plants, to avoid edge effects. This would sum up to 750 plants in total per environment for each partner. Evaluations should be done in up to 10 environments in order to be able to see a significant association with a genotype, considering that environmental effect could be significant. He asked partners whether they would be willing and able to test 150 accessions per evaluation in order to be able to do GWAS.

<u>AL</u> and <u>DP</u> indicated that even though they had not expected to evaluate that many accessions at one time, they could probably do 150 accessions, however, pending confirmation from company management.

<u>Tizian Zollinger (TZ, Zollinger seeds)</u> noted that 150 accessions seemed a large number and that they may be able to evaluate half of that, depending on the environmental setup. In previous evaluations of Swiss genebank material they had usually screened 50 plants per accession and included a repeat.

<u>Charlotte Aichholz (CA, Sativa Rheinau)</u> commented that screening only 5 plants per accession seemed very little and noted that typically they would screen 20 plants. She inquired about the proposed layout of the experimental plots in order to reduce a border effect. Including a border variety would increase the total amount of plants to more than 750 and a space requirement of around 100 m².

<u>Filippos Papadopoulos (FP, American Farm School AFS, Thessaloniki)</u> welcomed the initiative and noted the interest of his institute in the project, although they are fairly new to this field. AFS can offer to contribute field sites in Thessaloniki and Crete, digital equipment to monitor field conditions and human resources.

<u>Tanja Gerjets (TG, GFPi, Germany)</u> noted that her organization represents German breeding companies and therefore she would first need to ask the companies how much they can contribute to the project. She also noted that most of these companies are multinationals, doing their lettuce breeding activities outside of Germany, so it might be easier to contact them directly.

The proposed experimental setup (5 plants of 150 accessions per evaluation site) seemed feasible to most partners, depending on the traits chosen.

• 2.2.2 Field evaluation (traits and methodology)

MB introduced the discussion on the suggested four traits proposed by more than one project partner: Flowering time/bolting, weight, leaf anthocyanin content and seed colour. The latter would be a useful control trait to ensure accessions are not mixed up during the experiment.

General consensus was expressed on evaluating bolting and anthocyanin content. <u>AH</u> proposed that bolting could be measured as time length from transplanting to harvest and that heading or not heading types could be tested. She also noted that weight is not considered most critical by breeders and suggested that perfect heads (i.e. marketable yield) would be a better indicator and better trait for the market. <u>DP</u> confirmed that weight would not be informative for non-heading

varieties. <u>MB</u> suggested that instead of weight, one could measure the head size after a specific time, using weighing only for heading types, where it could be an interesting trait. <u>CA</u> said that Sativa Rheinau would be interested in heading and suggested to focus on certain types of lettuce for the field evaluation (e.g. Batavia) and recommended that photos should be shared for the accessions in addition to the scoring of the traits.

Upon consideration that planting a large set of accessions in the field would be an occasion to observe more than just three or four traits and thus better characterize the diversity of the accessions, the meeting opened a discussion on the need to decide whether the common objective could be a GWAS study as proposed (few key traits to be tested on a large panel of accessions at the same time, suggested ~150 for best results), or rather characterize the existing diversity (several traits, but without the need to test so many accessions at the same time in each environment).

A GWAS study was clearly appealing for ISI Sementi and for Gautier. <u>RvT</u> reminded partners of the need to make sure, for the GWAS methodology, that the selected accession set does not have too much genetic variability in terms of lettuce typologies. He explained that it is possible to correct for population structures when using different types of lettuces as long as enough lines for the different typologies are used and pointed out that choosing material with some existing information (e.g. on seed colour, anthocyanin content, heading type) as internal controls would guarantee better success in the GWAS analysis.

Even though one goal of the project's proposal is to obtain information on genotype X phenotype association that could be useful in breeding, it was also acknowledged that it might be better initially to evaluate or characterize quantitative traits, possibly associated with climate change, in different environments. This approach could be more feasible for project partners and could also help build enough information for a second stage of the project in which GWAS would step in.

It was also proposed to split the 150 accessions between different experiments, including the same control varieties in each, as well as a common set of accessions in every trial to normalize the data, so that the experiments could be compared. However, the feasibility of this approach for GWAS should be verified with supporting literature and it was unclear how many varieties, or how many plants in how many replicates would need to be tested to identify an environmental effect.

An additional point to be resolved was the desired resolution of the genotyping, since it would depend on the genotyping approach and the diversity of the accessions. It was agreed to discuss this issue at a later stage.

Overall, a good level of consensus was registered within the group on the fact that it would be interesting and feasible to aim at a wide characterization of a limited number of the same genebank accessions repeated in several environments in Europe. As a starting point to select the characterization descriptors and to guarantee comparability of trials, the <u>CPVO protocol for</u> <u>DUS testing of lettuce</u> could be considered, keeping in mind that a feasible and acceptable balance needs to be decided between number of accessions, plants per accession and traits to be easily scored.

• 2.2.3 Environments for field trials

It was noted that the more different locations could be used for the evaluation experiments, the better, even though different years and seasons (spring and autumn) could also be accounted for different 'environments' in the statistical analysis.

<u>DP</u> confirmed that Vilmorin could carry out evaluation in the North of France. He hoped to be able to start a trial in autumn 2020. However, due to the ongoing coronavirus pandemic and related restrictions, field trials may have to be postponed.

<u>CA</u> noted that depending on the coronavirus situation, Sativa Rheinau might be able to do evaluations in autumn 2020 but could definitely evaluate in 2021 in their field sites in Switzerland.

<u>MB</u> said that ISI Sementi may be able to contribute to field trials in Italy, since the *Bremia* experiment has been reduced, but needed to confirm with company management.

<u>FP</u> confirmed that AFS could do evaluations on field sites in Thessaloniki and Crete, Greece, starting in autumn 2020.

<u>AL</u> confirmed that Gautier Semences would not be able to do field trials this year but could start in early spring 2021 in their field site in southern France.

<u>TZ</u> noted that Zollinger seeds could start evaluations in Switzerland in autumn 2020.

Other partners such as Enza Zaden (Netherlands), German breeders and other companies would also be welcome to join the evaluation exercise.

• 2.2.4 Accessions and multiplications

Partners agreed to select accessions based on traits chosen. The genebank partners in the EVA lettuce project (INRAE, CGN, KIS, NordGen) were asked to note how many seeds of selected accessions they could provide and when. Genebank representatives noted that for some accessions sufficient seed (>500 seeds) may already be available for immediate start of evaluations, while for others a regeneration step needs to be planned before evaluations can be done.

It was noted that multiplications need to be started soon, in order to regenerate seeds for field trials in spring 2021. LM noted that there was a need to act fast in choosing accessions and finding volunteers to do multiplications. He asked whether partners wanted to start with evaluating the available accessions in 2020 or first reproduce accessions in 2020 for evaluations in 2021.

Provision of accessions

<u>Jeremy Salinier (JS, INRAE)</u> confirmed that INRAE would be able to provide sufficient seed for field evaluation for the accessions indicated in the list, some of which may have already been characterized at INRAE in France, but not in different countries. He noted that the list also includes some *L. serriola* accessions that have not yet been characterized for *Bremia*. INRAE would not carry out evaluations.

<u>AH</u> noted that NordGen can only provide wild accessions of *L. serriola* for *Bremia* lab tests. She noted that for most accessions enough seeds for the lab tests are already available and indicated that they were unable to multiply accessions in 2020.

<u>RvT</u> confirmed that CGN can provide 100 seeds per accession and said that other partners would need to multiply them for field trials.

<u>Jelka Šuštar Vozlič (JSV, KIS)</u> noted that she had not yet suggested accessions but could contact other genebanks in the ECPGR Leafy Vegetables Working Group for their input.

<u>TZ</u> offered to consult with the Swiss genebank. His company had previously characterized 40 lettuce accessions in 2018 and those could also be available for the EVA project.

Multiplication of accessions

<u>AH</u> said that under ideal conditions 20g of seeds can be harvested per plant but noted that seeds from at least seven plants need to be collected to preserve the diversity within landraces. She said that the lettuce type needs to be considered and provided examples for seed production in Sweden, where iceberg lettuce takes 6 months to produce seed whereas butterhead is quicker.

She also noted that for seed reproduction a different protocol needs to be followed as compared to evaluation.

<u>MB</u> suggested that propagation and multiplication could be done at a smaller scale in greenhouses, using small pots to enhance bolting and thus produce seeds faster in smaller amounts. This approach might produce enough seeds for the evaluations. He also proposed that the project could start with phenotyping accessions for which sufficient seeds are already available and multiply others in the meantime. He asked project partners to indicate how many accessions they would be able to multiply for the project.

<u>Gaël Briand (GB, Gautier)</u> confirmed that Gautier cannot propagate lettuce in 2020, but would do both multiplication and evaluation in 2021, starting in the spring.

<u>CA</u> said Sativa Rheinau could not to propagate in 2020 but suggested they could start multiplication early in 2021. She also noted that they preferred to do field evaluations in autumn, in order to also screen for *Bremia* in the field. Alternatively, she suggested that they could do evaluation trials in May 2021 and use the plants for propagation afterwards by transferring them to the greenhouse.

 \underline{TZ} said Zollinger seeds could multiply 10-15 accessions, sowing in March and harvesting in June 2021. He suggested to synchronize multiplication and evaluation with accessions that are already available noting that he would prefer to evaluate all accessions together if possible. If necessary, separate sets could be considered.

<u>LM</u> suggested to follow both approaches: to start evaluations on existing material for which sufficient seeds are available and to reproduce those accessions that are not available in sufficient quantity for the next cycle.

3. Next steps

Based on the discussions during the virtual meeting and input from the project partners, the following agreements, action points and open questions have been identified (grouped by *Bremia* and field trials):

3.1 Bremia

Agreements

ISI Sementi (Italy) and Vilmorin (France) will be doing lab tests on 50 *L. serriola* accessions (annually?) with BL 36 and 2 novel *Bremia* isolates (from IBEB, to be determined), starting in 2020 (ISI) or 2021 (Vilmorin).

Sufficient controls will be included in the tests , i.e. the *Bremia* differential set of accessions provided by CGN (max 100 seeds per accession), as the goal is to screen for new resistance sources.

Sufficient seeds for lab tests (~100) can be provided by NordGen, and maybe also INRAE. However, additional rounds of evaluation (which have not been agreed on) as well as repeat experiments will require regeneration of new selections of *L. serriola* accessions as well as the differential set and other controls.

• Action points

| Ac | tion item | Responsibility | Due date |
|----|--|------------------------|--------------|
| 1. | Selection of 50 accessions available from NordGen (list of 60 accessions). <i>NOTE: there</i> <i>are also</i> L. serriola <i>accessions available from</i> <i>other genebanks (within the <u>EURISCO</u> <u>catalogue</u> more than 1500 are available), which could be multiplied and used in following years.</i> | A. Hägnefelt | 15 May 2020 |
| 2. | Review the selection and ensure that there is no overlap with ongoing evaluations at CGN | R. van Treuren | 15 May 2020 |
| 3. | Provide the seed to the testing labs at ISI Sementi and Vilmorin (100 seeds per accession to both). | A. Hägnefelt | 30 June 2020 |
| 4. | Provide information on the <i>Bremia</i> differential set of accessions, and if possible, sufficient seeds to the labs doing the testing (i.e. 100 seeds per accession to both Vilmorin and ISI Sementi) | R. van Treuren | 30 June 2020 |
| 5. | Contact IBEB to obtain two relevant <i>Bremia</i> strains, ensuring they can be shared with the labs doing the evaluations | Volunteer | 30 June 2020 |
| 6. | Compare and share <i>Bremia</i> lab protocols, to ensure consistent experimental approach, also make available for other partners | M. Beretta, D. Peltier | 30 June 2020 |

• Open question for future discussions

Are partners interested in testing 50 accessions for *Bremia* resistance annually in a rolling circle approach? Current plans could be considered a pilot and could continue with additional *L. serriola* accessions available from genebanks. These may, however, require regeneration in 2020-2021 for which volunteers would be needed.

3.2 Field trials

Agreements

Partners agreed that it would be beneficial to evaluate as many accessions as possible at the same time in one environment, noting that space availability is a limiting factor and influencing the experimental design. Most partners considered the proposed experimental setup of evaluating 3 out of 5 plants for 150 accessions feasible (i.e. plots of 750-800 plants, pending confirmation), but noted that extensively phenotyping fewer accessions (i.e. more plants per accession in the field) would perhaps be preferable in the beginning, with genotyping added later in the project.

Partners agreed to select interesting traits based on the descriptors as defined by UPOV or the <u>CPVO technical questionnaire</u>, considering also the <u>minimum descriptors</u> as defined by the

ECPGR Leafy Vegetables WG. Bolting/flowering time, leaf anthocyanin content and seed colour were considered interesting traits to be complemented by others from the descriptor list.

Partners agreed to focus on cultivated lettuce accessions for the field trials and to include in their selections considerations on the lettuce type (e.g. heading vs. non-heading).

Partners agreed that accessions would be selected based on the final list of traits. A decision on whether to regenerate accessions before starting field trials or starting with accessions that have sufficient seeds available has not been made.

<u>MB</u> agreed to revise the action plan for field trials based on the meeting discussions and present a new proposal to the project partners for their consideration.

Action points

| Action item | Responsibility | Due date |
|--|---------------------------|---------------|
| Provide feedback on revised field trial proposal prepared by M. Beretta (see separate document) | All interested evaluators | 30 April 2020 |
| 8. Share quick and easy protocol for regeneration in pots/greenhouse conditions | M. Beretta | 30 April 2020 |
| Select all traits that you are interested in and would be able to score during the evaluation, based on minimum descriptors and CPVO | All evaluators | 30 April 2020 |
| Report your capacity for field evaluations in terms of space (available m²) and time/possible repetitions (year and season) for the duration of the project (2020-2022) | All | 30 April 2020 |
| Report your capacity for seed regeneration for accessions for field evaluations (preferably prior to 2021). | All | 30 April 2020 |
| Report for which of their accessions sufficient seed are currently available for field evaluations (estimate need minimum 500 seeds for ~10 environments; provide a list of these by category, landrace, cultivar, crop type, if possible) | Genebanks | 30 April 2020 |

• Open questions for future discussions

- Which controls should be included in the field trials and are sufficient seeds (from the same lot) available?
- Which genotyping method and conditions (density of markers, provision of material, selection of external provider etc.) should be selected for the project?
- Based on experimental setup chosen for field trials, is there room to initiate work on a second round of evaluations (the EVA project aims to kickstart rolling circle evaluation schemes that would allow generating data on a large portion of European crop accessions)?

Appendix 1. Meeting agenda

PRE-MEETING

| Video/ppt | Background and overview of the ECPGR Evaluation Network EVA | L. Maggioni |
|-----------|--|-------------------------------------|
| Video/ppt | Update on current status and activities in EVA Network | S. Goritschnig |
| ppt | Current status of evaluations of CGN lettuce accessions | R. von Treuren |
| Video/ppt | EURISCO: ensuring integration of data in special intranet environment for EVA | S. Weise |
| Documents | Proposal for action plan Drafts available for: Proposal of traits selected Workplan 2020 Roles and responsibilities of partners Cooperation Agreement | <i>M. Beretta</i> S. Goritschnig |

30 March, 12:30-16:30 (Venue: MS Teams)

| 12:30 – 13:00 | Connecting to MS Teams – technical assistance if needed | |
|---------------|---|--------------------|
| | Welcome | |
| 13:00 – 13:05 | Welcome and introduction of platform and available files/tools | S. Goritschnig |
| 13:05 – 13:15 | Introduction of participants | All on whiteboard |
| | Development of detailed project workplan | Chair: L. Maggioni |
| 13:15 – 13:45 | Review of project proposal, current activities in the EVA Network for Lettuce and proposal for action | M. Beretta |
| | Discussion to reach agreement on: | |
| 13:45 – 14:15 | Traits selection of traits of interest | All |
| 14:15-14:45 | Accessions number of accessions to be evaluated general selection of accessions | All |
| 14:45-15:00 | Break | |
| 15:00-15:30 | Workplan: roles and responsibilities of each project partner need and volunteers for multiplication of accessions | All |

| To note | Following discussions will be postponed: genotyping protocol and data analysis pipeline ontologies for traits to be evaluated standard experimental protocols | |
|---------------|--|----------------|
| 15:30 – 16:00 | Review of draft workplan, cooperation agreement, timelines and deliverables Define next steps | S. Goritschnig |
| 16:00 - 16:30 | Q&A | |
| 20.00 | SOCIAL DISTANCING DINNER | |

POST-MEETING (MADE AVAILABLE ONLINE)

| Documents | Formulation of Cooperation Agreement for EVA Lettuce | |
|--|--|------------------------------------|
| | Finalizing: Project workplan Roles and responsibilities Deliverables 2020 Cooperation agreements | S. Goritschnig with input from all |
| | Practical guidance on experimental procedures | |
| Documents/ Evaluation protocols for traits of interest for field trials: videos Standard protocols Video tutorials on practical evaluation Template data collection form | | S. Goritschnig with input from all |
| Documents | Laboratory assays for <i>Bremia</i> disease resistance Standard protocols Template data collection form | G. De Angelis |

Appendix 2. List of participants

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Appendix 3. Documents list

(note that documents made available before and during the meeting are available in the EVA Lettuce shared documents folder on MS Teams).

| Title | Doc type | Content | Author |
|---|-------------|--|-----------------------------------|
| Agenda project meeting 20200330 | pdf | Meeting agenda | S. Goritschnig |
| EVA ECPGR intro slides only | pdf | Background and Overview of the ECPGR Evaluation Network EVA | L. Maggioni |
| EVA ECPGR intro voiceover | ppsx | Background and Overview of the ECPGR Evaluation Network EVA, narrated by L. Maggioni | L. Maggioni |
| EVA lettuce overview slides only | pdf | Update on current status and activities in EVA network | S. Goritschnig |
| EVA lettuce overview voiceover | ppsx | Update on current status and activities in EVA network, narrated by S. Goritschnig | S. Goritschnig |
| EVA_Lettuce_RvT_Evaluations | pdf | Current status of evaluations of CGN | R. von Treuren |
| CGNaccessions_20200330 | | lettuce accessions. | |
| EURISCO_EVA_lettuce v0.1_20200326 | pdf | EURISCO: ensuring integration of data in special intranet environment for EVA | S. Weise |
| M Beretta EVA lettuce proposal for action plan_20200326 | pdf | Proposal for action plan | M. Beretta |
| EVA lettuce March 2020 | ppt | Presentation of proposed action plan | M. Beretta |
| EVA lettuce draft timeline 20200330 | xlsx | Time plan for project activities based on proposed action plan | S. Goritschnig |
| EVA lettuce traits proposals 20200326 | pdf | Summary of traits proposed by project partners, | S. Goritschnig |
| EVA lettuce roles and responsibilites_20200326 | xlsx | Form for partners to indicate their capacity and availability for project activities | S. Goritschnig |
| Draft Cooperation Agreement EVA network lettuce | pdf | Cooperation agreement for EVA network, partly modified according to the needs of EVA lettuce, requires revision and agreement of partners | L. Maggioni and S. Goritschnig |