

# EUBerry WP1 Deliverable 1.2

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# Deliverable 1.2

- Integrated sets of characterised germplasm for strawberry, raspberry, blackberry, currant and blueberry across the climatic zones of the EU identified in D1.1
- Development of a core set of germplasm with breeding utility for defined traits
- The integration of multisite/multiyear phenotypic data either developed/collected within EUBerry, or residing with the various EUBerry partners with breeding interests
- Dissemination avenues to other (non-EUBerry) breeders
  - Eventual goal is the improvement of breeding populations across the EU area, leading to superior cultivars in the medium-long term



# Why do we need this?

- Sharing of information between breeders within the EUBerry project
- Information source for breeders outwith the EUBerry project
- Enhanced collaboration between breeders
  - ▶ Privately owned breeding companies
- Diversity within breeding programmes
  - ▶ Lack of diversity is becoming a serious issue for many breeders
  - ▶ Interspecific crosses included in D1.1



# Getting the information together

- Use of database developed by P2
  - Identification of best sources of key traits
  - Further refinement possible
    - ★ eg. 'enhanced quality' can be broken down further
- Input from breeders
  - ★ Crucial – can identify potentially good and less good parents
    - *cf.* blackcurrant – Ben Tirran

# Composition of recommended list

- For each crop, divisions made into regions
  - ▶ North: Norway, UK, Finland
  - ▶ Central: France, Poland, Germany
  - ▶ South: Italy, Spain, Portugal
- Breeding utility separated into yield, overall quality and pest/disease resistance
- Essential that all germplasm can actually be obtained and used by breeders outwith the EUBerry project
- Input from breeders
  - ▶ Elite breeding lines not represented elsewhere in EUBerry

# Fragaria



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| Region          | Trait                       | Germplasm               | Country of Origin | Availability for breeding     | Contact                         |
|-----------------|-----------------------------|-------------------------|-------------------|-------------------------------|---------------------------------|
| Southern Region | Yield                       | Fontanilla              |                   | Commercially available        |                                 |
|                 |                             | Santaclara              |                   | Commercially available        |                                 |
|                 |                             | CS13/2                  | Spain             |                               |                                 |
|                 |                             | Adria                   | Italy             |                               |                                 |
|                 |                             | Alba                    | Italy             |                               |                                 |
|                 | Quality                     |                         |                   |                               |                                 |
|                 |                             | Tudia                   | Spain             | Commercially available        |                                 |
|                 |                             | CS9/2                   | Spain             |                               |                                 |
|                 |                             | Nora                    | Italy             |                               |                                 |
|                 |                             | Antea                   | Italy             |                               |                                 |
|                 | Pest and Disease Resistance |                         |                   |                               |                                 |
|                 |                             | Nora                    | Italy             |                               |                                 |
|                 |                             | Asia                    | Italy             |                               |                                 |
|                 |                             |                         |                   |                               |                                 |
| Central Region  | Yield                       | Elianny                 | The Netherlands   | Commercially available        | Visser                          |
|                 |                             | Lucy                    | UK                | Commercially available        | Meiosis UK                      |
|                 |                             | T-03021-12 (Grandarosa) | Poland            | Commercially available        | Research Institute of Hort., PL |
|                 |                             | T-03066-01              | Poland            | Breeding only                 | Research Institute of Hort., PL |
|                 |                             | Clery                   | Italy             | Commercially available        | CIV/Salvi Vivai                 |
|                 |                             | CIR 107                 | France            | pending                       | CIREF                           |
|                 |                             | Alba                    | Italy             | Commercially available        | NewFruits                       |
|                 |                             | Christina               | UK                | Commercially available        | Meiosis UK                      |
|                 | Quality                     |                         |                   |                               |                                 |
|                 |                             | Palomar                 |                   |                               |                                 |
|                 |                             | Lucy                    | UK                | Commercially available        | Meiosis UK                      |
|                 |                             | Ciflorette              | France            | Commercially available        | CIREF                           |
|                 |                             | CIR112                  | France            | Commercially available        | CIREF                           |
|                 |                             | Tecla                   | Italy             | Commercially available        |                                 |
|                 |                             | Candiss                 | France            | Commercially available        | CIREF                           |
|                 |                             | T-04052-06 (Pink Rosa)  | Poland            | State trials prior to release | Research Institute of Hort., PL |
|                 |                             | T-03021-12 (Grandarosa) | Poland            | Commercially available        | Research Institute of Hort., PL |

# Rubus



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| Region   | Trait                       | Germplasm             | Country of Origin | Availability for breeding | Contact                      |
|----------|-----------------------------|-----------------------|-------------------|---------------------------|------------------------------|
| Southern | Yield                       | Kweli                 |                   |                           |                              |
|          |                             | Amira                 |                   |                           |                              |
|          | Any additional suggestions? |                       |                   |                           |                              |
|          |                             |                       |                   |                           |                              |
|          | Quality                     | Kweli                 |                   |                           |                              |
|          |                             | Himbo Top             | Switzerland       | Commercially available    | Hauenstein                   |
|          | Any additional suggestions? |                       |                   |                           |                              |
|          |                             |                       |                   |                           |                              |
|          | Pest/Disease Resistance     |                       |                   |                           |                              |
|          |                             | Anything at all here? |                   |                           |                              |
|          |                             |                       |                   |                           |                              |
|          |                             |                       |                   |                           |                              |
| Central  | Yield                       | Polka                 | Poland            | Commercially available    |                              |
|          |                             | Polesie               | Poland            |                           |                              |
|          |                             | M-2009-01             | Poland            | Breeding only             |                              |
|          |                             | M-2009-04             | Poland            | Breeding only             |                              |
|          |                             | Tulameen (F)          | Canada            | Commercially available    | for Germany: Kraege          |
|          |                             | Erica                 | Italy             | Commercially available    | Sant'Orsola                  |
|          | Quality                     | Polka                 | Poland            | Commercially available    |                              |
|          |                             | Polesie               | Poland            |                           |                              |
|          |                             | Heritage (F)          | USA               | Commercially available    |                              |
|          |                             | Meeker (F)            | USA               | Commercially available    |                              |
|          |                             |                       |                   |                           |                              |
|          | Pest/Disease Resistance     |                       |                   |                           |                              |
|          |                             | Anything at all here? |                   |                           |                              |
|          |                             |                       |                   |                           |                              |
|          |                             |                       |                   |                           |                              |
| Northern | Yield                       | Glen Fyne (F)         | UK                | Commercially available    | Mylnefield Research Services |
|          |                             | JHI 0435D-3 (F)       | UK                | Breeding only             | Mylnefield Research Services |
|          |                             | JHI 0304F-6 (F)       | UK                | Breeding only             | Mylnefield Research Services |
|          |                             | JHI 0019E2 (F)        | UK                | Breeding only             | Mylnefield Research Services |
|          |                             | Glen Ericht (F)       | UK                | Commercially available    | Mylnefield Research Services |
|          |                             |                       |                   |                           |                              |
|          | Quality                     | Tulameen (F)          | Canada            | Commercially available    | Mylnefield Research Services |
|          |                             | JHI 0435D-3 (F)       | UK                | Breeding only             |                              |
|          |                             | JHI 0534RB-1 (F)      | UK                | Breeding only             |                              |
|          |                             | JHI 00123A7 (F)       | UK                | Breeding only             |                              |
|          |                             |                       |                   |                           |                              |
|          | Pest/Disease Resistance     | Glen Ericht (F)       | UK                | Commercially available    | Mylnefield Research Services |
|          |                             | JHI 0485K-1 (F)       | UK                | Breeding only             | Mylnefield Research Services |
|          |                             | JHI 0304F6 (F)        | UK                | Breeding only             | Mylnefield Research Services |

# Ribes



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| Region   | Trait                   | Germplasm    | Country of Origin | Availability for breeding | Contact                           |
|----------|-------------------------|--------------|-------------------|---------------------------|-----------------------------------|
| Central  | Yield                   | Gofert       | Poland            | Commercially available    | Mylnefield Research Services      |
|          |                         | Ben Hope     | UK                | Commercially available    |                                   |
|          |                         | Tsema        | The Netherlands   | Commercially available    |                                   |
|          | Berry size              | Tihope       | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          |                         | Bona         | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          |                         | Tines        | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          |                         | 13B/11       | Poland            | Breeding only             | Research Institute of Hort., PL   |
|          |                         | B7/3/1       | Poland            | Breeding only             | Research Institute of Hort., PL   |
|          |                         | C7/2/10      | Poland            | Breeding only             | Research Institute of Hort., PL   |
|          |                         | D11/3/2      | Poland            | Breeding only             | Research Institute of Hort., PL   |
|          | Quality                 | Gofert       | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          |                         | Polares      | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          |                         | Sofiyewskaya | Ukraine           | Commercially available    | Institute of Hort., Kiev, Ukraine |
|          |                         | C3/3/12      | Poland            | Breeding only             | Research Institute of Hort., PL   |
|          |                         | B11/1/7      | Poland            | Breeding only             | Research Institute of Hort., PL   |
|          |                         | C11/3/1      | Poland            | Breeding only             | Research Institute of Hort., PL   |
|          | Pest/Disease resistance | Tihope       | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          |                         | Bona         | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          |                         | Tisel        | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          |                         | Polares      | Poland            | Commercially available    | Research Institute of Hort., PL   |
| Northern | Yield                   | Gagatai      | Lithuania         | Commercially available    | Institute of Hort., Babtai, LT    |
|          |                         | Tisel        | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          |                         | Mara         |                   |                           |                                   |
|          |                         | Ben Hope     | UK                | Commercially available    | Mylnefield Research Services      |
|          |                         | JHI P8/5/24  | UK                | Breeding only             | Mylnefield Research Services      |
|          |                         | JHI 9998-1   | UK                | Breeding only             | Mylnefield Research Services      |
|          | Berry Size              | Big Ben      | UK                | Commercially available    | Mylnefield Research Services      |
|          |                         | JHI P8/5/24  | UK                | Breeding only             | Mylnefield Research Services      |
|          |                         | Joninai      | Lithuania         | Commercially available    | Institute of Hort., Babtai, LT    |
|          |                         | Mara         |                   |                           |                                   |
|          |                         |              |                   |                           |                                   |
|          | Quality                 | Ben Finlay   | UK                | Commercially available    | Mylnefield Research Services      |
|          |                         | JHI 94120-1  | UK                | Breeding only             | Mylnefield Research Services      |
|          |                         | JHI 9154-3   | UK                | Breeding only             | Mylnefield Research Services      |
|          |                         | Ben Hope     | UK                | Commercially available    | Mylnefield Research Services      |
|          |                         | Tisel        | Poland            | Commercially available    | Research Institute of Hort., PL   |
|          | Pest/Disease Resistance | Ben Finlay   | UK                | Commercially available    | Mylnefield Research Services      |
|          |                         | Ben Gairn    | UK                | Commercially available    | Mylnefield Research Services      |
|          |                         | JHI P8/5/24  | UK                | Breeding only             | Mylnefield Research Services      |
|          |                         | Mara         |                   |                           |                                   |
|          |                         | Tauriai      | Lithuania         | Commercially available    | Institute of Hort., Babtai, LT    |
|          |                         | Tisel        | Poland            | Commercially available    | Research Institute of Hort., PL   |

# Dissemination

- When complete, the list will be uploaded onto the EUBerry website
  - ✦ Includes a note of where the material can be obtained
    - Trialling agreements etc.
- It will remain a live document, with further input by breeders until early 2015
  - ✦ Clear gaps, eg. lack of primocane raspberry in the northern region
- Discussion required as to how we keep this (and other EUBerry databases) current and relevant



# Acknowledgements

- Input was received from UPM (P1), InHort (P2), CIREF (P6), JHI (P3), GRC (P10)
- Still time to add to this list.....

