# ECOBREED

## WP4 SOYBEAN

Kristina Petrović

**Ljubljana, 27–28 Jun 2018**

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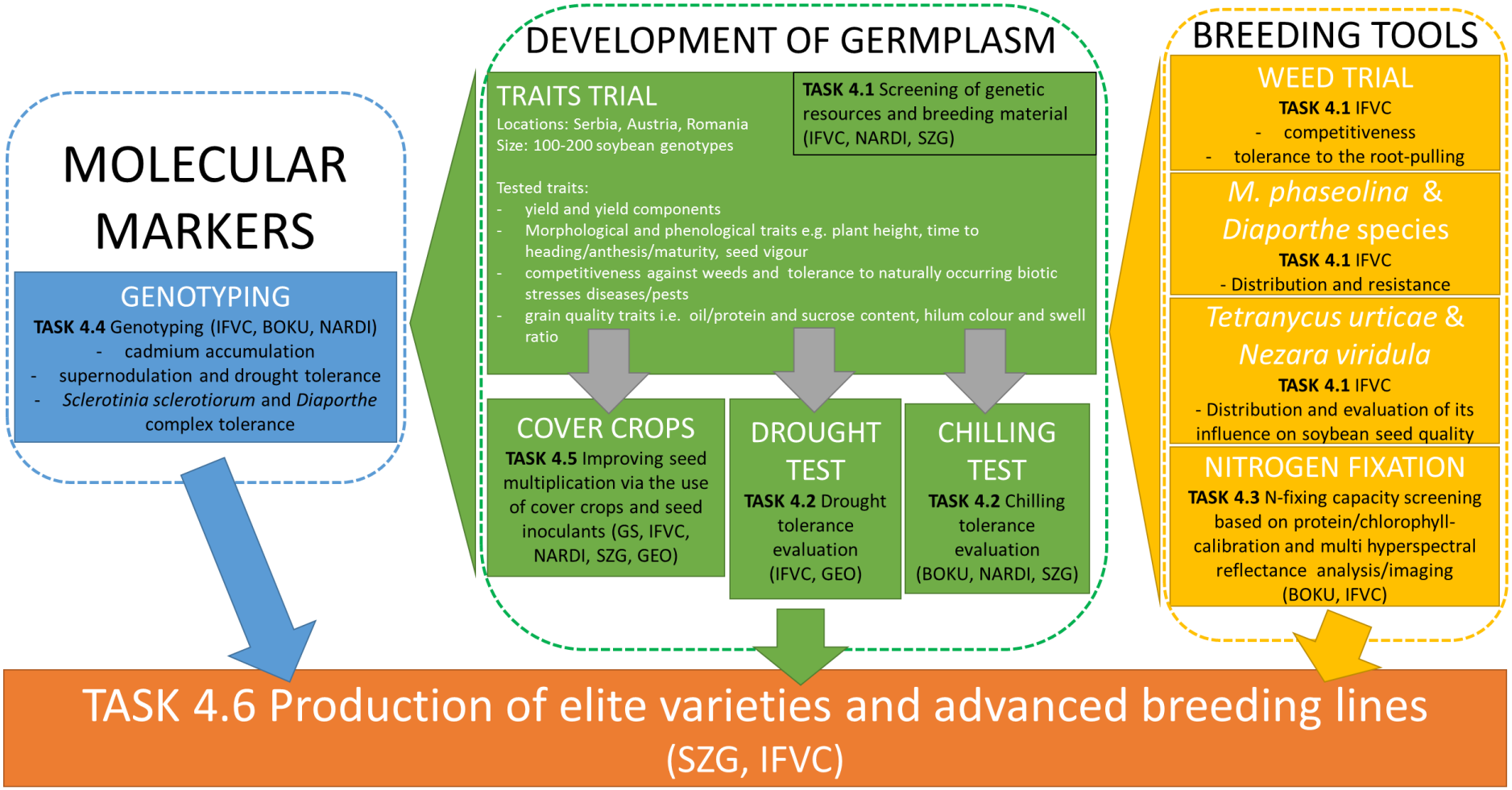
# WP4 activities

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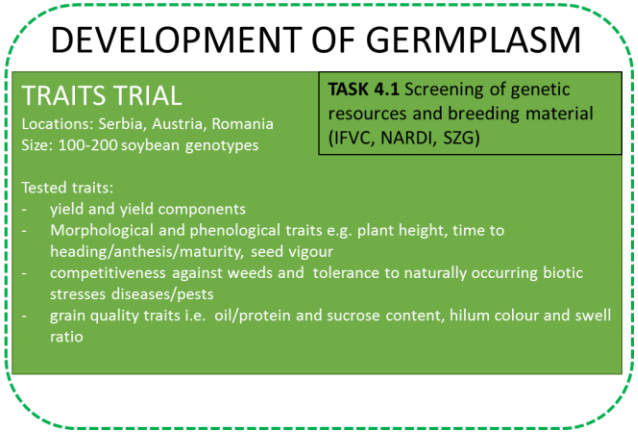
# TASK 4.1 Screening of genetic resources and breeding material (months 13-48)

Partners: IFVC, NARDI, SZG




- **Input data**

Survey over organic producers about problems in production and desirable soybean variety traits

- **Harmonization and selection of soybean traits** desirable for organic production, based on input data and breeder's experience

- **Accession lists** – Number of accessions?

- **Common methodology** for trials will be developed in cooperation with all trial participants (IFVC, NARDI, SZG)

**To be defined till the end of April 2019**

**D4.1** Phenotypic data management system produced for partners (M12)

**D4.2** Report on phenotypic characterisation of soybean (M54)

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# TASK 4.1 Screening of genetic resources and breeding material (months 13-48)

Partners: IFVC, NARDI, SZG

DEVELOPMENT OF GERMPLASM

TRAITS TRIAL

Locations: Serbia, Austria, Romania
Size: 100-200 soybean genotypes

**TASK 4.1** Screening of genetic resources and breeding material (IFVC, NARDI, SZG)

Tested traits:
- yield and yield components
- Morphological and phenological traits e.g. plant height, time to heading/anthesis/maturity, seed vigour
- competitiveness against weeds and tolerance to naturally occurring biotic stresses diseases/pests
- grain quality traits i.e. oil/protein and sucrose content, hilum colour and swell ratio

• **Seed multiplication** of selected genotypes and **seed delivery** to partners

Detail protocol will be developed, regarding each country phytosanitary rules.

**No later than 30 November 2019?**

**2020 - First year trial**

**2021 - Second year trial**

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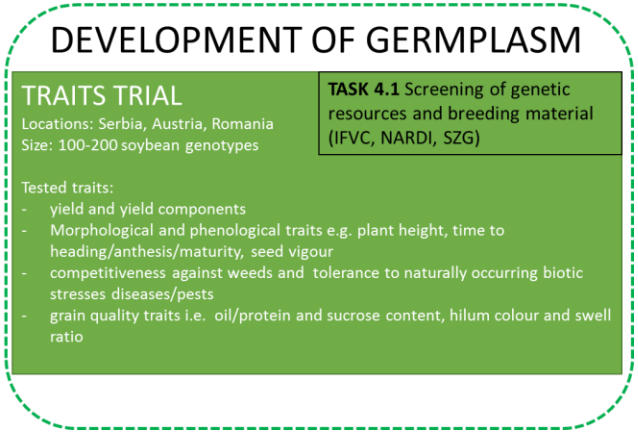
# TASK 4.1 Screening of genetic resources and breeding material (months 13-48)

Partners: IFVC, NARDI, SZG




• Seed samples from trials will be sending to IFVC for **quality analysis** (NIR) and will be **tested on seedborne *Diaporthe* species**.

**No later than 30 November after each year trial?**

**2020 & 2021**

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# TASK 4.1 Screening of genetic resources and breeding material (months 13-48)

**2020 & 2021**

Partners: IFVC, NARDI, SZG

## DEVELOPMENT OF GERMPLASM

### TRAITS TRIAL

Locations: Serbia, Austria, Romania
Size: 100-200 soybean genotypes

**TASK 4.1** Screening of genetic resources and breeding material (IFVC, NARDI, SZG)

Tested traits:
- yield and yield components
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- grain quality traits i.e. oil/protein and sucrose content, hilum colour and swell ratio

## BREEDING TOOLS

*M. phaseolina* & *Diaporthe* species
**TASK 4.1** IFVC
- Distribution and resistance

*Tetranycus urticae* & *Nezara viridula*
**TASK 4.1** IFVC
- Distribution and evaluation of its influence on soybean seed quality

**Scale for disease and pests scoring should be define till the end of March 2020?**

**D4.6** Report on modeling the distribution, economic damage caused by the two spotted spider mite and southern green stink bug (M60)

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# TASK 4.1 Screening of genetic resources and breeding material (months 13-48)

Partners: IFVC, NARDI, SZG

**2021**

## DEVELOPMENT OF GERMPLASM

### TRAITS TRIAL

Locations: Serbia, Austria, Romania
Size: 100-200 soybean genotypes

**TASK 4.1** Screening of genetic resources and breeding material (IFVC, NARDI, SZG)

Tested traits:

- yield and yield components
- Morphological and phenological traits e.g. plant height, time to heading/anthesis/maturity, seed vigour
- competitiveness against weeds and tolerance to naturally occurring biotic stresses diseases/pests
- grain quality traits i.e. oil/protein and sucrose content, hilum colour and swell ratio

## BREEDING TOOLS

### WEED TRIAL

**TASK 4.1** IFVC

- competitiveness
- tolerance to the root-pulling

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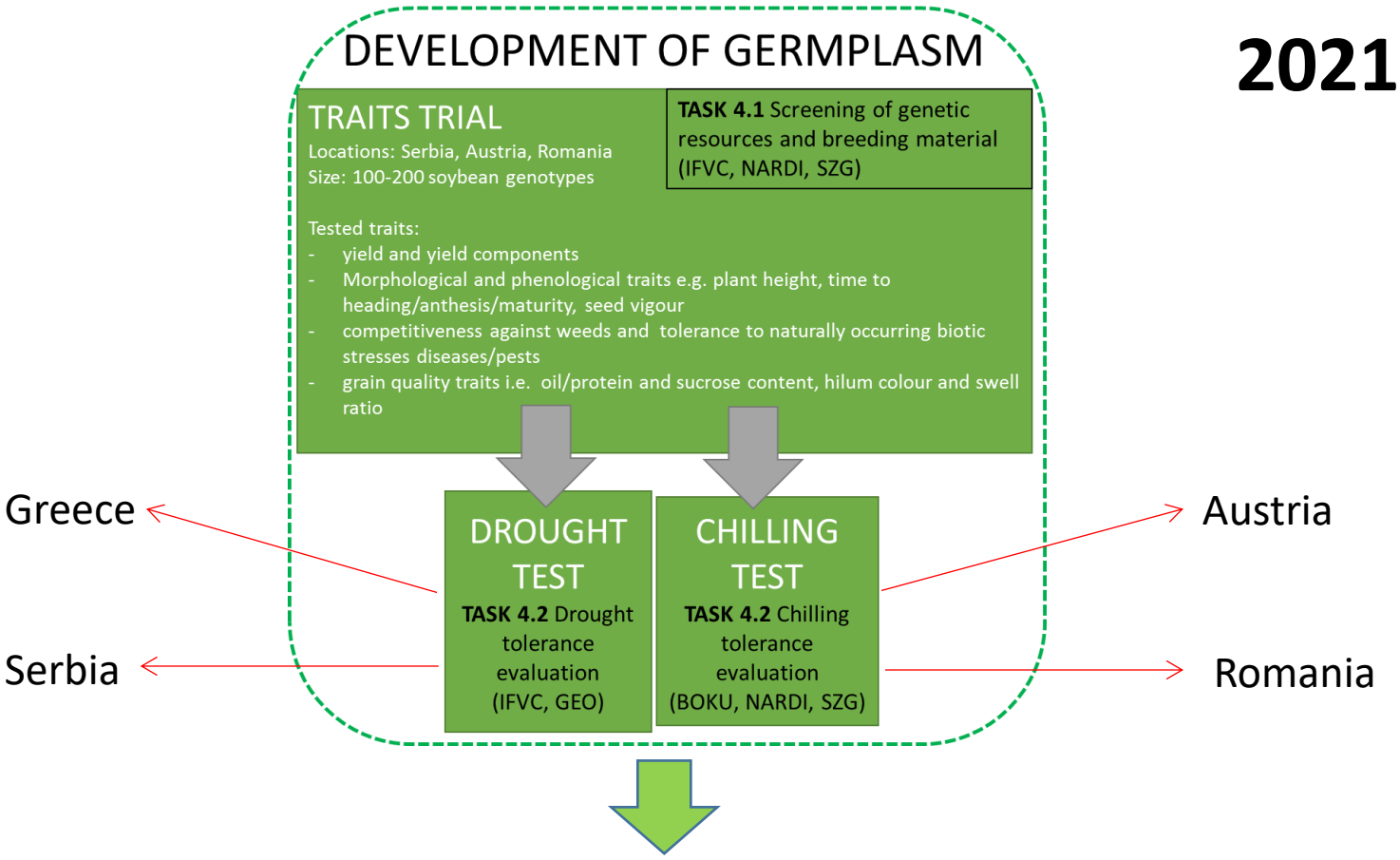
# TASK 4.2 Abiotic stress (months 25-48)

Partners: IFVC, BOKU, NARDI, GEO, SZG

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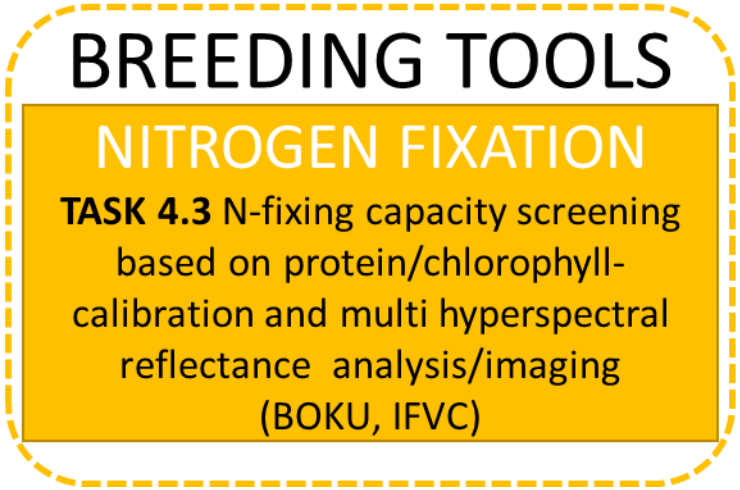
# TASK 4.3 N-fixing capacity screening based on protein/chlorophyll-calibration and multi/hyperspectral reflectance analysis/ imaging (months 13-48)

Partners: BOKU, IFVC




**D4.5** Identification of field-based phenotyping techniques and/or plant traits correlated to increased N fixation efficiency (M54).

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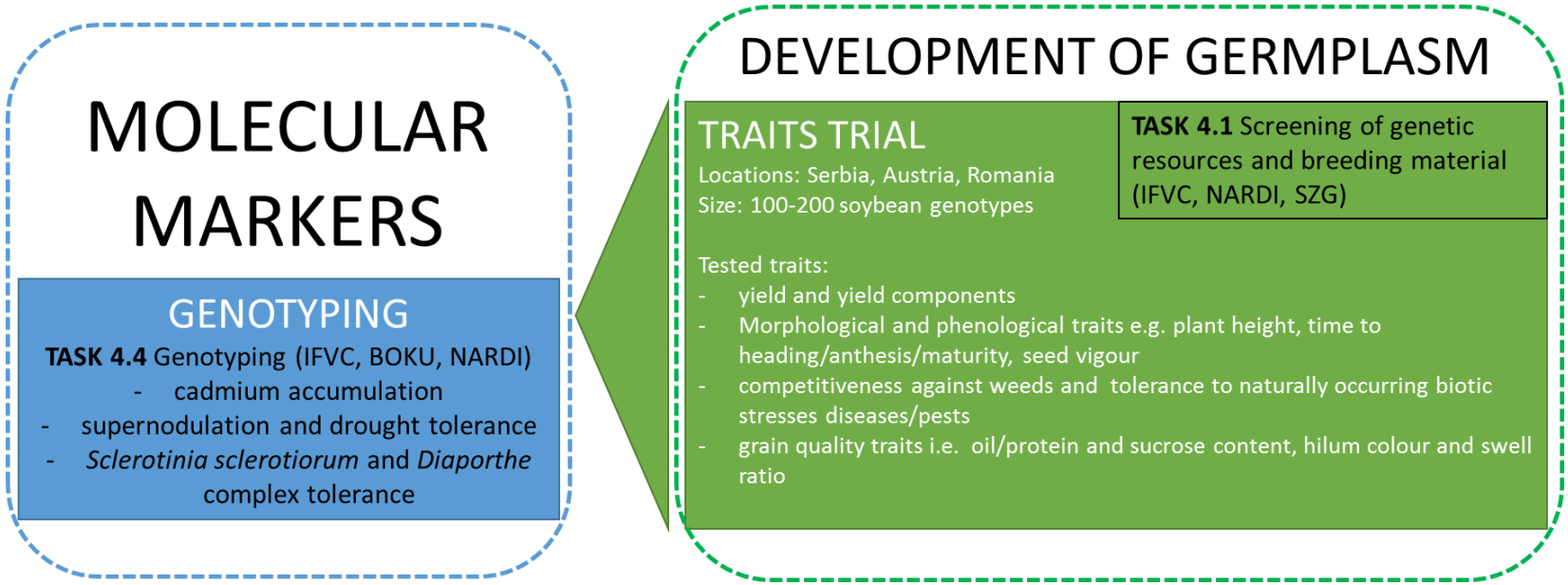
# TASK 4.4 Genotyping (months 13-36)

Partners: IFVC, BOKU, NARDI




**Optimization of reactions and methodology have to be defined till the end of April 2020?**

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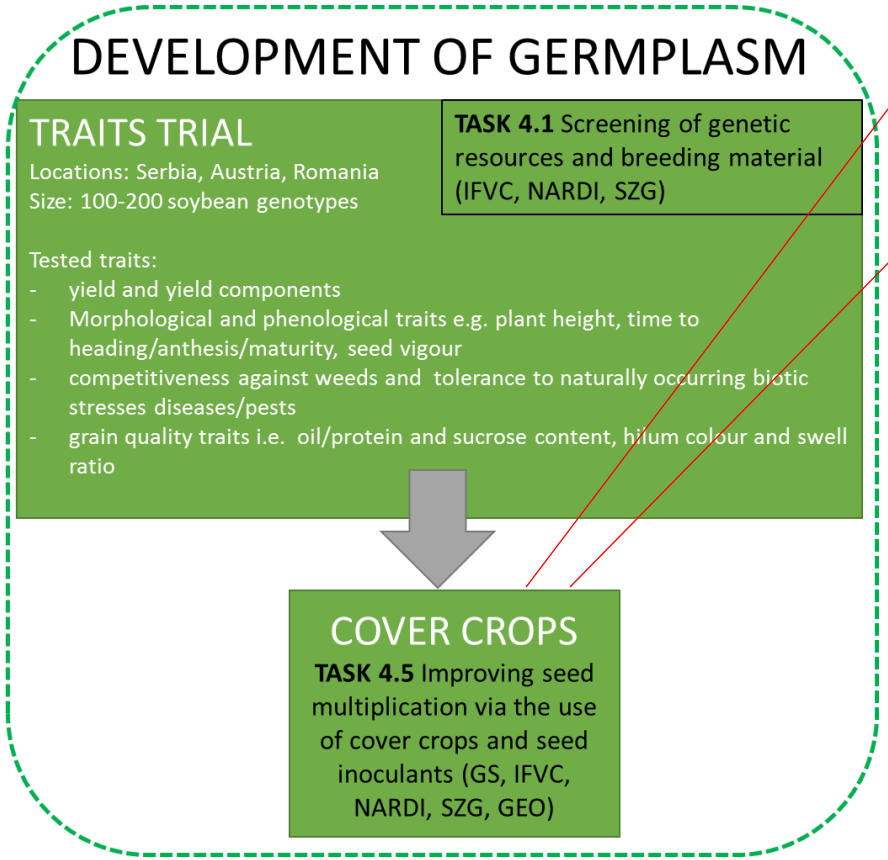
# TASK 4.5 Improving seed multiplication via the use of cover crops and seed inoculants (months 25-48)

**2021**

Partners: GS, NARDI, IFVC, SZG, GEO




**Greece**

2019/2020 Seed multiplication of *Vicia sativa*

**Serbia**

2019/2020 Seed multiplication of *Avena sativa*

**D4.4** Report on recommendations for improving seed multiplication via the use of cover crops and seed inoculation treatments (M54)

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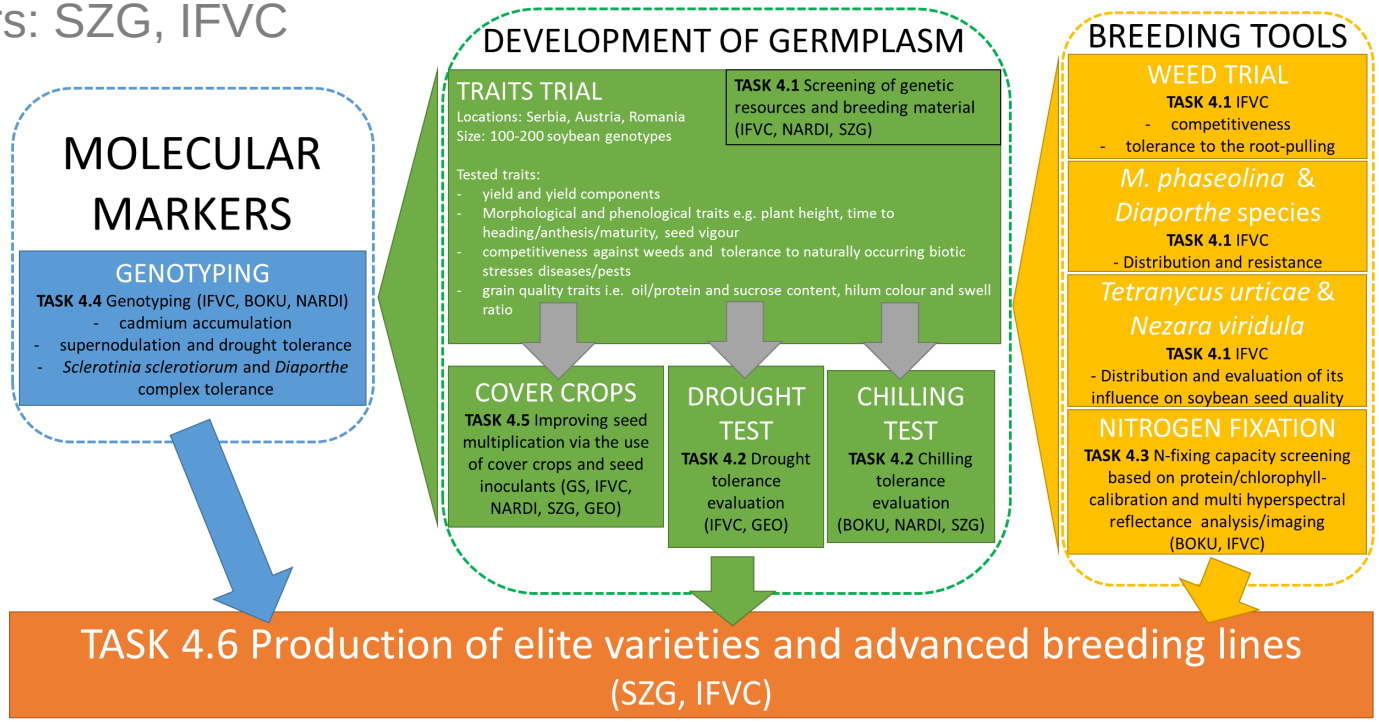
# TASK 4.6 Production of elite varieties and advanced breeding lines (months 13-60)

Partners: SZG, IFVC




**D4.7** Production of new soybean lines suitable for organic production (M60)

**D4.8** Final publishable report on WP4 (M 60)

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# Milestones

First year

- M7 Multiplication of seed for phenotyping - 12m
- M9 Phenotyping data management system sent to partners - 12m
- M21Identification of potential advanced phenotypic screening methods and development of protocols for N fixation to be evaluated - 12m
- M12 Selection of suitable markers for screening, sharing of protocols between partners, allocation of traits between partners - 13m
- Order of cover crop seed for seed multiplication evaluation M18 24m
- Selection and delivery of treatments (innocula and seed dresings) to be used in seed multiplcation evaluation studies M19 24m
- Selection of sub-set of core collection to be used in abiotic stress screening M20 24m
- Selection of varieties to use in FPT and start of seed multiplication M22 24m
- Multiplication of seed for FPT and breeding activities M8 36m
- Establishment of segregating populations for specified traits M13 36m
- Formation and distribution of CCP to farmers M24 36m
- Advanced breeding lines available for further selection and varietal development M17 48m

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