

Plantum

**Pre-competitive research on gene
bank material for commercial use**
Anke van den Hurk



- **Plant breeding and genetic resources**
- **Use of gene bank material**
- **Pre-competitive research**

- **Consequences of ABS legislation on plant breeding and the use of gene bank material**

- **Some considerations for gene banks**

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Plantum PLANT BREEDING PROCESS



PLANT BREEDING uses plant genetic resources as the foundation for creating new plant varieties.

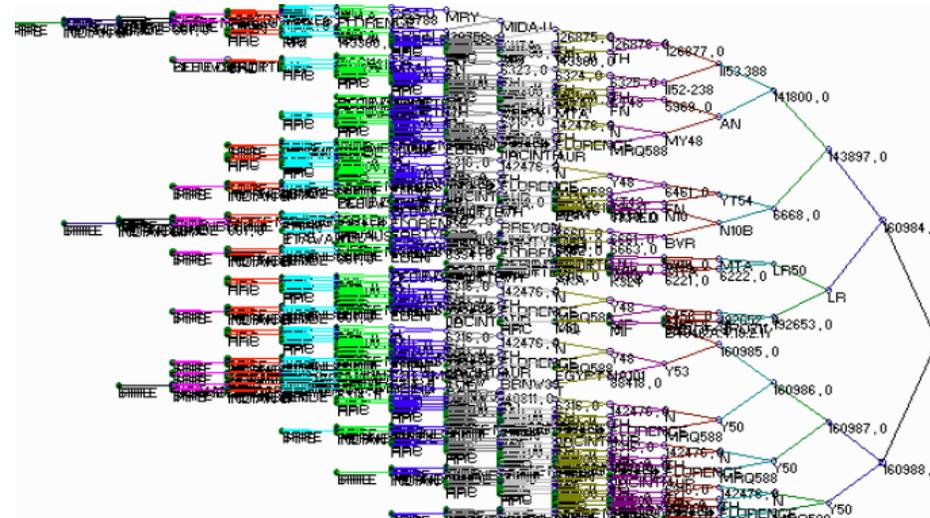
This process may take from 5 to 16 years and its benefits for society last a lifetime.



Recombination

- Modern varieties } 90-95%
- Research materials
- Landraces
- Wild relatives } 5-10%

Hundreds to thousands of crosses per year



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Plantum GENETIC RESOURCES: PRE-COMPETITIVE RESEARCH

New germplasm is needed because new traits are desired:

- by consumers (taste, convenience etc.)
- by the processing industry (shelf life, commodity market, new processing techniques etc.)
- by the grower (new growing techniques, new pest resistances, demands for lower input etc.)



Convenience food for consumers

in *tense*

World's first
non-leaking
tomatoes



New processing techniques



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Plantum GENETIC RESOURCES: PRE-COMPETITIVE RESEARCH

Reasons to join forces in a collaboration:

- Traits with a complex genetic background (e.g. chemical composition in tomato, digestibility in feed crops)
- Traits that are difficult to measure (e.g. taste in tomato, Nasonovia-resistance in lettuce)



Plantum GENETIC RESOURCES: PRE-COMPETITIVE RESEARCH

Reasons to join forces in a collaboration:

- Traits that are rare (e.g. new resistances against *Peronospera* in spinach)
- Traits that are urgently needed (e.g. CGMMV resistance in cucumber, Bremia-resistance in lettuce)



Plantum GENETIC RESOURCES: PRE-COMPETITIVE RESEARCH

Advantages:

- Bigger collections can be screened
- More reliable results by duplicate tests
- Cost sharing for complex and expensive research
- More efficient use of the seed stocks



Plantum GENETIC RESOURCES: PRE-COMPETITIVE RESEARCH

Results:

- ➡ Improved chances of finding a new trait
- ➡ Improved speed to market, for the benefit of the grower



Organization:

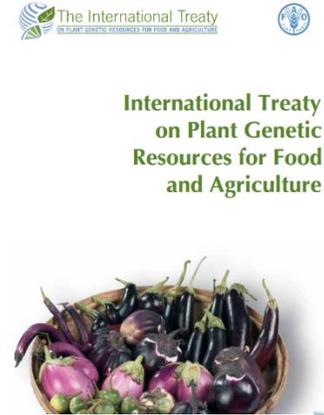
- Coordination by Plantum:
 - Contracts
 - Administration
- CGN:
 - Supply of accessions (cultivated and wild)
 - Definition of test protocols
 - Collection and sharing of evaluation data
- Seed companies:
 - Input to define the most important targets
 - Input of technical knowledge to define the test protocols
 - Execution of the tests

- Plant breeding and genetic resources
- Use of gene bank material
- Pre-competitive research

- **Consequences of ABS legislation on plant breeding and the use of gene bank material**

- Some considerations for gene banks

Plantum AND THEN THERE WERE...



Multiple legal frameworks

High complexity

New obligations to comply with

National ABS laws

20.5.2014 EN Official Journal of the European Union

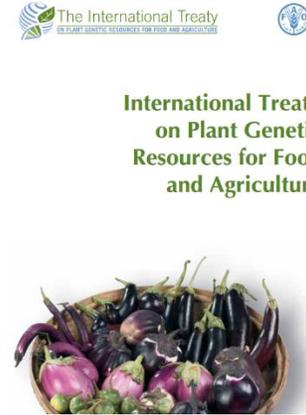
REGULATION (EU) No 511/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union (Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,



Plantum THE CHALLENGES OF ABS COMPLIANCE...



Multiple legal frameworks

High complexity

New obligations to comply with

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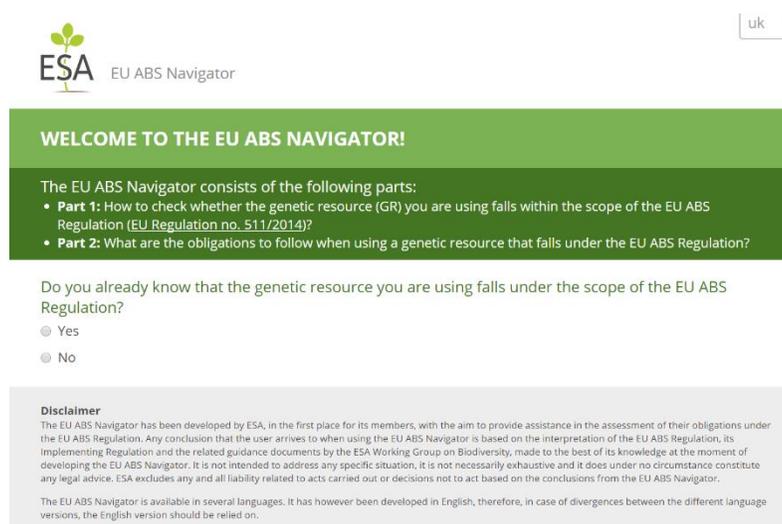
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General conclusions with regard to ABS for the breeding sector

- ❖ ABS is a complex issue: difficult to grasp & difficult to implement for breeders in their day-to-day work
- ❖ As an association of users, ESA tries to assist its members through the development of tools and materials facilitating understanding & compliance



Plantum WHAT TOOLS ARE THERE TO HELP?

The image shows a screenshot of the Euroseeds website homepage. The top navigation bar is dark purple and contains the Euroseeds logo on the left and several menu items: Home, About this website, About ABS, About the tools, EU legal framework, ABS Glossary, Quick Links, and an ACCOUNT icon on the right. The main content area features a large, close-up photograph of golden wheat stalks. Below the main image is a green navigation bar with several buttons: HIDE, EU ABS LAW DATABASE, EU ABS NAVIGATOR, EUROSEEDS RECOMMENDATIONS DOCUMENT, ABS IN NON-EU COUNTRIES, and PROVIDE YOUR FEEDBACK. A red circle highlights the buttons from 'EU ABS LAW DATABASE' to 'EUROSEEDS RECOMMENDATIONS DOCUMENT'. To the right of these buttons is a featured article titled 'DISCOVER THE EUROSEEDS SEEDING BENEFITS PAGE!' with a small image and a brief description. At the bottom left, there are social media icons for Facebook, Twitter, LinkedIn, and YouTube. A 'Privacy policy' link is located at the bottom right.

Navigation Bar:

- Home
- About this website
- About ABS
- About the tools
- EU legal framework
- ABS Glossary
- Quick Links
- ACCOUNT

Main Content Area:

Edit

Navigation Bar (circled in red):

- HIDE
- EU ABS LAW DATABASE
- EU ABS NAVIGATOR
- EUROSEEDS RECOMMENDATIONS DOCUMENT
- ABS IN NON-EU COUNTRIES
- PROVIDE YOUR FEEDBACK

Featured Article:

DISCOVER THE EUROSEEDS SEEDING BENEFITS PAGE!

Explore the voluntary benefit-sharing activities the seed sector is actively engaged in.

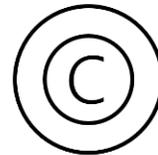
Social Media:

- Facebook
- Twitter
- LinkedIn
- YouTube

Footer:

Privacy policy

- Triggered by EU ABS Regulation & Guidance documents
- Step-by-step guide for breeders
- 8 steps in total
- for each step, detailed explanation and examples included where relevant
- Annexes with additional information
- Visual overview
- Living document = evolves with legislation & official guidance; as well as future developments



RECOMMENDATIONS FOR EUROSEEDS MEMBERS

ON

**HOW TO ACCESS AND USE GENETIC
RESOURCES IN COMPLIANCE WITH
THE EU ACCESS & BENEFIT SHARING
(ABS) REGULATION**

- Interactive tool
- Aim – get an assessment on whether or not GR is falling under the scope of the ABS Regulation
- If yes – what obligations apply
- Exists in 5 languages
- With embedded explanations & links to more information

ABS GLOSSARY ▾ uk ▾ ✕

 Euroseeds
Embracing Nature

EU ABS Navigator

WELCOME TO THE EU ABS NAVIGATOR!

The EU ABS Navigator consists of the following parts:

- **Part 1** How to check whether the genetic resource (GR) you are using falls within the scope of the EU ABS Regulation ([EU Regulation no. 511/2014](#))?
- **Part 2** What are the obligations to follow when using a genetic resource that falls under the EU ABS Regulation?

If you wish to use the EU ABS Navigator with regard to a specific GR, you can type in the reference number or name of the GR here. If you fill in this field, the reference number or name of the GR will be shown on the overview of your enquiry.

Do you already know that the genetic resource you are using falls under the scope of the EU ABS Regulation?

Yes
 No

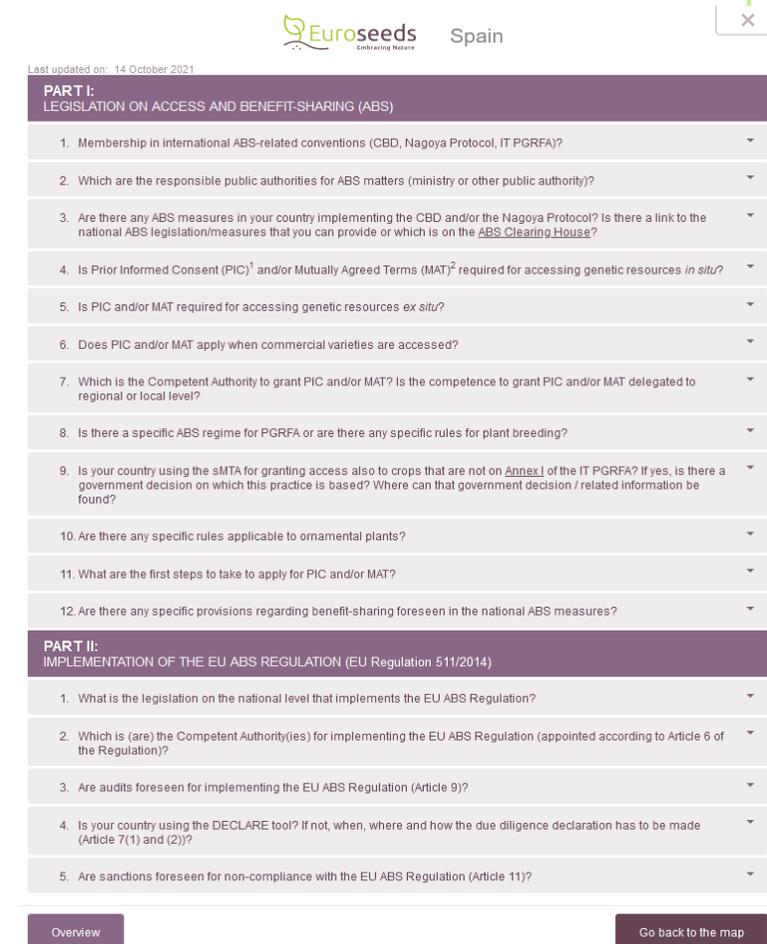
Disclaimer

The EU ABS Navigator has been developed by Euroseeds, in the first place for its members, with the aim to provide assistance in the assessment of their obligations under the EU ABS Regulation. Any conclusion that the user arrives to when using the EU ABS Navigator is based on the interpretation of the EU ABS Regulation, its Implementing Regulation and the related guidance documents by the Euroseeds Working Group on Biodiversity, made to the best of its knowledge at the moment of developing the EU ABS Navigator. It is not intended to address any specific situation, it is not necessarily exhaustive and it does under no circumstance constitute any legal advice. Euroseeds excludes any and all liability related to acts carried out or decisions not to act based on the conclusions from the EU ABS Navigator.

The EU ABS Navigator is available in several languages. It has however been developed in English, therefore, in case of divergences between the different language versions, the English version should be relied on.

Plantum THE EU ABS LAW DATABASE

- Standard set of questions on national ABS legislation and implementation of the EU ABS Regulation
- Fore each EU Member State
- Continuously updated with new information or changes in national laws



The screenshot displays the Plantum website interface for Spain. At the top right, the Euroseeds logo and the text "Spain" are visible. Below the header, a purple bar indicates "PART I: LEGISLATION ON ACCESS AND BENEFIT-SHARING (ABS)". The main content area consists of 12 numbered questions, each with a dropdown arrow. The questions cover various aspects of national ABS legislation, including international conventions, responsible authorities, implementation of the CBD and Nagoya Protocol, PIC and MAT requirements, and specific rules for plant breeding and ornamental plants. Below the 12 questions, another purple bar indicates "PART II: IMPLEMENTATION OF THE EU ABS REGULATION (EU Regulation 511/2014)". This section contains 5 numbered questions regarding national legislation, competent authorities, audits, the DECLARE tool, and sanctions. At the bottom of the page, there are two buttons: "Overview" on the left and "Go back to the map" on the right.

Last updated on: 14 October 2021

PART I:
LEGISLATION ON ACCESS AND BENEFIT-SHARING (ABS)

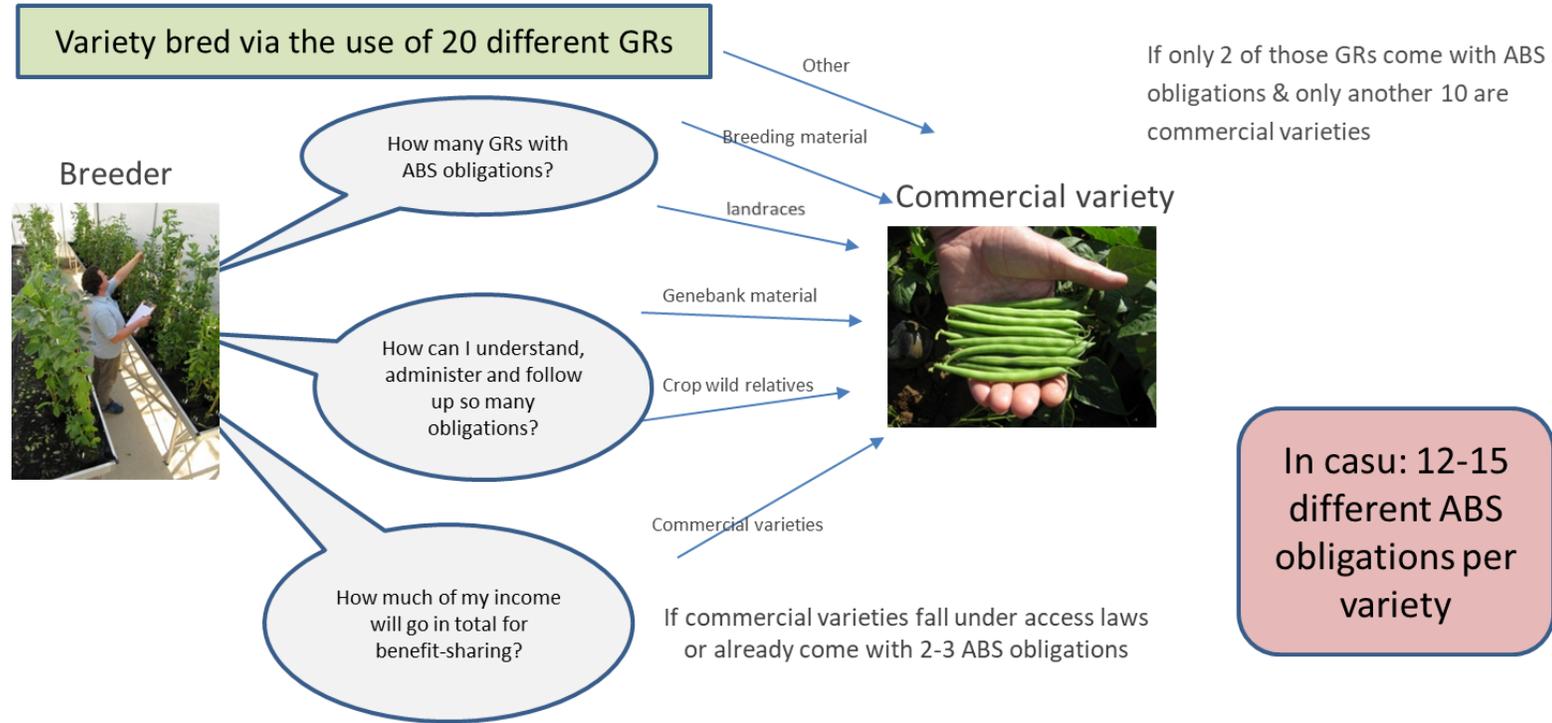
1. Membership in international ABS-related conventions (CBD, Nagoya Protocol, IT PGRFA)?
2. Which are the responsible public authorities for ABS matters (ministry or other public authority)?
3. Are there any ABS measures in your country implementing the CBD and/or the Nagoya Protocol? Is there a link to the national ABS legislation/measures that you can provide or which is on the [ABS Clearing House](#)?
4. Is Prior Informed Consent (PIC)¹ and/or Mutually Agreed Terms (MAT)² required for accessing genetic resources *in situ*?
5. Is PIC and/or MAT required for accessing genetic resources *ex situ*?
6. Does PIC and/or MAT apply when commercial varieties are accessed?
7. Which is the Competent Authority to grant PIC and/or MAT? Is the competence to grant PIC and/or MAT delegated to regional or local level?
8. Is there a specific ABS regime for PGRFA or are there any specific rules for plant breeding?
9. Is your country using the sMTA for granting access also to crops that are not on [Annex I](#) of the IT PGRFA? If yes, is there a government decision on which this practice is based? Where can that government decision / related information be found?
10. Are there any specific rules applicable to ornamental plants?
11. What are the first steps to take to apply for PIC and/or MAT?
12. Are there any specific provisions regarding benefit-sharing foreseen in the national ABS measures?

PART II:
IMPLEMENTATION OF THE EU ABS REGULATION (EU Regulation 511/2014)

1. What is the legislation on the national level that implements the EU ABS Regulation?
2. Which is (are) the Competent Authority(ies) for implementing the EU ABS Regulation (appointed according to Article 6 of the Regulation)?
3. Are audits foreseen for implementing the EU ABS Regulation (Article 9)?
4. Is your country using the DECLARE tool? If not, when, where and how the due diligence declaration has to be made (Article 7(1) and (2))?
5. Are sanctions foreseen for non-compliance with the EU ABS Regulation (Article 11)?

Overview Go back to the map

The challenge of commercial varieties



Plantum ABS LIMITS USE OF GENE BANK MATERIALS

- No exchange possible
- Limited materials available
- Difficulties with ABS contracts
 - SMTA
 - Conditions of the SMTA
- Time limitations
- Extra liabilities

- No exchange possible
- Limited materials available
- Difficulties with ABS contracts
 - SMTA
 - Conditions of the SMTA
- Time limitations
- Extra liabilities

DSI will complicate
issues even further

Plantum EXTRA ABS LIMITS IN PRE-COMPETITIVE RESEARCH

- Shared responsibilities
- Different interpretations
- Liability

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Plantum CONSIDERATIONS FOR GENE BANKS ON ABS

- What are the objectives of conserving genetic resources
 - Maintaining to use
 - Storing cultural heritage as an insurance
 - Storing genetic variation as an insurance
- How do you like to collaborate with the private sector
 - Precompetitive research
 - Evaluating gene bank materials
 - Multiplication of materials
- What ABS agreements are required
 - SMTA or conditions of SMTA are relatively convenient
- What are the consequences for access if DSI legislation will get into place
 - Is your information still accessible and if so under what conditions
 - Are partners still ready to collaborate

Plantum

Pre-competitive research on gene bank material for commercial use is relevant

But ABS legislation and further obligations of DSI have a consequence

Thank you for your attention