

2021

QUALITY SEEDS FOR WORLD NEEDS

OECD SEED SCHEMES

 **OECD**
BETTER POLICIES FOR BETTER LIVES

Introduction to

OECD'S AGRICULTURAL CODES AND SCHEMES

The OECD is known for its evidence-based advice and standards, as well as for being a forum where national experts from different areas can meet and jointly develop common standards and procedures. The OECD's Agricultural Codes and Schemes facilitate international trade through the harmonisation, simplification and implementation of international certification standards.

The overarching objectives of the Codes & Schemes are to increase transparency, reduce technical barriers to trade, increase market confidence through enforcement of quality control and inspection procedures and facilitate traceability.

The Agricultural Codes and Schemes focus on four key agricultural inputs and products:

- **The Seed Schemes** certify seed varietal identity and purity, encouraging the production, trade and use of seeds that are true to their name and are of consistently high quality.
- **The Forest Seed and Plant Scheme** certifies the source and genetic composition of forest reproductive material to guarantee consistently high quality.
- **The Tractor Codes** enable an importing country to accept, with confidence, the results of safety and performance tests carried out in another country.
- **The Fruit and Vegetables Scheme** promotes the use of uniform classification and quality control procedures for fresh and dried fruit and vegetable products.

The Agricultural Codes and Schemes are open to any OECD or non-OECD country that is a member of the United Nations or of the World Trade Organisation. Currently 66 countries participate in at least one of the Codes & Schemes. This includes the 36 OECD countries and 30 non OECD Economies, as well as some of the major players in world trade (Brazil, Russia, India, China, South Africa, Argentina and Ukraine).



The OECD's Codes and Schemes reduce technical barriers to trade and enable traceability. As such, they facilitate trade and build trust at the same time.

Marion Jansen,
Director,
OECD's Trade and Agriculture Directorate.



Guaranteeing the quality or safety of key agricultural products is critical for stakeholders along the length of the agricultural supply chain, from producers to consumers.

Lee Ann Jackson,
Head of Agro-food Trade and Markets Division,
OECD's Trade and Agriculture Directorate.

THE OECD SEED SCHEMES



The OECD Seed Schemes provide an international framework for the certification of varietal identity and purity of agricultural seed moving in international trade.

There are eight separate schemes:

- **Grasses and Legumes**
- **Crucifers and other Oil or Fibre species**
- **Cereals**
- **Maize**
- **Sorghum**
- **Sugar and Fodder Beet**
- **Subterranean clover and similar species**
- **Vegetables**

GOVERNANCE

61 countries, from around the world currently participate in the OECD Seed Schemes. All participating countries are involved in the consensus based decision-making process, which takes place at the Seed Schemes' Annual Meeting. However, on a day to day basis the management and implementation of the Seed Schemes is overseen by three key bodies.

- **The Secretariat** – is based at the OECD headquarters in Paris. The Secretariat is made up of a small team that coordinates and supports technical work streams, manages partnerships organises meetings and conducts evaluation missions.
- **The Bureau** - is made up of the Officers of the Annual Meeting. Its task is to assist the Secretariat in preparation of the Technical Working Group and Annual Meetings, including matters relating to the admission of new countries and to propose

solutions, when necessary, to urgent problems that may arise during the implementation of the Schemes.

- **The Coordinating Centre** - carries out a number of critical roles including the maintenance of the List of Varieties Eligible for Seed Certification and the provision of technical guidance and advice to the OECD Secretariat and National Designated Authorities (NDAs) to resolve any issues, for example relating to their application to participate in the schemes.

Assuring free-flowing international seed trade requires continued cooperation and trust. The Seed Schemes provide important benefits to participating countries:

- 1. Facilitate international trade**, providing access to new varieties as well as enabling entry to important agricultural export markets. Provides a framework to develop seed production with other countries or companies.
- 2. Builds trust through an inclusive and participatory standard setting process**, and facilitates regular exchanges of information with other national certification agencies.
- 3. Establishes an accessible varietal certification system** based on field inspection and control plot testing to guarantee the identity and purity of seed lots. As such, a number of countries and regional markets (e.g. the EU) have adopted the OECD standards into their legislation.
- 4. Provides an international regulatory framework governing the formal seed sector.**
- 5. Supports constructive collaboration between the public and private sector.**

1.9

Billion Dollars' worth of Trade



The OECD international seed certification standards are traditionally developed and regularly updated together with governments, relevant international organisations and representatives of the international seed industry. This multi-stakeholder approach is the real strength of the OECD seed schemes, creating a benchmark in the international seed sector.

Csaba Gaspar,
Programme Manager,
OECD Seed Schemes

TACKLING THE CHALLENGES FACING THE SEED SECTOR AND FOOD SYSTEMS

As a key agricultural input, seeds play a fundamental role in improving food security and nutrition, supporting the livelihoods of farmers and rural communities, and contributing to sustainable resource use and climate change adaptation and mitigation.

Innovation and access to new varieties is essential to improve the productivity, sustainability and resilience of agricultural production. As farmers and consumers become more demanding about the origin and quality of agricultural inputs, there is a greater need for trust and harmonisation of seed standards.

Co-operation among countries and stakeholders in the framework of the Schemes is a response to the concern for a market-responsive regulatory approach to seed certification. In 2017, the OECD Seed Schemes developed their Vision, Mission and a Strategic Plan to guide their adaptation to new challenges and further strengthen the relevance and values of the OECD Seed Schemes.

Vision

Globally harmonised seed varietal certification supporting the wider development of a productive, sustainable and resilient agriculture and food system.

Mission

The OECD Seed Schemes facilitate the international trade of quality seed by applying harmonised seed varietal certification standards and procedures.

THE SCHEMES IDENTIFIED FIVE STRATEGIC AREAS OF INTEREST

Ensuring the integrity of the schemes

- Support effective and harmonised implementation of the OECD Seed Schemes in participating countries through monitoring reports and reviews.
- Make better use of data for improving the Schemes, including deeper analysis of performance statistics.
- Encourage information sharing among National Designated Authorities and with the OECD Secretariat to address issues critical to the integrity of the OECD Seed Schemes in a timely and clear manner.
- Support seed certification as a tool to facilitate traceability along the supply chain.

Facilitate participation in the Schemes

- Provide a straightforward application process to participate in the OECD Seed Schemes (e.g., through clear guidelines, with clear expectations).
- Provide the opportunity for a potentially interested country to participate as an observer for a limited period.
- Encourage and support capacity building for new applicants and participating countries to ensure the schemes are as inclusive as possible while maintaining their integrity.
- Enhance collaboration with international and regional organisations involved in the seed supply chain.

Increase awareness of the values of the Schemes

- Enhance the exchange and sharing of experiences and information on the OECD Seed Schemes at Annual Meetings as well as through other relevant regional/international events and conferences.
- Develop promotional tools and material to (I) help stakeholders including National Designated Authorities

to explain the value of the OECD Seed Schemes and raise awareness domestically; and (II) assist potential new participating countries.

- Translate OECD Seed Rules and Regulations and related documents into other languages of interest for participating countries.

Strengthen linkages between the Schemes and policy-making bodies

- Inform policy makers of the key role of the OECD Seed Schemes in the seed supply chain and a productive, sustainable and resilient agriculture and food system.
- Strive to ensure the role of the seed sector is recognised in key areas of policy (e.g., climate change, food security, biodiversity).
- Provide a better understanding of the impacts of the harmonisation of seed standards on international trade through specific research studies.
- Cooperate with other seed-related organisations to improve global seed trade.

Maintain state-of-the-art standards

- Proactively consider innovations in plant breeding and varietal characterisation and identify their impact on the OECD Seed Schemes as well as the potential need for these changes to be reflected in updated OECD Seed Rules and Regulations and related documents.
- Ensure that the standards are responsive to changing market conditions in world seed trade.
- Explore the feasibility of incorporating other quality aspects into the OECD seed certification process.
- Regularly review the scope of coverage of the OECD Seed Schemes

HOW DO THE SEED SCHEMES OPERATE

The OECD Seed Schemes ensure the implementation of a set of procedures, methods and standards which verify the quality of seed during the multiplication process and which are designed to ensure that both the varietal identity and the varietal purity of varieties are maintained and safeguarded. The assessment of varietal identity and purity during seed production is crucial for maintaining high standards of seed quality for agriculture.

The OECD Seed Schemes provide procedures that are designed to ensure traceability through different breeding generations and the seed supply chain, monitoring the progress of a variety at different stages in the seed production process.

Checks are made at different stages of seed production to detect possible mixtures, mutations, undesired cross-pollination and other unforeseen occurrences that could affect the quality of the seed. The seed production process must ensure that nothing happens during the growing of the seed crop, the harvesting operation, the processing, bagging and labelling of the seed lot or the subsequent distribution, which could adversely affect seed quality.

National Designated Authorities (NDAs) are the entities nominated by governments to implement certification processes at the national level and represent their country during OECD Seed Schemes' meetings.

KEY STEPS IN OECD SEED CERTIFICATION

Step
1

Registration of varieties on the OECD Variety list

In order to check for varietal identity and purity along the seed supply chain, the characteristics which distinguish one variety from another have to be established and described so that it is possible to identify seed as being consistent with the known characteristics of the variety at the time of Registration.

The OECD List of Varieties is an online list which is continuously updated according to the requests of NDAs. The list includes varieties that are officially recognized as distinct, uniform and stable, possess an acceptable value in at least one participating country and will be traded internationally. The number of varieties listed has grown steadily over the last thirty years to over 62 000, corresponding to 204 species.

Step
2

Inspection of seed production

The OECD Seed Schemes Rules and Regulations outline the standards for seed production. This includes procedures for the acceptance of seed production fields and field inspection of growing seed crops. All seed production must conform to the relevant Rules and Regulations.

Step
3

Sampling and testing seed

Sampling of seed lots and basic laboratory tests are carried out to determine seeds' analytical purity and germination. The tests are conducted according to international standards such as those of the International Seed Testing Association (ISTA).

Step
4

Labelling and sealing of seed lots

The Schemes authorise the use of labels and certificates to identify seed produced and processed for international trade. All packaging, labelling and sealing of seed lots must conform to the relevant OECD Rules and Regulations. The labels and supporting records provide the information required to cross international borders.

Step
5

Issuance of a certificate

If a seed lot has met the required standards, it is certified by the National Designated Authority of the participating country and a certificate is issued when required.

Step
6

Use (export import or domestic)

Domestic seed certification and regulatory systems may vary considerably, therefore a harmonised voluntary international system is an important tool that countries can use for specific varieties. The benefits of seed certification and guarantees are shared among all stakeholders.

International trade is a critical part of seed production. Seasonal climates limit agricultural production and therefore countries with restricted growing season are increasingly choosing to multiply their seed abroad. The OECD seed schemes facilitate “counter season production” and trade between countries in the northern and southern hemispheres to guarantee availability of seed in the spring.

Step
7

Post control tests

Post Control Tests (PCTs) are a critical part of the Seed Schemes’ ability to monitor the performance of the system and confirm the varietal identity and purity of certified seed lots. PCTs assess whether field inspection and other aspects of seed production that take place prior to the fastening of seed labels and sealing of seed containers have been correctly implemented.

Post Control Tests are carried out by visually comparing a control plot (sown with a sample from the certified seed lot) with a plot grown from an authentic reference sample of the variety. This visual control also seeks to identify any off-types (plants that are not true to the variety description) within the control plot.



Source: Eddie Goldschagg

96.6 %

**success rate
of post control tests**

A MULTI-STAKEHOLDER, COLLABORATIVE APPROACH

The success of international certification depends upon close co-operation between maintainers, seed producers, traders and the designated authority (appointed by the government) in each participating country. The Rules governing the Codes and Schemes are regularly updated to reflect changes in trade, agriculture, environment and health and safety standards in member countries. The OECD Seed Schemes' objectives are achieved through ongoing dialogue and debate with the designated authorities of member Countries, observers and other stakeholders, including farmers, industry and trade. This comprehensive and inclusive process ensures that the standards are reliable, efficient and fit for purpose.

Frequent meetings allow for stakeholders to exchange information, discuss case studies, revise rules and update the Schemes. A wide range of international and non-governmental organisations as well as seed industry networks participate actively in the Schemes meetings.



OECD certification forms one part of an international regulatory framework governing the formal seed sector and facilitating trade. The World Seed Partnership (WSP) is an informal initiative taken by five international organizations, including OECD, to support the development of the seed sector in countries around the world. The partnership also includes:

- International Union for the Protection of New Varieties of Plants (UPOV) that harmonises plant variety protection and ensures breeders' rights across countries.
- International Seed Testing Association (ISTA) that seeks to ensure uniformity in seed sampling and testing.
- International Seed Federation (ISF) that represents the seed industry.
- The World Farmers Organisation brings together national farmers' organizations and agricultural cooperatives from all over the world.

The mission of the World Seed Partnership is to enhance cooperation between the partner organizations and to provide a focal point for information on the role of internationally harmonized seed systems in supporting sustainable agriculture.

To find out more about the partnership, please consult the WSP website (www.worldseedpartnership.org) or send an enquiry to: info@worldseedpartnership.org

Over

62 000

plant varieties
registered



HOW TO JOIN

Before applying to join the OECD Seed Schemes, countries should assess the benefits of membership for their seed sector. This assessment is usually initiated by the Ministry of Agriculture in close co-operation with other stakeholders in the country. It could focus on the following elements:

- Examination of the current organisation of the NDA, national seed regulations and the technical and managerial level of NDA staff members.
- The opportunities for seed exports to other countries. The potential interest of foreign or multinational seed companies for seed multiplication in country.
- Identifying critical gaps with regard to the OECD Seed Schemes requirements.
- Identifying the measures to be taken in terms of organisation, management, investment in equipment, etc.
- Training to be organised for NDA staff members.
- Calculation of the cost of membership in the OECD Seed Schemes and available financial resources.

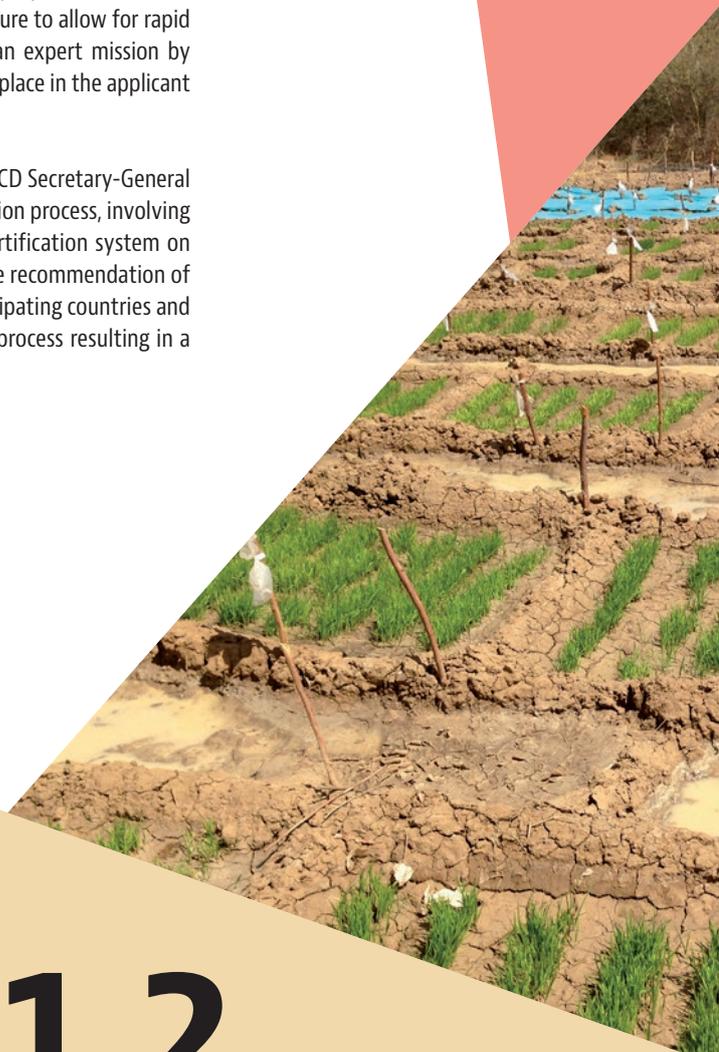
Once a country has expressed its desire to join the Seed Schemes, an appropriate action plan should be discussed by all stakeholders. Such a plan will facilitate preparations for becoming a Member of the Schemes and the planning of capacity building activities. An action plan should also assess the financial resources required for each training activity and the appropriate timeframe. It is recommended that capacity building begin before the admission procedure to allow for rapid accession to the Schemes. For example, after submitting an application, an expert mission by representatives of the OECD or an NDA of a participating country could take place in the applicant country to assist them in identifying their training needs.

The formal process is as follows. An official request to join is sent to the OECD Secretary-General accompanied by the relevant documentation. This is followed by an evaluation process, involving a mission to the applicant country, to assess the national seed varietal certification system on site. The evaluation report summarises the outcomes of the mission and the recommendation of the evaluation team. This report is circulated to the authorities of the participating countries and discussed at the OECD Annual Meeting. The final step is an internal OECD process resulting in a Council Decision. The formal procedure should take about one year.



Participation in the OECD Seed Schemes not only helps to improve the quality of domestic agricultural production, but also helps to develop international and regional export markets, and provides farmers, seed breeders and authorities with reassurance as new markets open up.

Kristiina Digryte,
OECD Seed Schemes Bureau Chair



1.2 Billion kg
of seed certified

LIST OF COUNTRIES PARTICIPATING IN THE OECD SEED SCHEMES

	GRASSES AND LEGUMES	CRUCIFERS AND OTHER OIL OR FIBRE SPECIES	CEREALS	BEET	SORGHUM	MAIZE	SUBTERRANEAN CLOVER AND SIMILAR SPECIES	VEGETABLES
ALBANIA								
ARGENTINA								
AUSTRALIA								
AUSTRIA								
BELGIUM								
BOLIVIA								
BRAZIL								
BULGARIA								
CANADA								
CHILE								
CROATIA								
CYPRUS								
CZECH REPUBLIC								
DENMARK								
EGYPT								
ESTONIA								
FINLAND								
FRANCE								
GERMANY								
GREECE								
HUNGARY								
ICELAND								
INDIA								
IRAN								
IRELAND								
ISRAEL								
ITALY								
JAPAN								
KENYA								
KYRGYZSTAN								
LATVIA								
LITHUANIA								
LUXEMBOURG								
MEXICO								
MOLDOVA								
MOROCCO								
NETHERLANDS								
NEW ZEALAND								
NORWAY								
POLAND								
PORTUGAL								
ROMANIA								
RUSSIAN FEDERATION								
SENEGAL								
SERBIA								
SLOVAK REPUBLIC								
SLOVENIA								
SOUTH AFRICA								
SPAIN								
SWEDEN								
SWITZERLAND								
TANZANIA								
TUNISIA								
TURKEY								
UGANDA								
UKRAINE								
UNITED KINGDOM								
UNITED STATES								
URUGUAY								
ZAMBIA								
ZIMBABWE								

CAPACITY BUILDING ACTIVITIES

As countries begin to establish seed policy and regulatory frameworks to facilitate the development of a formal seed sector, many countries are approaching the OECD Seed Schemes to learn more about seed certification. To support both new applicants and participating countries, and ensure the accurate implementation of rules and regulations, the Schemes offer trainings for government officials.

This training and capacity building to strengthen implementation is often delivered by volunteer experts from participating countries.

For more information please see [Capacity Building in the OECD Seed Certification Schemes](#)

The Seed Schemes have developed a number of training modules to support capacity building. The following modules are available on request from the Secretariat.

- **Seed Biology**
- **Breeding**
- **Seed Production**
- **Seed lot identification and traceability**
- **Labelling and Sealing of Containers**
- **Field inspection**
- **Sunflower**
- **Cereals**
- **Soya beans**
- **Dry beans**



LATEST MEETINGS AND UPDATES

- **Annual and TWG Meetings:** In 2020 the Seed Schemes Technical Working Group Meeting was held in January in Milan, Italy. Following travel restrictions and social distancing requirements put in place to mitigate the effects of COVID-19, the Annual Meeting was held in June 2020 via video conferencing facilities.
- **Response to COVID-19:** The COVID-19 pandemic and the restrictions put in place by governments to protect their people have the potential to restrict the production, certification and international trade of seed with serious consequences for farmers and the global food chain. The classification of the agriculture sector as “essential” proved critical for the continued production and movement of seed, while avoiding changes to regulatory frameworks was essential at a time when relevant authorities were short staffed and under pressure. The OECD Seed Schemes carried out three separate surveys over 2020 to better understand the impact of the pandemic on the Seed Sector. The results of these surveys will feed in to the development of guidelines for future emergency situations. In addition, OECD’s Trade and Agriculture Directorate, in collaboration with the Japanese government, is in the process of analysing the resilience of the international seed market during the COVID-19 pandemic, including a case study of the Asian seed market. For more information see: [Policy responses to COVID-19 in the Seed Sector](#) and [COVID-19 at the Seed Sector: How countries are navigating challenges](#)
- **Food Systems:** the OECD Seed Schemes recently finalised a case study on how the seed sector, and specifically plant breeding, can help meet the triple challenge of food security and nutrition, livelihoods, climate change mitigation and sustainable resource use. This case study forms part of a broader report on [Better Policies for Food Systems](#). This report, along with other OECD work will help inform the discussions and activities of the 2021 UN Food Systems Summit.
- **Digitalisation of the OECD Seed Schemes:** The OECD Seed Schemes have been exploring ways to improve the efficiency and integrity of their certification and labelling system since 2013. This exploration was driven at first by a need for more reliable labelling and certification options to support the increasing volume of seed lots being traded internationally and a heightened risk of fraud in the seed sector. In addition, the Schemes wanted to improve data collection and provide governments and other supply chain stakeholders with more accurate and up-to-date information on the production, certification, and international trade of seed. Over the coming months the OECD Seed Schemes Secretariat will undertake a feasibility study to explore the technologies available for the digitalization of the OECD Seed Schemes. The study will compare the costs and benefits of different IT systems, including the development of a use case for a blockchain solution.
- **Updating the rules and regulations for Hemp:** In June 2020, countries participating in the OECD Seed Schemes agreed on a new project proposal to review Hemp seed certification standards under the guidance of the Ad Hoc Working Group (AHWG) on New Seed Production Methods. Although 93 Cannabis varieties are already registered under the OECD Seed Schemes, the growing CBD market requires the cultivation of female plants that produce a large number of flowers. As a result, breeders are exploring new seed production methods including feminized hemp seeds (FHS) and hybrid hemp varieties to produce more flowers. Currently there are no OECD standards or procedures for certifying the production of FHS and there is some concern that plants derived from feminised seed have potentially higher THC levels. For more information see: [Budding industry: How companies and regulators are meeting the rising demand for new cannabis varieties](#)



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