



African Cereal and Legume Breeding Consortium (ACLBC)



Accelerating the adoption and scaling of high-performance seed technologies across Africa!





Why ACLBC?

Established by the African Seed Trade Association (AFSTA) and the International Institute of Tropical Agriculture (IITA) through Technologies for African Agricultural Transformation (TAAT), a flagship programme of the African Development Bank (AfDB), the African Cereal and Legume Breeding Consortium (ACLBC) accelerates the adoption and scaling of high-performance seed technologies generated by national and international research institutions.

The ACLBC facilitates access to proven and path-breaking seed technologies bred by TAAT's Regional Food Technology Delivery Infrastructure, comprising international, national, and regional research institutions, through a well-defined protocol.

Specifically, ACLBC

- Provides Member Seed Companies with high-yielding seed varieties and breeding lines
- Assists the seed companies in setting up and developing their breeding lines
- Provides technical assistance to seed companies to conduct multi-location adaptability tests of new varieties
- Strengthens the capacity of seed companies in hands-on seed production with an emphasis on hybrids
- Conducts joint demonstrations to showcase high-performing TAAT-vetted varieties.

What are the Benefits for Members?

- (a) Access to a maximum of 3 varieties or hybrids of either Maize, Rice, Wheat, Sorghum, Millet, Soybean, and High Iron Beans (HIB) on an annual basis, subject to availability of requested varieties and hybrids.
- (b) 24-month exclusivity ("Lead Access Period") for accessing varieties and hybrids subject to the technology provider's intellectual property, testing, and licensing arrangements. The technology owner shall be free to distribute these varieties and hybrid lines anytime after the Lead Access Period ends.
- (c) Participation in annual workshops to showcase new outputs of crop improvement programmes; review field test results of TAAT-vetted seed technologies conducted by members; and disseminate results of advanced testing of elite breeding lines, adaptability trials, and demonstration of the consortium exclusive varieties/hybrids.
- (d) Joint hosting of seminars and webinars on contemporary issues relevant to the seed sector
- (e) Access to joint discussions and consultations with the TAAT ecosystem of partners
- (f) Participation in the implementation of special projects on cereal and legume development

What do I require to join ACLBC?

- Membership: Seed Companies applying for ACLBC membership must be a member of AFSTA or one of its National Associations
- Duration of membership: Valid for a calendar year from 1 January to 31 December
Companies can register at any time of the year, but the fee is the same regardless of the date of the registration
- Invited Members: Non-Profit Organizations (NPOs) (e.g. national agriculture research systems, higher education institutions) can participate in ACLBC activities as knowledge partners solely by invitation from IITA-TAAT.



Annual Membership Fee :

- National: companies active in a single country - **500 US\$**
- Regional: companies with activities in more than one country in Africa - **1,000 US\$**
- International: companies with activities inside and outside Africa - **1,500 US\$**

What are the Membership Obligations?

- Provide regular feedback from evaluation trials, testing, and demonstrations of consortium-exclusive varieties.
- Provide data annually to AFSTA on consortium-exclusive varieties sold or distributed by seed companies
- Reveal the pedigree of their varieties especially those derived from consortium-exclusive lines.

Potential of some ACLBC’s high-yielding and disease-resistant seed varieties: An overview

Maize Varieties

The average yield of maize in sub-Saharan Africa is just about 1.9 t/ha

ACLBC proposes a wide range of varieties from the TAAT Maize Compact led by AATF, including 200 distinct lines of Drought-tolerant Maize Varieties (DTMA) released in 13 African countries alongside over 120 hybrids of Water Efficient Maize Varieties (WEMA) in seven countries. They are drought-tolerant and high-yielding (3 – 5t/ha under moderate drought and 7 – 12t/ha under optimum conditions).

Examples of some superior performing DTMA & WEMA maize varieties under optimum conditions across Africa:

| Variety | Yield obtained t/ha | Country |
|--------------------|---------------------|----------|
| WE2109 | 10.15 | Tanzania |
| WE4114 | 9.49 | |
| WE6103 DroughtTEGO | 7.0 – 8.0 | Uganda |
| SAMMAZ 62 (WE5229) | 8.35 | Nigeria |
| SAMMAZ 63 (WE5202) | 8.13 | |
| SAMMAZ 68 (WE8206) | 8.7 | |

In addition to this, several varieties the Golden maize which are biofortified maize that is high in vitamin A will be made available. The map shows the performance of these varieties across Africa



Soybean Varieties

The average yield of soybeans across sub-Saharan Africa is 1.1 ton per hectare
Some examples of superior performing varieties that are high-yielding and rust-resistant from the TAAT Soybean Compact led by IITA with potential yields of up to 3 t/ha:

| Variety | Attributes | Adaptability | Yield (t/ha) | Reaction to diseases |
|--------------------|---------------------------------------|------------------|--------------|----------------------|
| 2021BN500 -890 -1 | Erect, determinate, creamy brown pods | Widely adaptable | 3t/ha | Rust-resistant |
| 2021BN500 -678 -2 | Erect, determinate, medium maturity | Widely adaptable | 2.7 | Rust-resistant |
| 2021BN500 -1113 -3 | Erect, determinate, medium maturity | Widely adaptable | 2.6 | Rust-resistant |
| 2021BN500-1411-2 | Erect, determinate, medium maturity | Widely adaptable | 2.6 | Rust-resistant |
| 2021BN500-976-1 | Erect, determinate, medium maturity | Widely adaptable | 2.6 | Rust-resistant |

Heat-tolerant Wheat Varieties

The average yield of Wheat in sub-Saharan Africa is 1.5t/ha

Some examples of heat-tolerant varieties that are high-yielding and rust-resistant from the TAAT Wheat Compact led by ICARDA with production potential ranging from 4-7 t/ha under irrigated lowland production system:

| VARIETY | Ecology | Yield (T/ha): | Maturity | Desirable Characteristics |
|-----------------------|--------------------|---------------|-----------------|--|
| Borlaug 100 | irrigated lowlands | 4-7 | Early to medium | Heat tolerant and resistant to prevailing rust diseases with good end use quality (protein 13-15%) |
| LACRIWHIT-9 (Pastor); | irrigated lowlands | | Early to medium | |
| LACRIWHIT-10 (Kauz) | irrigated lowland | | Early to medium | |
| LACRIWHIT-11 (Imam) | irrigated lowland | | Early to medium | |
| LACRIWHIT-5 (Norman) | irrigated lowland | 5-8 | Early to medium | |
| ZAKIA | irrigated lowland | | Early to medium | |
| GOUMERIA | irrigated lowland | | Early to medium | |
| WERER-2 | irrigated lowland | | Early to medium | |

Rice Varieties

The Average yield of Rice across sub-Saharan Africa is 2 tons per hectare.

ACLBC proposes a wide range of varieties produced by the TAAT Rice Compact led by AfricaRice, drawn from hybrids with potential yields of 10 to 13 t/ha, 6 ORYLUX varieties with potential yields of 6 to 9t/ha, 18 ARICA varieties with potential yields of up to 6 t/ha and over 60 NERICA varieties, some of which have a potential yield of over 5 t/ha.

Examples of some superior performing and widely adaptable rice varieties with desirable end use quality in Africa:

| NAMES | Ecology | Yield (T/ha): | Days to maturity | Wt of 1000 grains (g): | Disease resistance: | Insect resistance: | Other Characteristics |
|---------------|-------------------|---------------|------------------|------------------------|---------------------|--------------------|--|
| Hybrid AROS1H | Irrigated | 13 | 130 | | | | Aromatic |
| ORYLUX 1 | Lowland Irrigated | 8 | 120 | 21.5 | Medium | Medium | Aromatic |
| ORYLUX 2 | Lowland Irrigated | 6 | 123 | 26.7 | Medium | Medium | Good quality |
| ORYLUX 5 | Lowland Irrigated | 9 | 110 | 25.5 | Medium | Medium | Aromatic |
| ORYLUX 6 | Lowland Irrigated | 6.5 | 100 | 19.5 | Medium | Medium | Aromatic |
| | | | | | | | |
| ARICA 2 | Lowland | 6.8 | 101 | 28.0 | Intermediate | Intermediate | High yielding |
| | | | | | | | |
| ARICA 3 | Lowland | 7.9 | 101 | 25.1 | Intermediate | Intermediate | High yielding |
| | | | | | | | |
| NERICA – L 2 | Lowland | 6.14 | 108 | 28.13 | good | Good | Stress, drought, salinity, cold, and iron toxicity). |
| NERICA – L 15 | Lowland | 6.02 | 108 | 30.7 | good | Good | |
| NERICA – L 11 | Lowland | 6.01 | 101 | 27.90 | | | |

Sorghum Varieties

The average yield of sorghum in Africa is 1,3 t/ ha.

Some examples of climate-resilient and high-yielding sorghum varieties from the TAAT Sorghum and Millet Compact led by ICRISAT with a potential yield of up to 4 t/ha:

| Variety | Type | Duration (days) | Yield (t/ha) | Characteristics | Adaptation Zones / Rainfall (mm) |
|----------------------|----------------------|-----------------|--------------|--|----------------------------------|
| Sariaso 29 | Pure Line | 100-105 | 2.7 | Photosensitive, White grain | 500 -700 |
| LATA 3 | Pure Line | 85 | 3 | Photosensitive | 800 - 1000 |
| ISRA-S-622A (NGANDA) | Double Purpose | 120 - 150 | 3.5- 4.0 | Good quality flour, 20%- 30% composition for bread | |
| Soubatimi | Double Purpose (OPV) | 105 | 3 | Sweet & Juicy stem, Tolerant to striga, In vitro Digestibility (49%) | 600 - 1000 |
| Tiandougou coura | Double Purpose (OPV) | 120 | 2.5 | Tolerant to striga, In vitro Digestibility (49%) | 800 - 1200 |
| Seguifa | Double Purpose | 90 | 3 | Tolerant to striga, In vitro Digestibility (47%) | 400 - 800 |



Technology e-catalogs