Yellow Rust and Stem Rust Resistant wheat

Rust-Resistant Wheat for a Flourishing Future

Symptoms of yellow rust (left) and stem rust (right)

Rust-resistant wheat varieties use All-stage resistance (ASR) and Adult plant resistance (APR) genes to combat rust fungi. ASR provides strong protection but can be overcome by evolving fungi. APR offers partial, longer-lasting, broad-spectrum resistance. Combining ASR and APR enhances resistance.

ICARDA
Science for resilient livelihoods in dry areas

International Center for Agricultural Research in the Dry Areas (ICARDA)
Zewdie Bishaw

This technology is TAAT1 validated.

7·7 Scaling readiness: idea maturity 7/9; level of use 7/9

Gender assessment 4

Climate impact 7

Problem

- **Rust Epidemics**: Yellow and stem rust cause significant yield losses and devastate wheat crops in Sub-Saharan Africa.
- **Rapid Spread**: These diseases spread rapidly through wind-borne spores, leading to massive losses.
- **New Strains & Native Infections**: Continuous emergence of new strains and infections in native grasses make control and eradication challenging.

Solution

- **ASR and APR Genes**: Provide strong and broad-spectrum protection against rust fungi at all plant stages.
- **High Yield Potential**: Maintain high yield despite rust resistance.
- **Robustness**: Exhibit resistance to other diseases and environmental stresses like drought.

4.1 Ton/ha
average grain yield

440 USD
Total farming operational costs

Technology from

ProPAS

Commodities

Wheat

Sustainable Development Goals

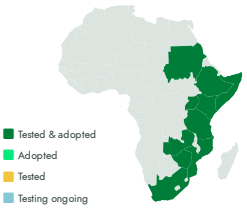
Categories

Production, Improved varieties, Disease resistance, Yield improvement

Best used with

- Integrated Management of Insects, Diseases and Weeds in Wheat ›

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.