

# HEAT AND DROUGHT TOLERANT WHEAT VARIETIES

## Wheat cultivation in high temperature regions

### TECHNOLOGY / SOLUTION



This technology is a seed series that contains over 30 varieties that combine high yield potential with heat and drought tolerance.

These seed lines are characterized by early harvest maturity (90-100 days), and resistance to extreme temperatures and low rainfall, and good bread-making wheat characteristics (14-15% protein content).



### PROBLEM / ISSUE SOLVED

- Wheat production is limited by heat and drought stress. A 1°C and 4°C rise in average temperature decreases the productivity of wheat by 3-10% and 34 % respectively
- All wheat-growing areas in sub-Saharan Africa are experiencing increasingly frequent periods of extreme temperatures and reduced rainfall due to climate change
- Like some other cereals, wheat is prone to diseases and pests

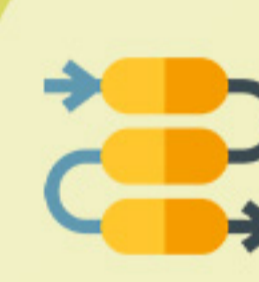
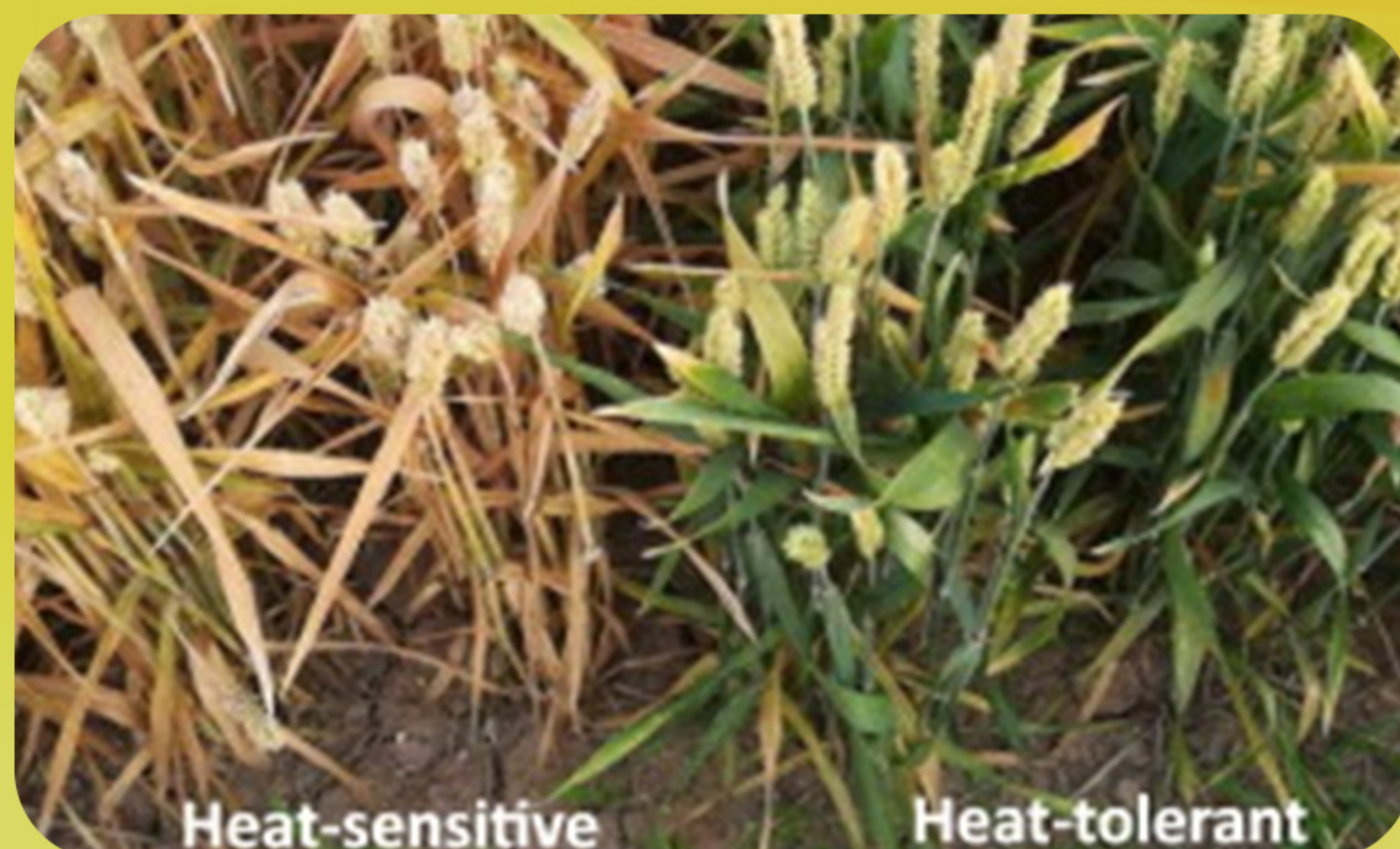


**GOOD FOR**  
Small-scale farmers,  
Commercial farmers



### BENEFITS

- ✓ 75% increase in grain yield potential with less than 200 mm rainfall and heat stress, compared to common varieties which show a 50% yield loss under the same conditions
- ✓ Resistance to diseases and pests like yellow and stem rust
- ✓ Wheat cultivation can continue in all current growing areas of sub-Saharan Africa despite extreme temperatures and reduced rainfall occurring more frequently due to climate change
- ✓ Increases the possibility of wheat cultivation (under irrigated conditions) in non-traditional locations such as dryland regions in the Sahel with 30-40°C and rainfall below 250mm



Heat & drought  
tolerance  
Speciality



Wheat  
Commodity

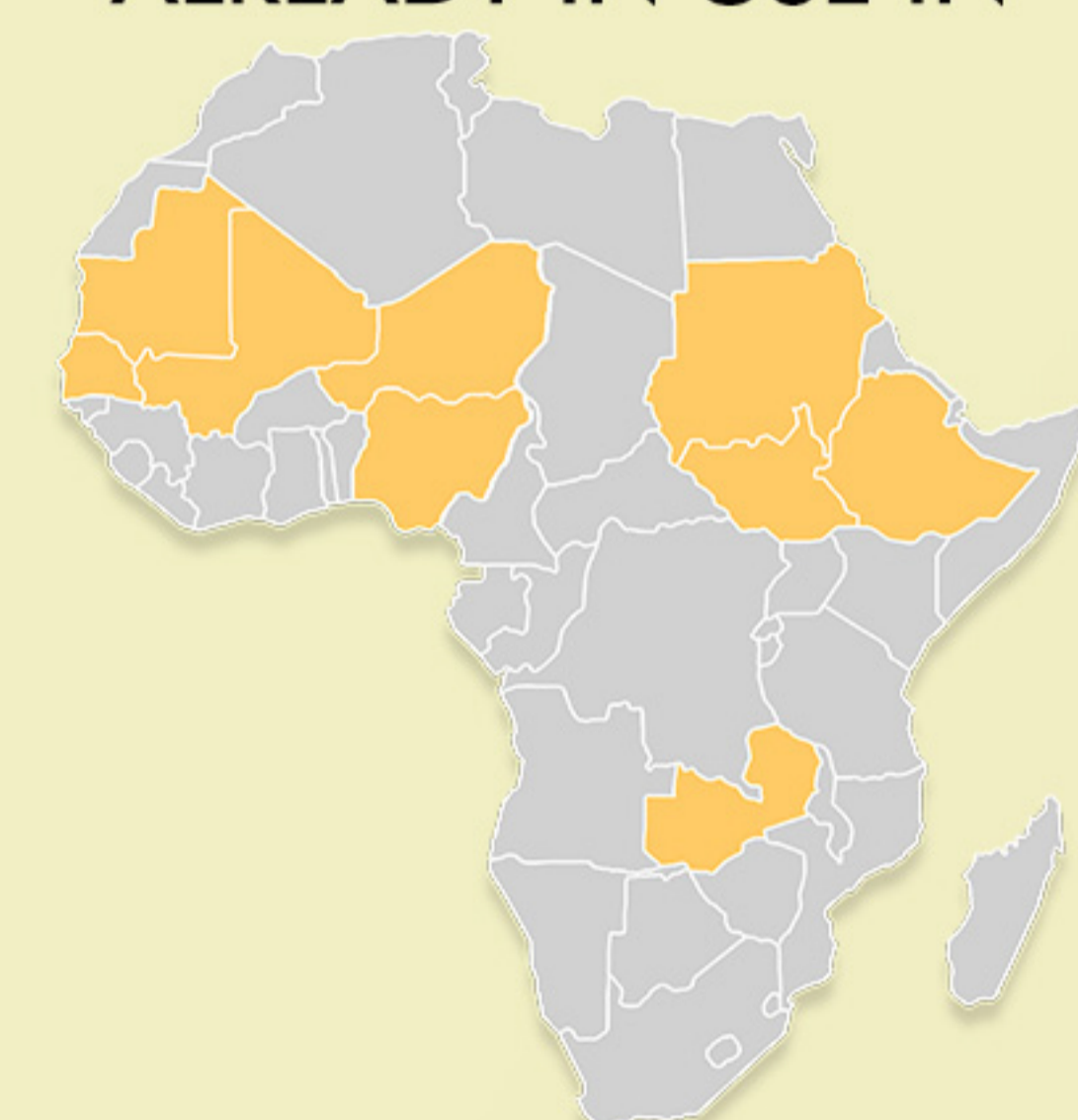


US\$165 - 305/ ha  
(seed, fertilizer and  
pesticide costs)  
Initial investment



4 - 5 tons/ha  
increase in yield  
Added value

### ALREADY IN USE IN



Ethiopia, Mali, Mauritania,  
Niger, Nigeria, Senegal,  
Sudan, Zambia

### HOW DOES IT WORK?

Heat and drought tolerant wheat varieties replace traditional wheat seed varieties. They are cultivated on farmer fields using:

- same planting density and mineral fertilizer input as other improved varieties, following local recommendations;
- Good agricultural practices such as reduced or zero tillage, raised bed planting, soil fertility management, integrated pest management and efficient irrigation systems.

