HYDRANEO
Technology for Drought Management

TO SECURE YIELD
IN DROUGHT CONDITIONS

Limagrain

A COMPLETE APPROACH OF DROUGHT **TO MAXIMIZE YIELD & MARGIN**

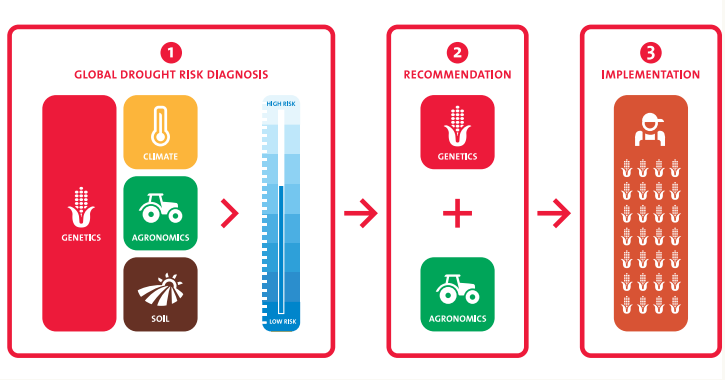
HYDRANEO
Technology for Drought Management

Drought is a major issue for European corn growers affecting more than 70% of grain corn acreage.

Drought is a multi-faceted problem and genetics represent a highly anticipated solution, although not the only one.

LG thus developed HYDRANEO, a global approach of drought management. It considers in addition to maize drought tolerance, climate, soil type and agronomic practices in order to:

- **Maximize yield security in case of drought**
- **Maximize profitability across years**



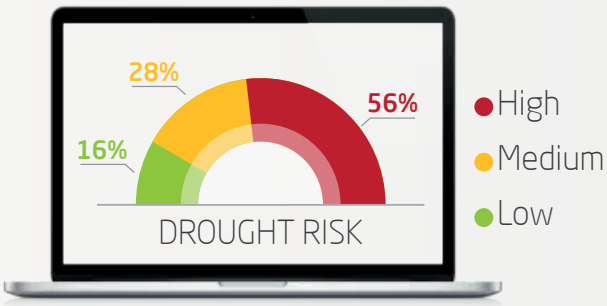
CONCRETELY, THE HYDRANEO OFFER COMBINES **SERVICES & DROUGHT TOLERANT VARIETIES**

- **Services:** global risk assessment of the field with an LG representative thanks to LG Vision HYDRANEO tool + recommendation of varieties & density + best agronomic practices to reduce drought (crop rotation, tillage, sowing date, fertilization).
- **Varieties:** drought tolerant varieties evaluated and bred supported by an innovative proven proprietary method. While providing high yield in good conditions, Hydraneo varieties also tolerate better drought stress. They are available in a wide range of maturities.

LG VISION HYDRANEO: **GLOBAL DROUGHT RISK DIAGNOSIS & VARIETY RECOMMENDATION**

LG Vision HYDRANEO tool precisely evaluates the field's stress frequency and intensity depending on the historical climate data, soil texture & depth and farming practices in order to:

- Recommend the best varieties for the field
- Recommend an optimal sowing density
- Propose the best agronomic practices to mitigate drought



AN INNOVATIVE METHOD
TO BREED THE MOST TOLERANT VARIETIES

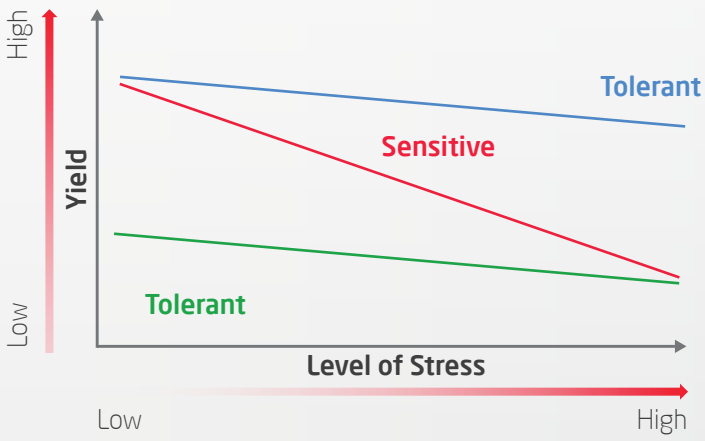
Drought tolerance is an important research focus for Limagrain Europe. Since 2010, a dedicated research team has been working on it.
A patented methodology has been developed to evaluate and breed drought tolerant grain maize (patent number: EP 3 304 377 B1).

1. In more than **100 locations**, tensiometers and weather sensors have been set up to measure the nature, period and intensity of drought.

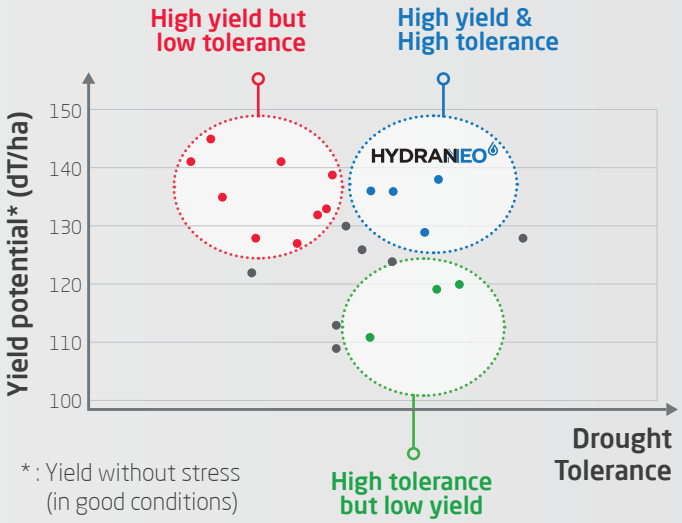
2. **Drought tolerance**, is evaluated based on **soil & air water stress and heat stress** during corn's most sensitive periods **(flowering and grain filling)** thanks to significant computer resources. Stress tolerance is the ability of the variety to maintain its yield in a stress situation.

3. Varieties are labeled HYDRANEO **after several years of positive results and observations.** To be HYDRANEO, the candidate varieties must combine **high yield potential and high drought tolerance.**

EVALUATION OF VARIETIES PERFORMANCE UNDER DIFFERENT LEVELS OF DROUGHT STRESS



CONFIRMATION OF HYDRANEO PERFORMANCE



*: Yield without stress (in good conditions)

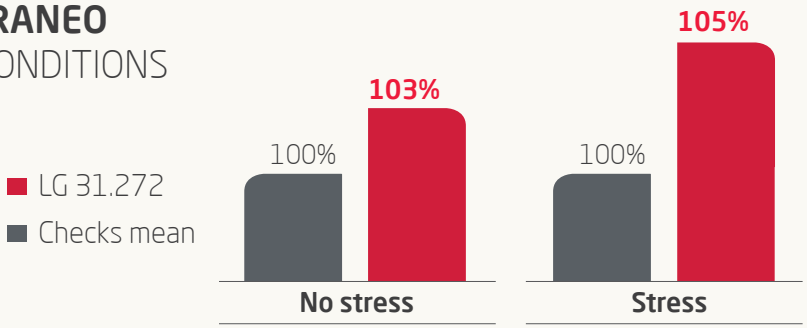
HYDRANEO VARIETIES PROVIDE

BETTER YIELD & PROFITABILITY IN STRESS SITUATIONS

High yield potential	>	High yield in good conditions
Good drought tolerance	>	Good yield in stress conditions
More regular performance	>	Secured & maximized margin across years

YIELD OF LG 31.272 HYDRANEO
IN STRESS & NON STRESS CONDITIONS

- 4 trial years: 2017-2020
- 64 locations, 8 countries



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10 543 346,75 €
RCS Clermont-Ferrand
542 009 824
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"Thanks to HYDRANEO global approach, I think that LG is the expert in drought stress management that can secure the most my yield in drought conditions"

Ivanna, farmer in Ukraine

"I have been using the Hydraneo Technology on my farm for three seasons and it has helped me break my stereotypes when it comes to growing maize. For three years, I have obtained stabilization of the yield, regardless of weather conditions"

Marek, farmer in Poland