Performance of spring wheat derived from physiological strategic crossing under Mexican growing environments

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Conceptual models + screening of diverse genetic resources + physiological strategic crossing + phenotyping (including high throughput) to identify lines with maximum expression of sink and source traits

Crosses designed make use of complementary traits → cumulative gene action for higher yield (e.g. source and sink traits)

Germplasm testing → Wheat Yield Collaboration Yield Trial (WYCYT) (yield potential conditions) → Mexican irrigated environments (six locations)

Targeted wheat growing regions of Mexico (only irrigated)

Advantage of wheat lines derived from physiological strategic crossing

Best PT line vs. local check
16.8% ↑GY (3, 4 & 5 WYCYT)

Best PT line vs. Sokoll
22.4% ↑GY (2, 4 & 5 WYCYT)

Best PT line vs. Borlaug 100
13.0% ↑GY (5 WYCYT)

• Designing crosses with parental lines with high expression of biomass (source trait) and good expression of sink traits (e.g. harvest index) can give genetic advantages and increase grain yield.