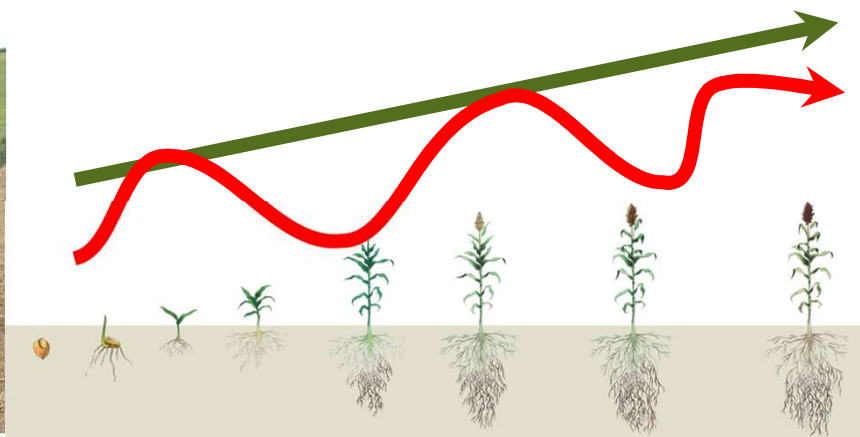




Sowing equipment, planting configurations and yield elaboration



SORGHUM PLANTING : CHALLENGES AND KEYS TO SUCCESS



**Seedling quality
and configuration**

Climatic constraints

Temperature

Pluviometry (irrigation)

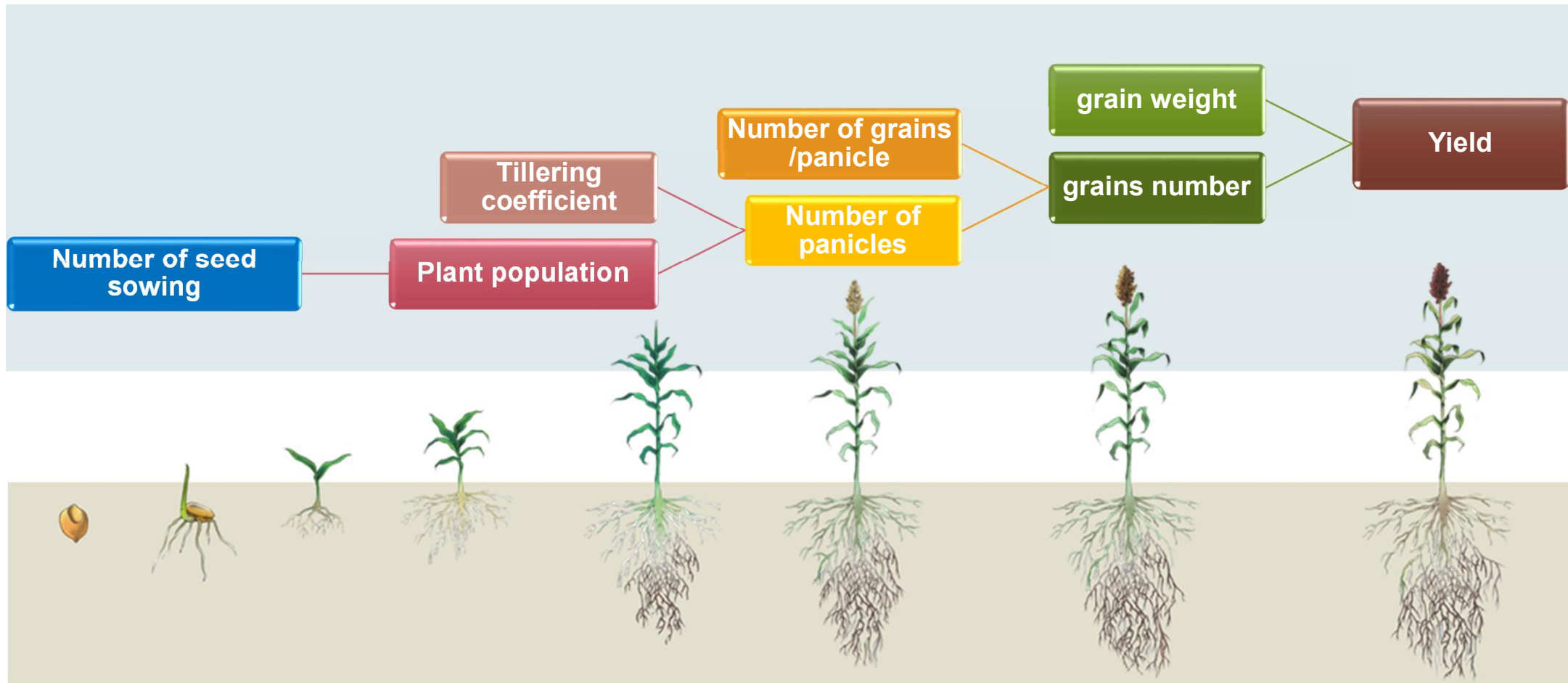
Pest nuisibility and control

weeds

Insects

Diseases

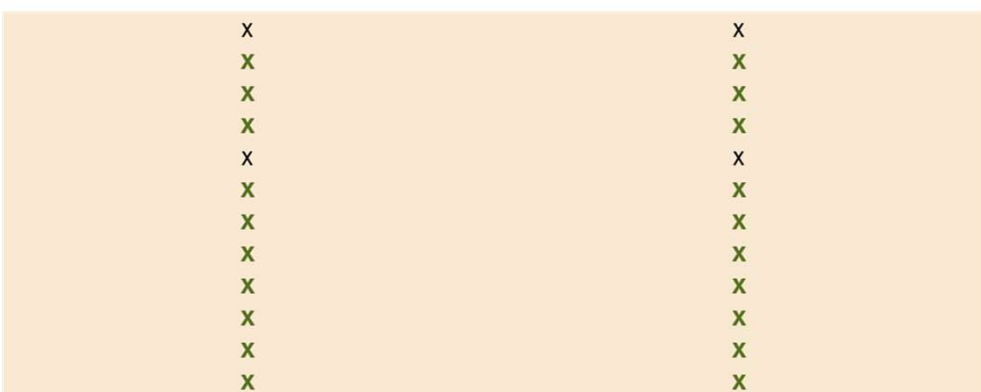
GRAIN SORGHUM YIELD COMPONENTS



ROW SPACING AND PLANTING CONFIGURATIONS

Should it reduce row spacing ?

- Better distribution of plants
- Better and faster soil cover
 - ⇒ Weed development reduction ⇔ Mechanical weeding more difficult
- Tillering impact

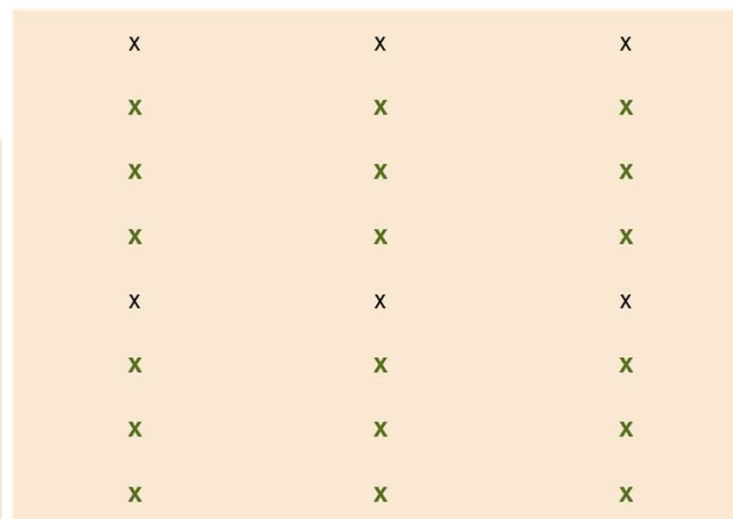


Row spacing

80 cm

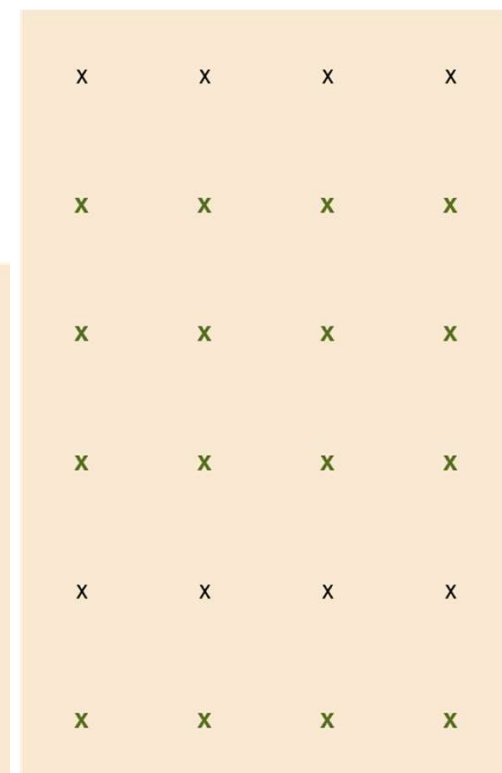
Distance between plant

5.2 cm



40 cm

10.4 cm



20 cm

20.8 cm

RESULTS OF 2 TRIALS : SOWING EQUIPMENT, PLANTING CONFIGURATIONS

Trial 1 on ploughing

2 Sowing equipment X 3 seed density

Row spacing 12.5 cm



Grain drill
(volumetric seeder)

Very early maturing hybrids

Low seed density
26.3 plants / m²

Recommended seed density
36.4 plants / m²

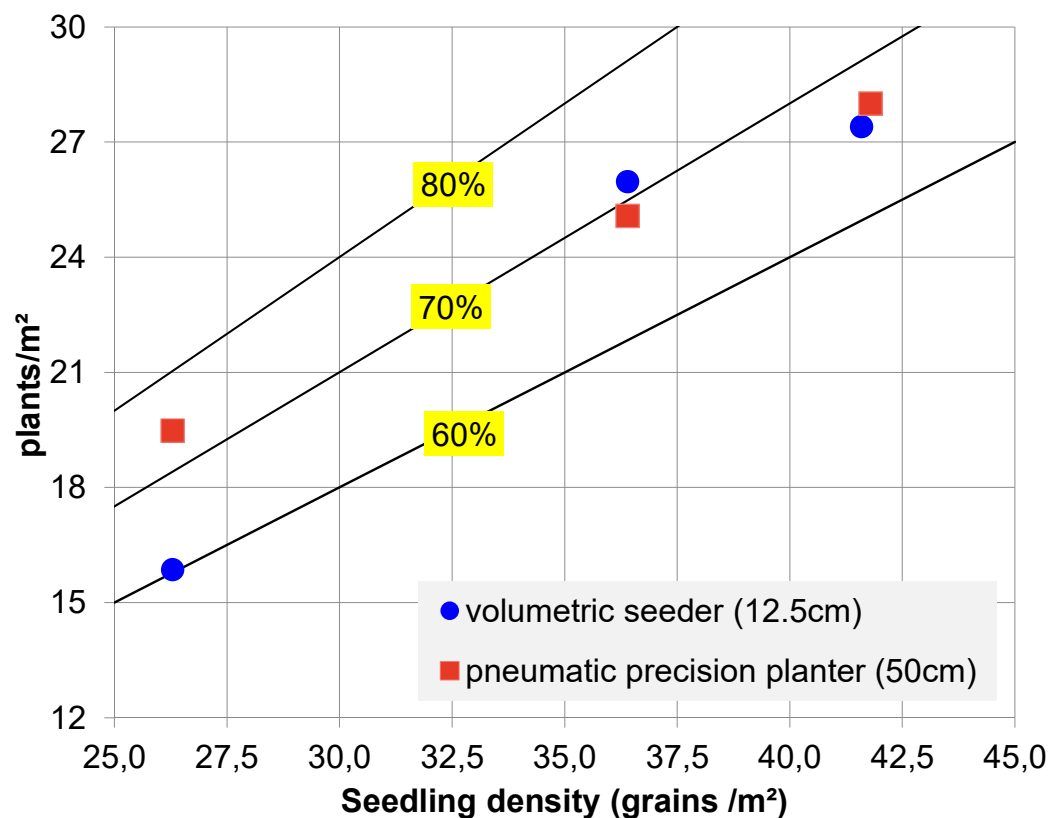
Row spacing 50 cm



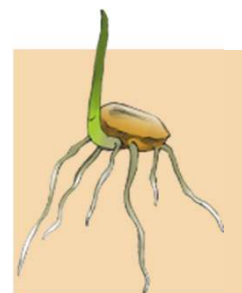
**Pneumatic
precision planter**

High seed density
41.7 plants / m²

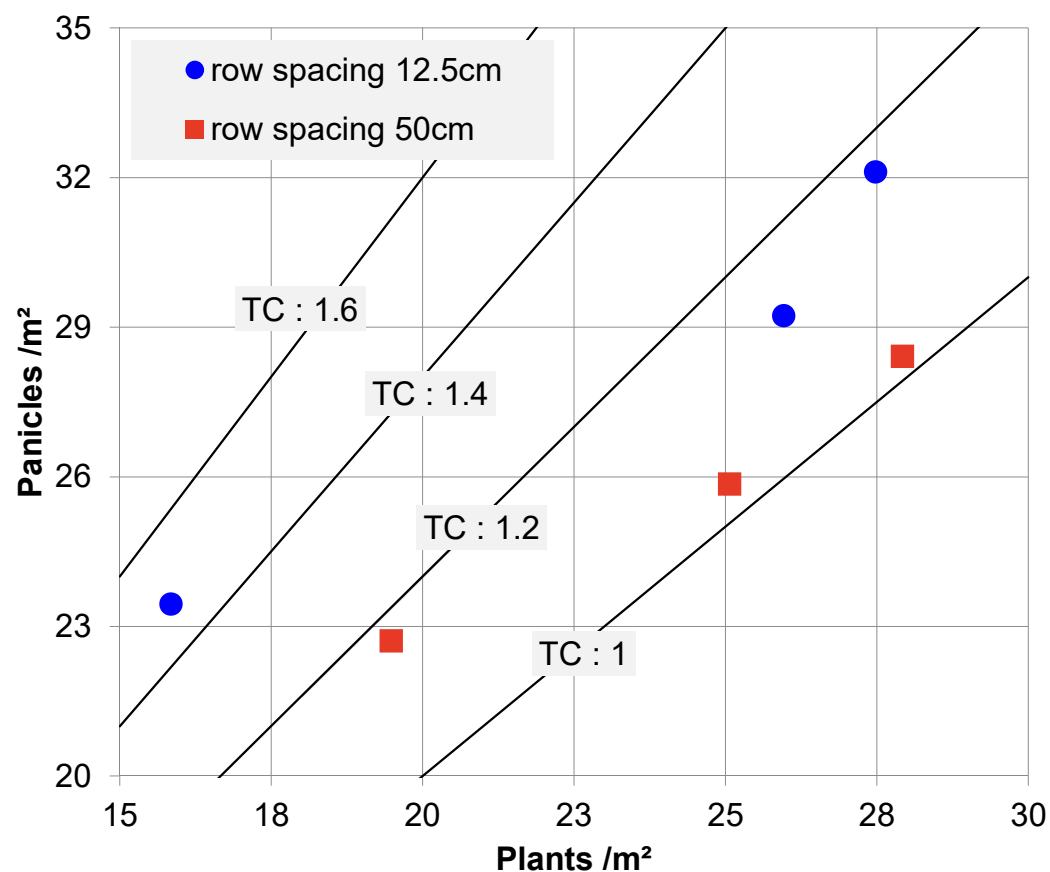
EMERGENCE QUALITY



=> In good condition, emergence quality is equivalent between volumetric seeder and pneumatic precision seeder



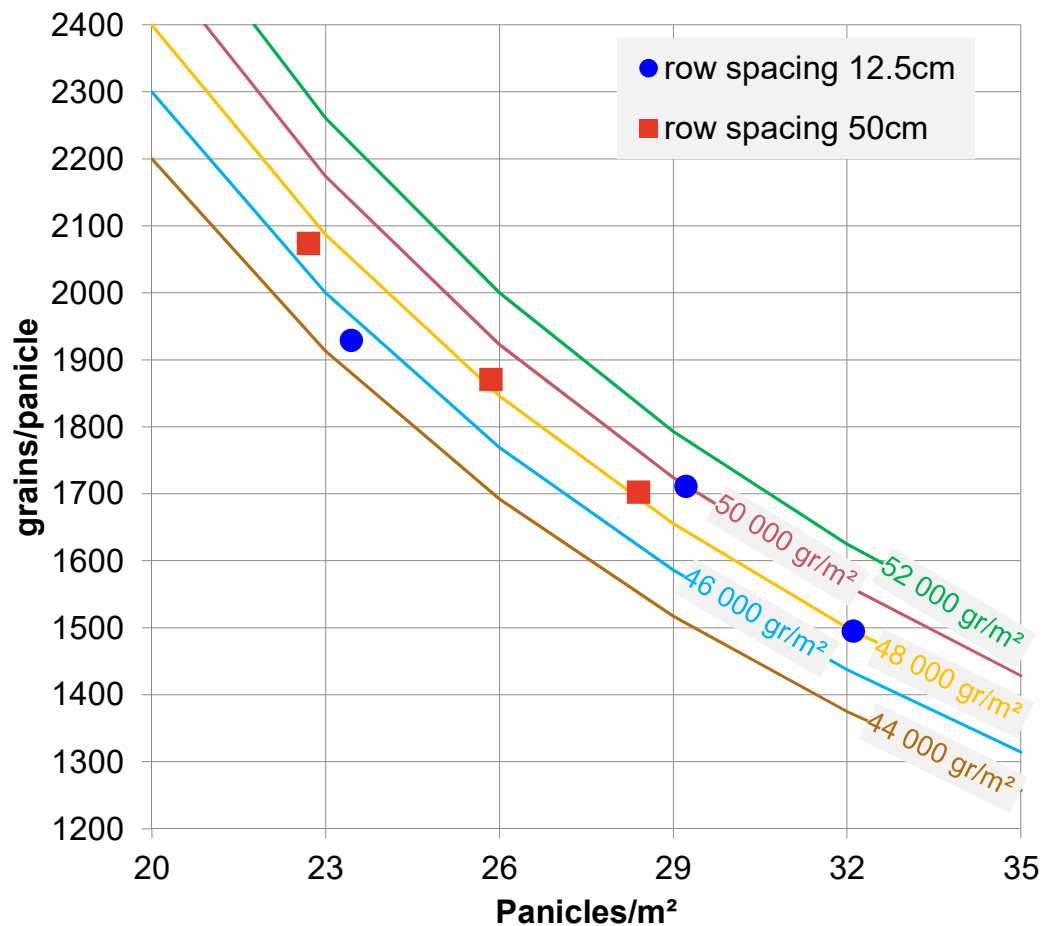
PANICLE DENSITY - TILLERING



(TC) Tillering coefficient : panicle number / plant

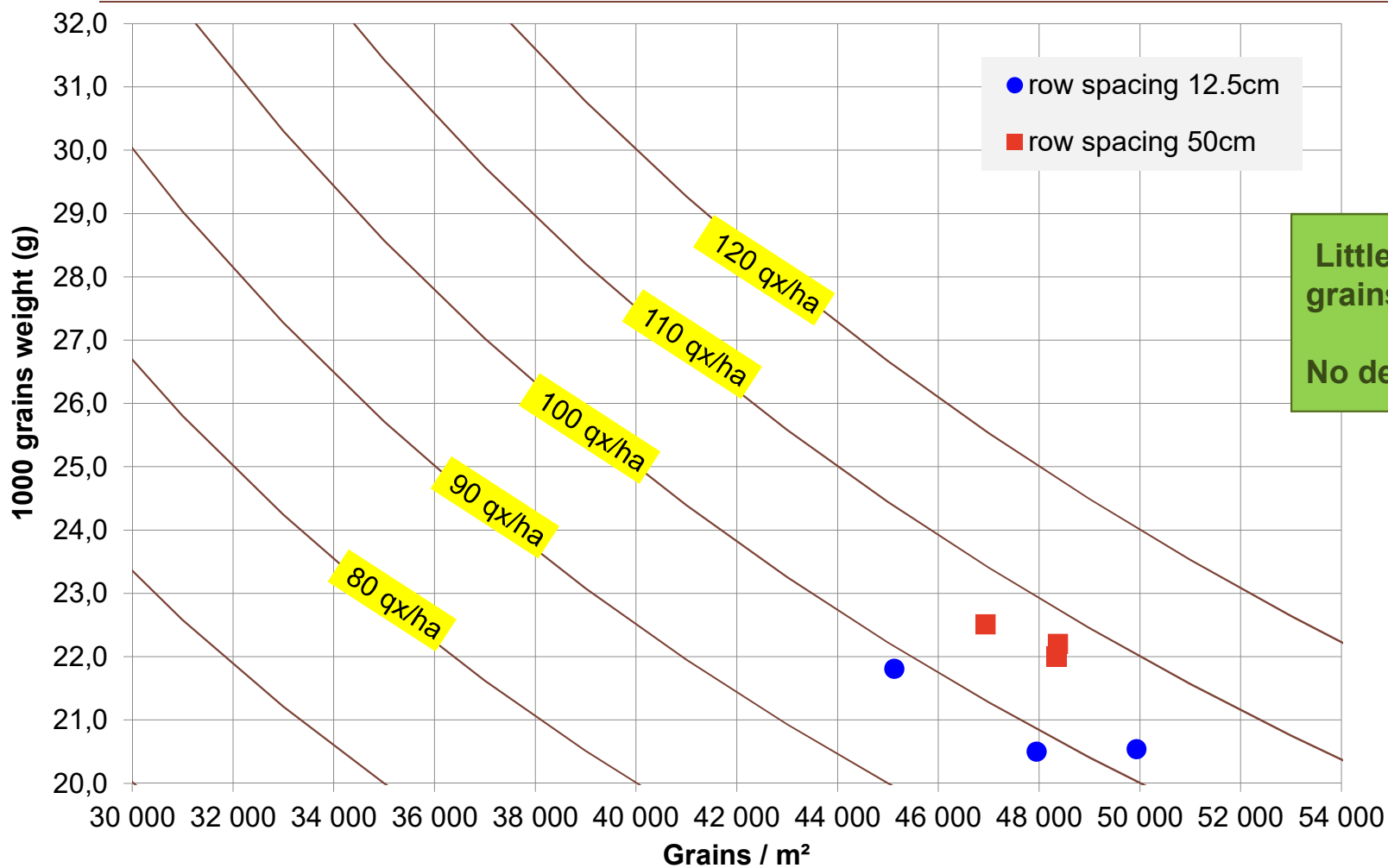
- Higher tillering with low plant density
- Higher tillering with low row spacing

FERTILITY : GRAIN / PANICLE → GRAIN / M²

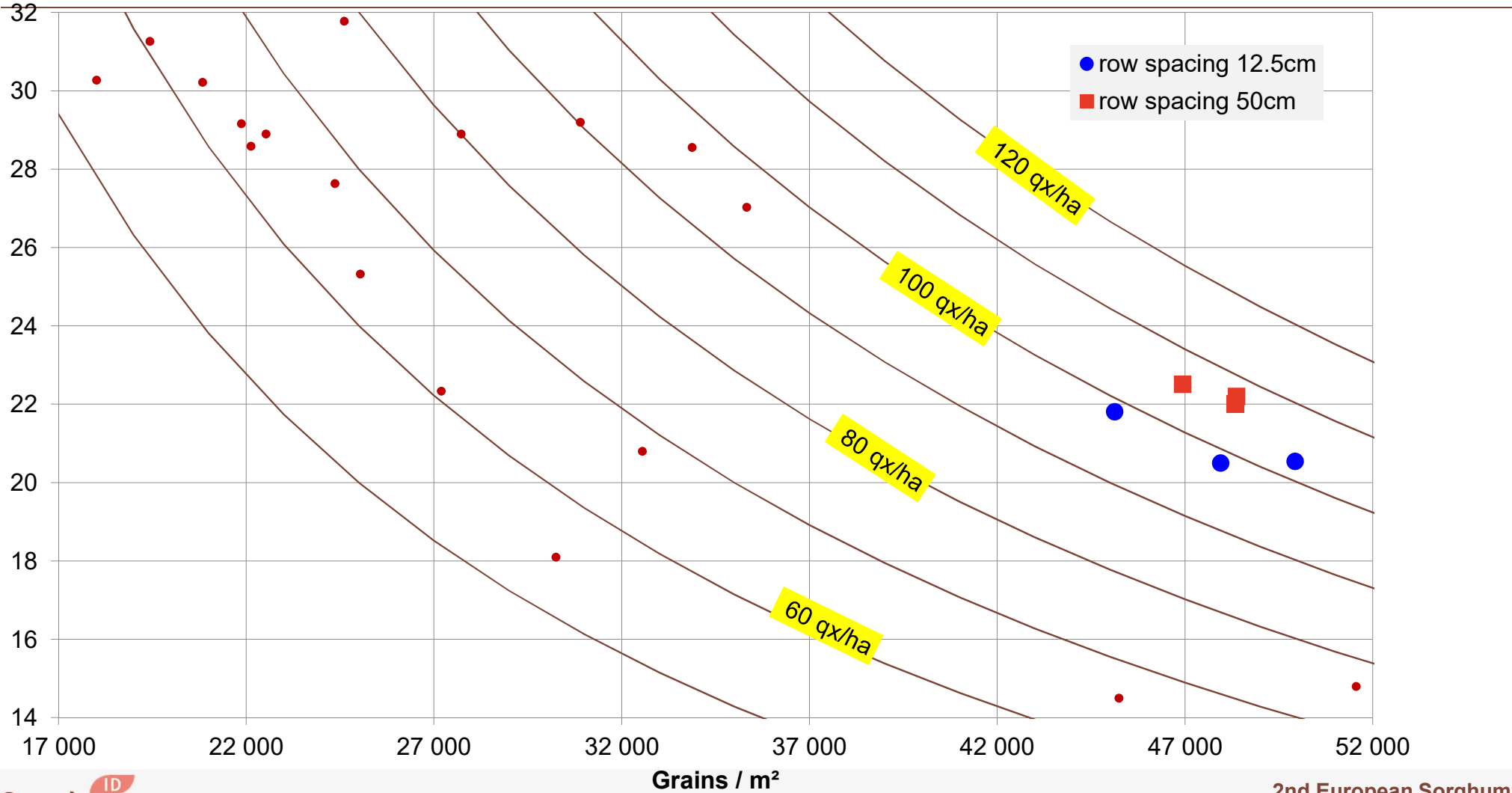


Grains / m² : adjustment between panicle number and grain / panicle

YIELD



YIELD COMPONENT



RESULTS OF 2 TRIALS : SOWING EQUIPMENT, PLANTING CONFIGURATIONS

Trial 2 on direct seeding

2 Sowing equipment

volumetric direct seeder

Row spacing 33 cm

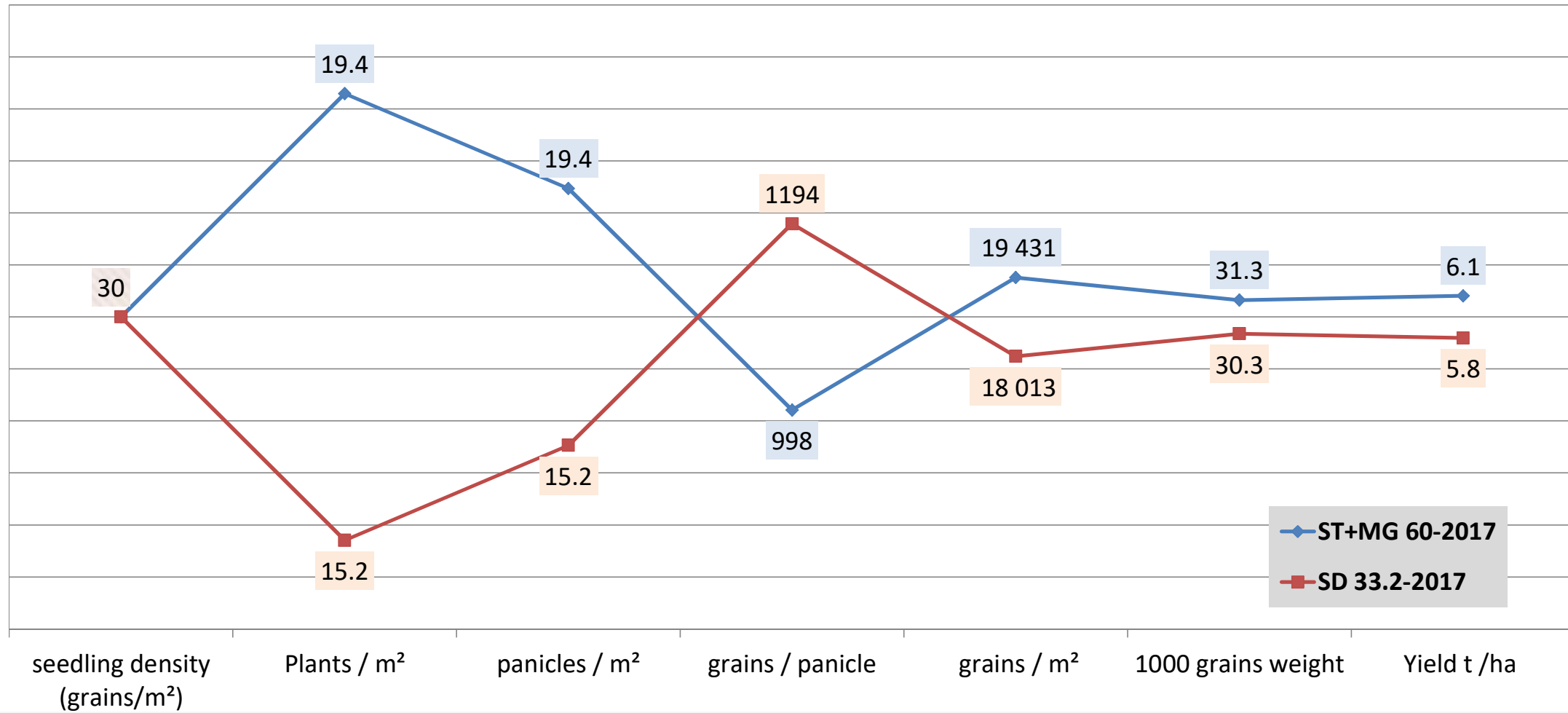


Strip till + precision direct planter

Row spacing 60 cm



YIELD ELABORATION DEPENDS ON PLANTING CONFIGURATIONS



STARTER FERTILIZER (LOCALIZED A SEEDLING)



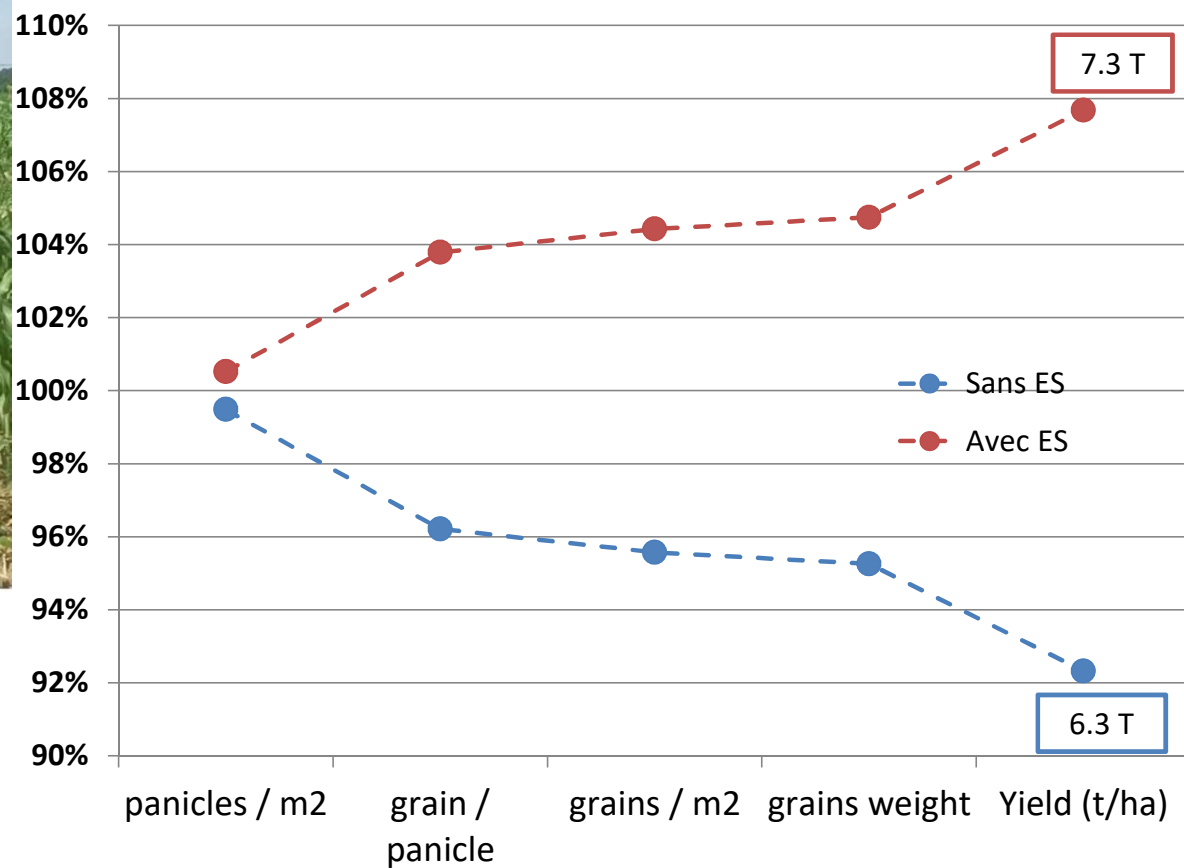
WITHOUT

P : 0

WITH

P : 69 U

N : 84 U



CONCLUSIONS

Sorghum planting : a key stage for crop success



✓ Small seed



✓ Thermal requirement



✓ Moderate emergence vigour

- Seedbed quality
- Seedling quality (depth, regularity of distribution)
- row spacing
- Seedling density
- Seedbed temperature and moisture
- Starter fertilizer



Sorghum ^{ID}



