Early planting of winter barley - the risks for maximising yield potential

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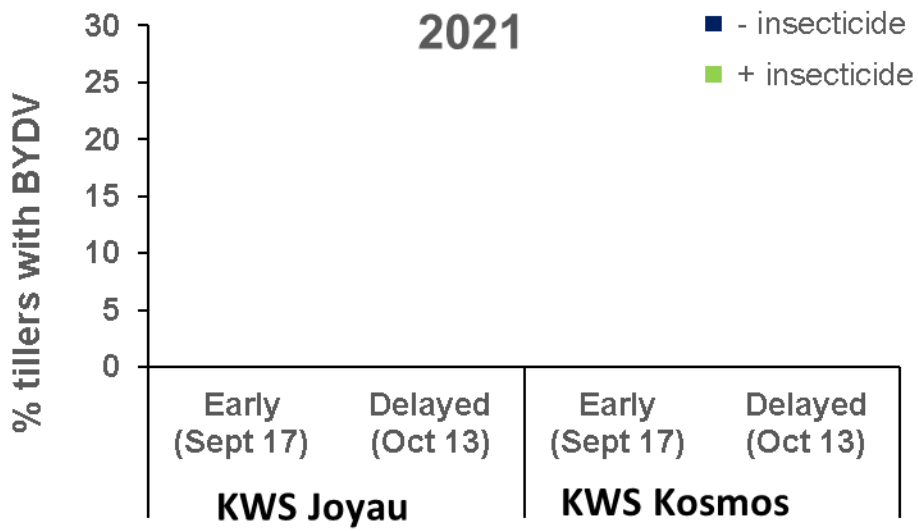
Introduction

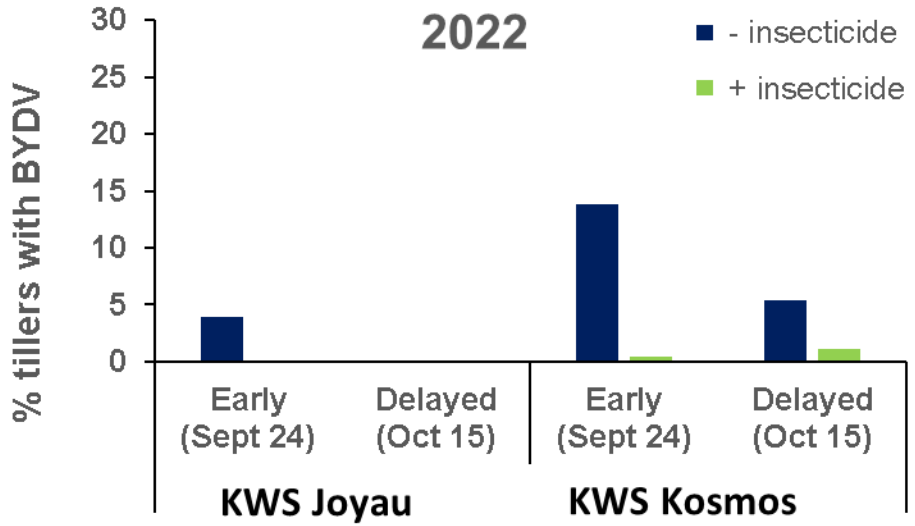
- Two wet autumns likely to stimulate earlier sowing
- Sowing date decisions involve evaluating 2 way risk
- Earlier sowing can increase risk of yield loss due to
  - BYDV
  - Take-all
  - Grass weed issues
- Waiting until optimal timing can result in
  - sowing in poor conditions
  - Late or very late sowing or failure to get sown
- What is the risk and can the risk be managed?

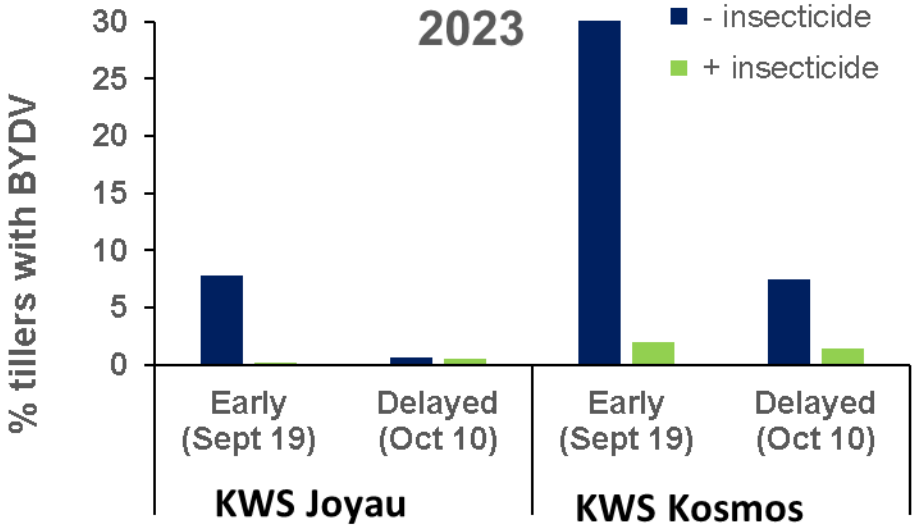
Trial outline

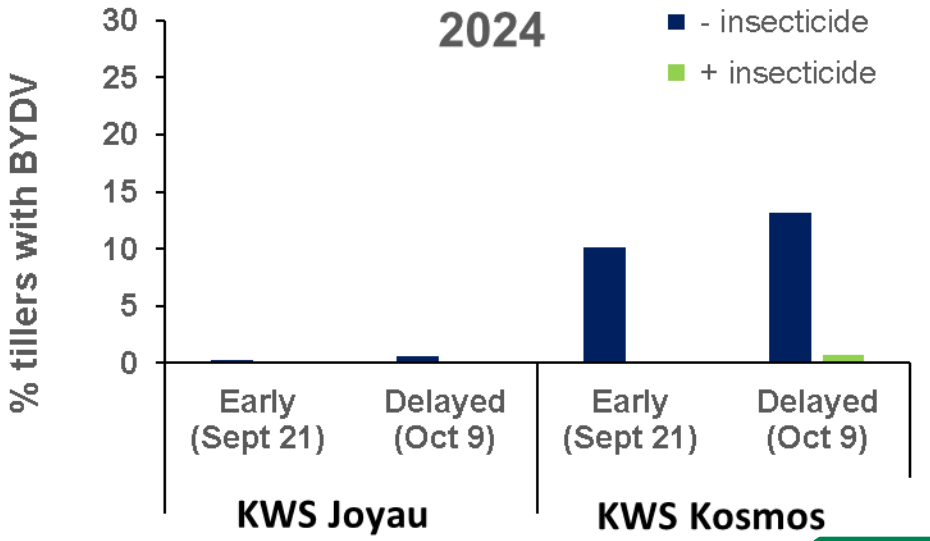
- Four years (2021-2024) at Oak Park
  - after oats in 2021 (low take-all risk)
  - after 1st wheat in 2022-2024 (high take-all risk)
- Sept 20 versus Oct 10 target sowing dates
  - Normal Oak Park sowing date = last days Sept/early days Oct
- KWS Joyau and KWS Kosmos
- Both with and without insecticide
- Joyau with and without Latitude in 2023 and 2024
- Identical management through the year

BYDV incidence

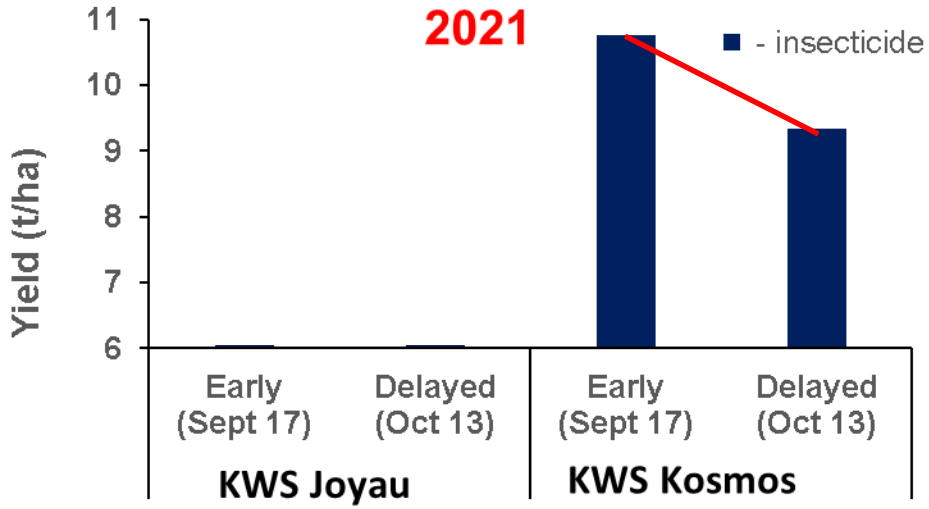


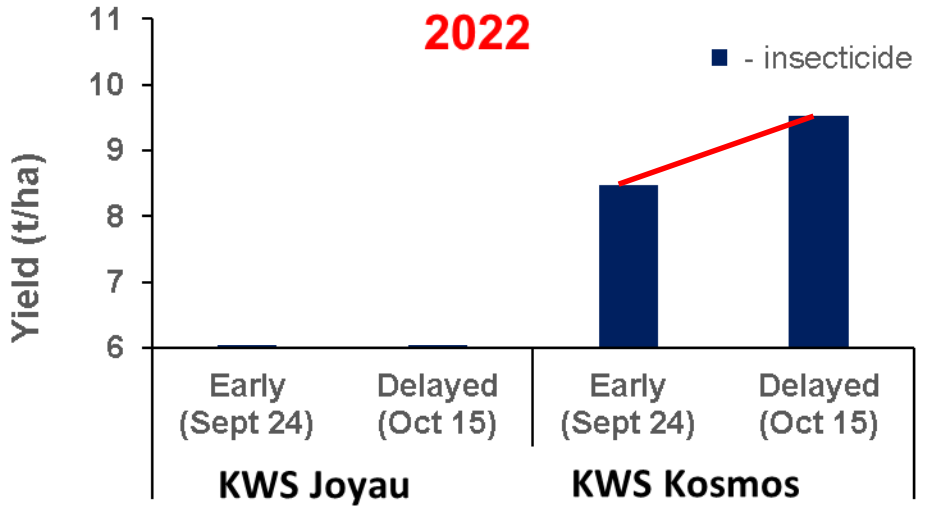


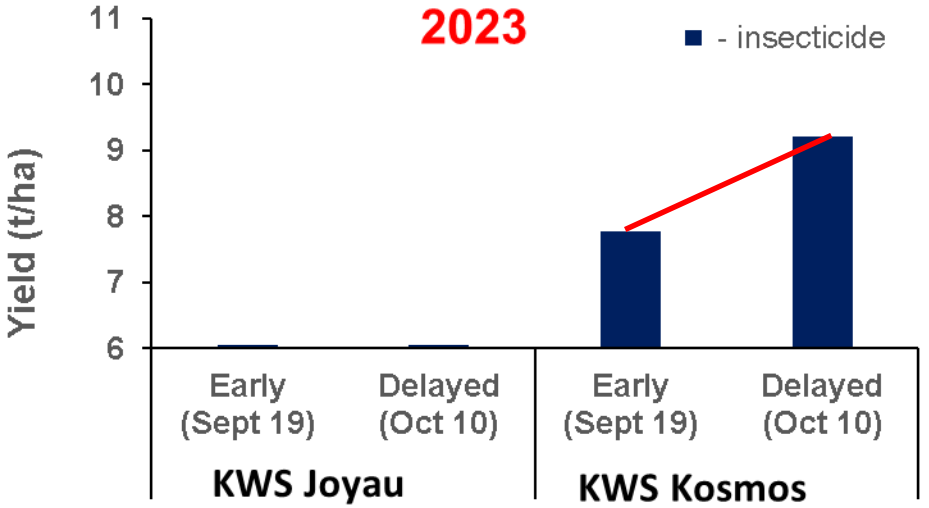


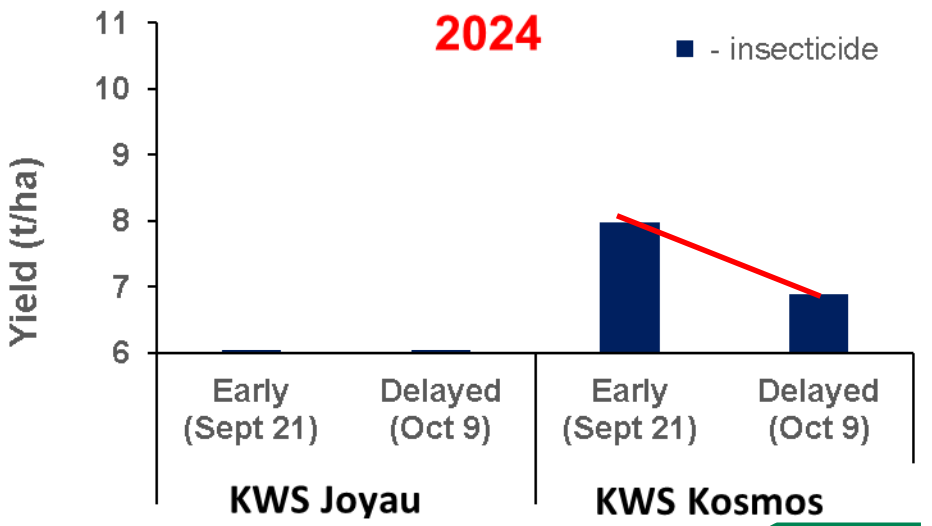


Yield without insecticide

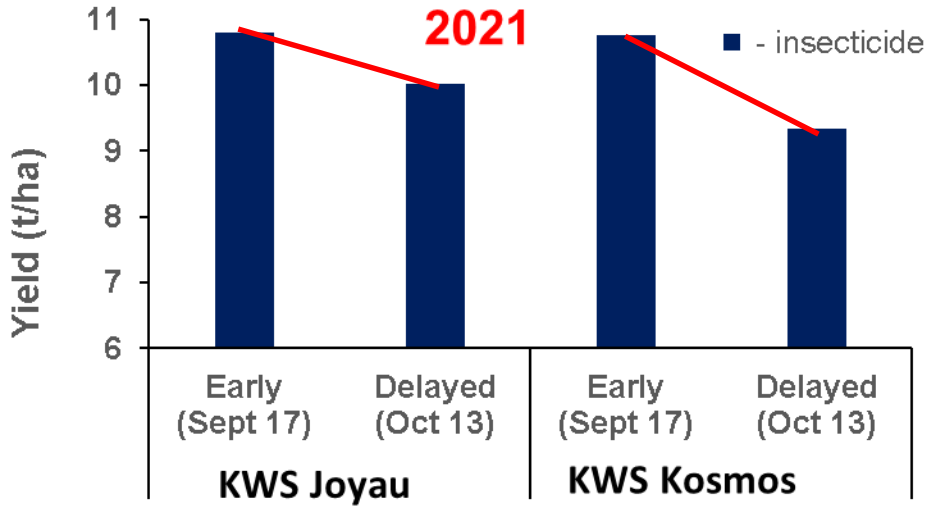


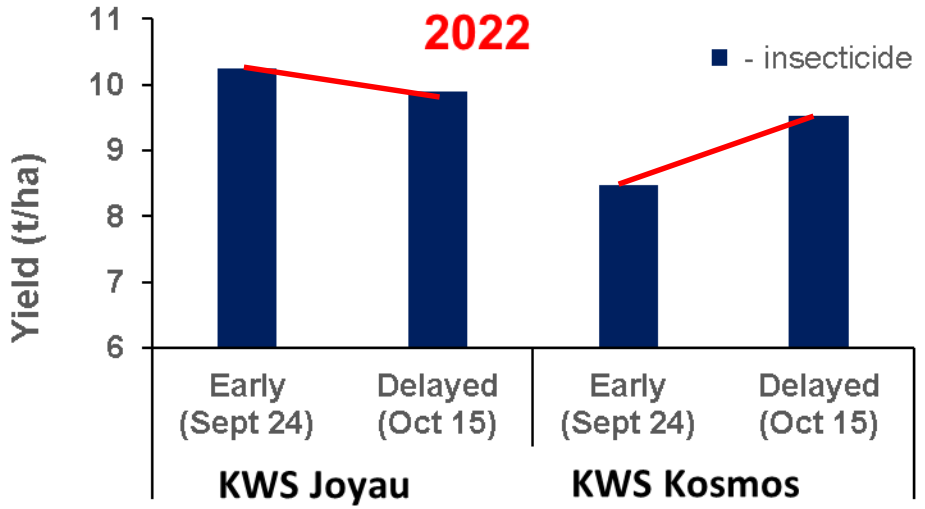


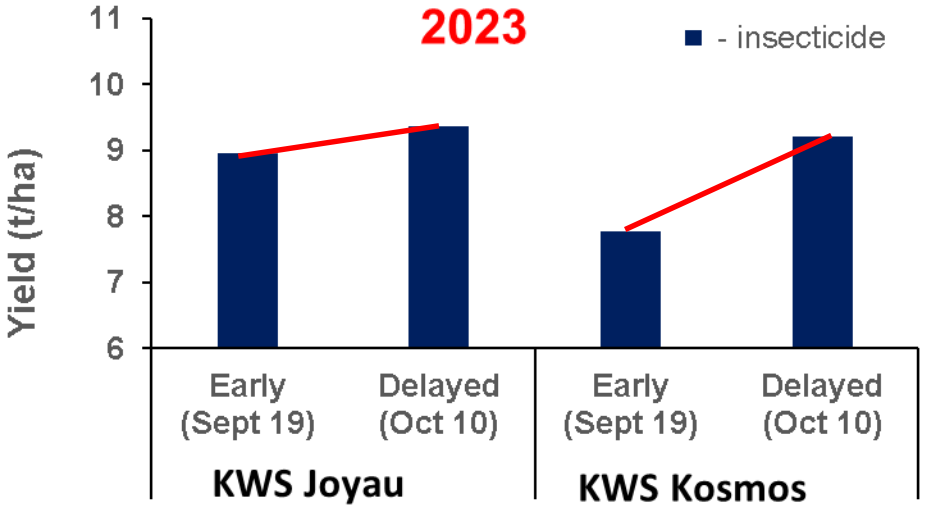


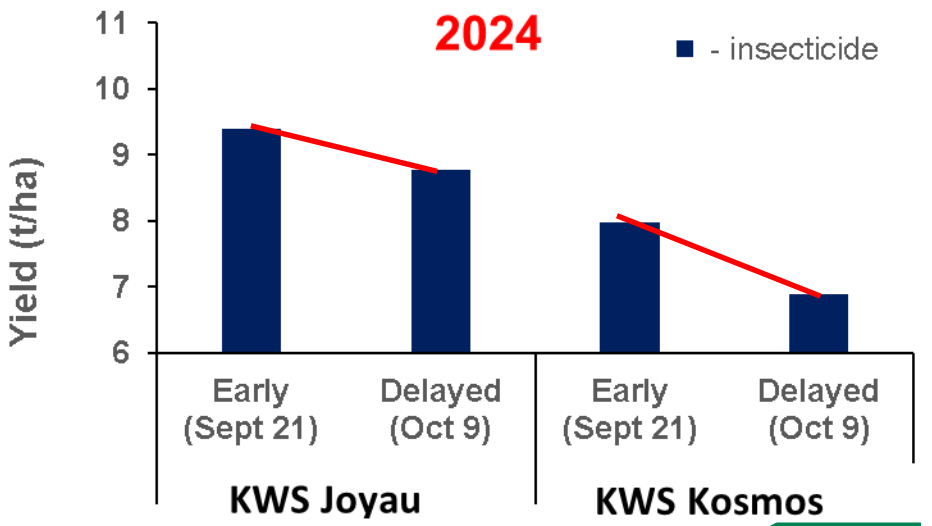


Yield without insecticide - a

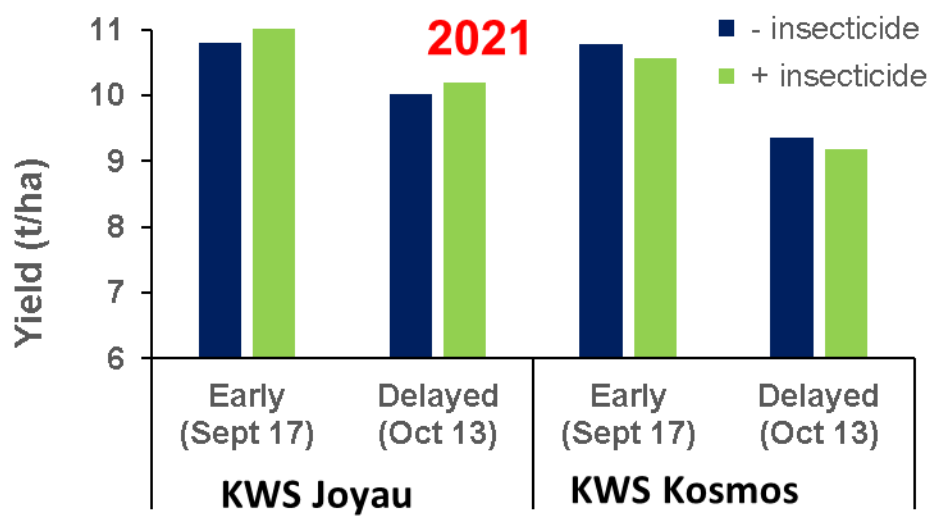


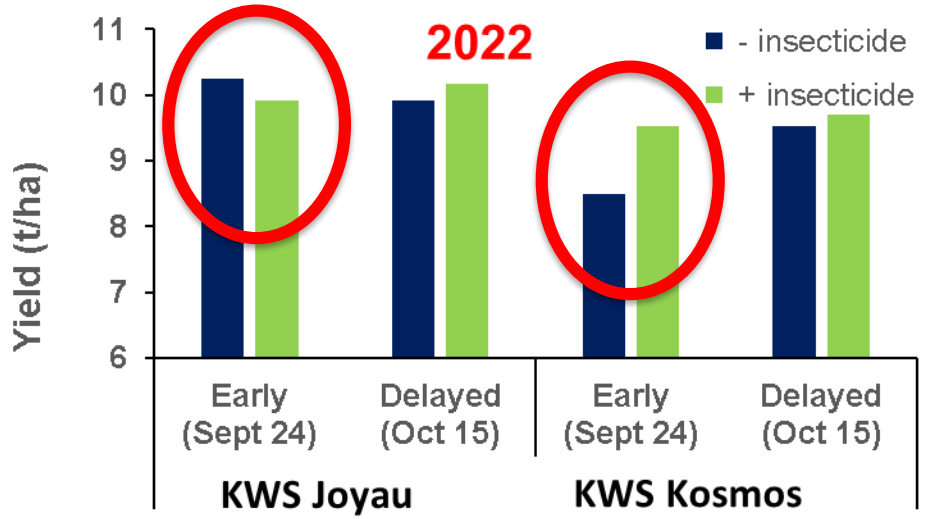


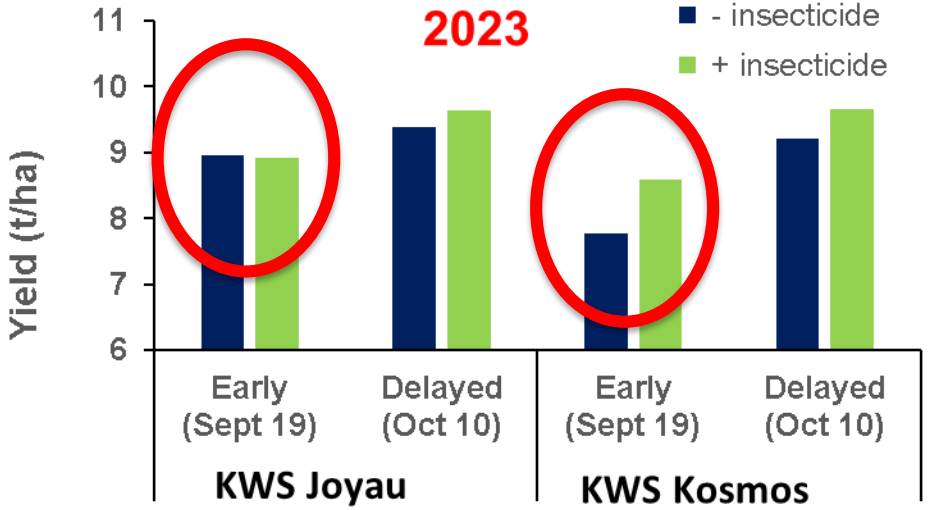


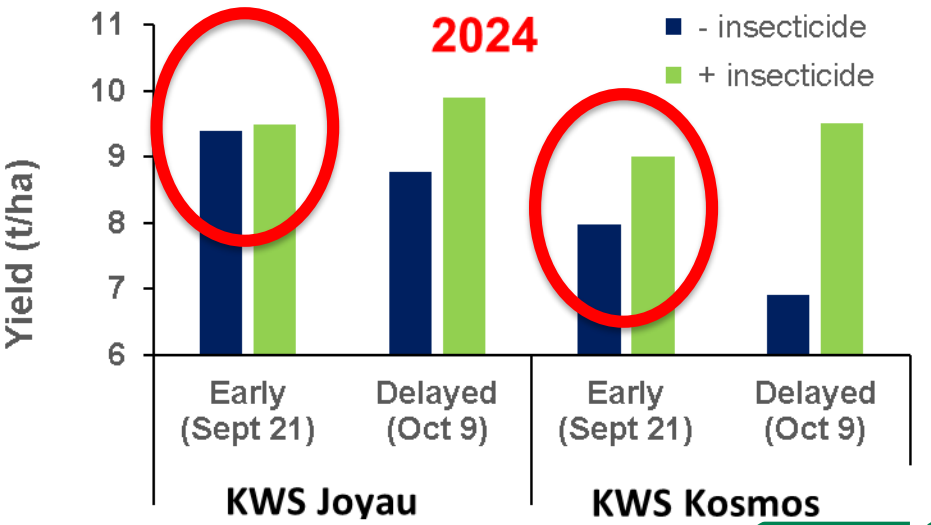


Yield with and without insecticide

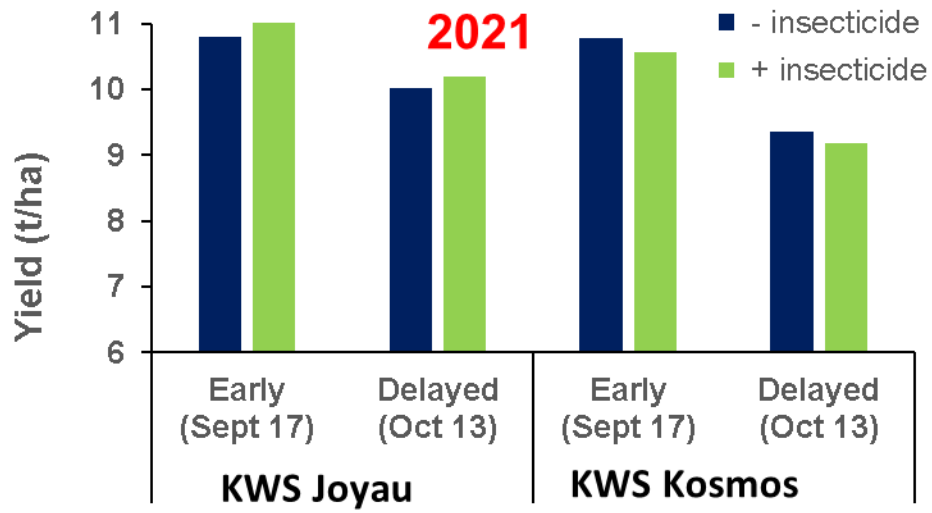


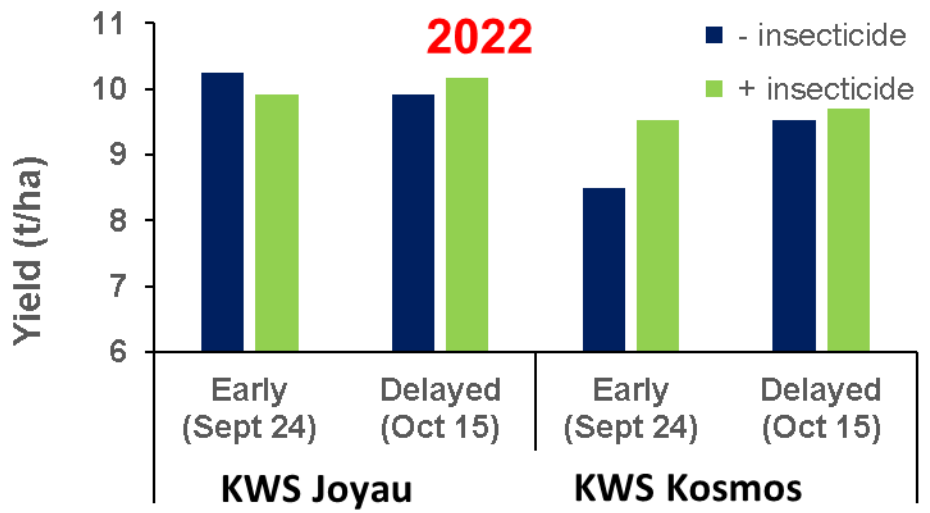


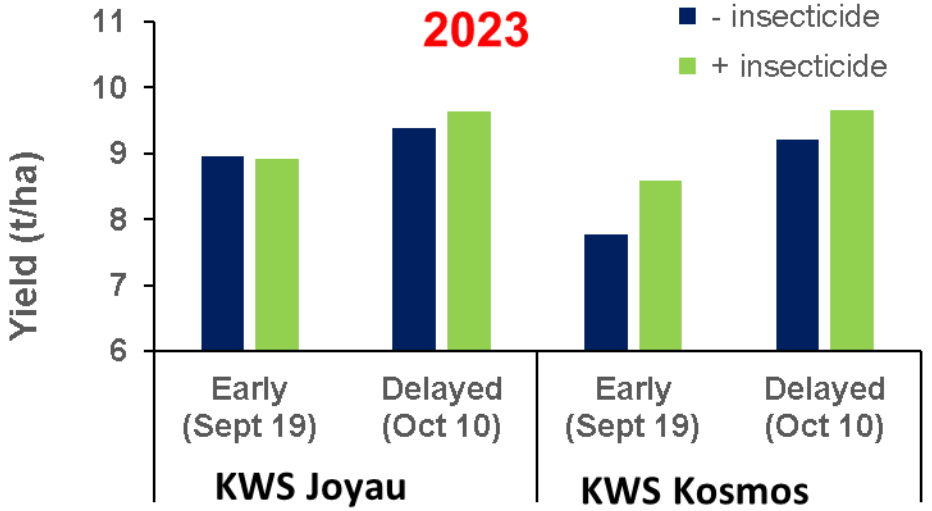


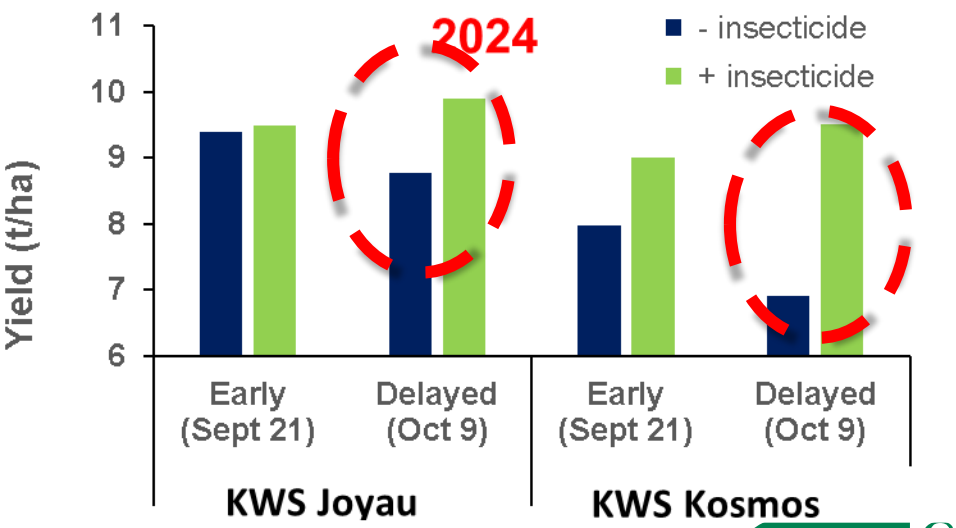


Yield with and without insecticide - a

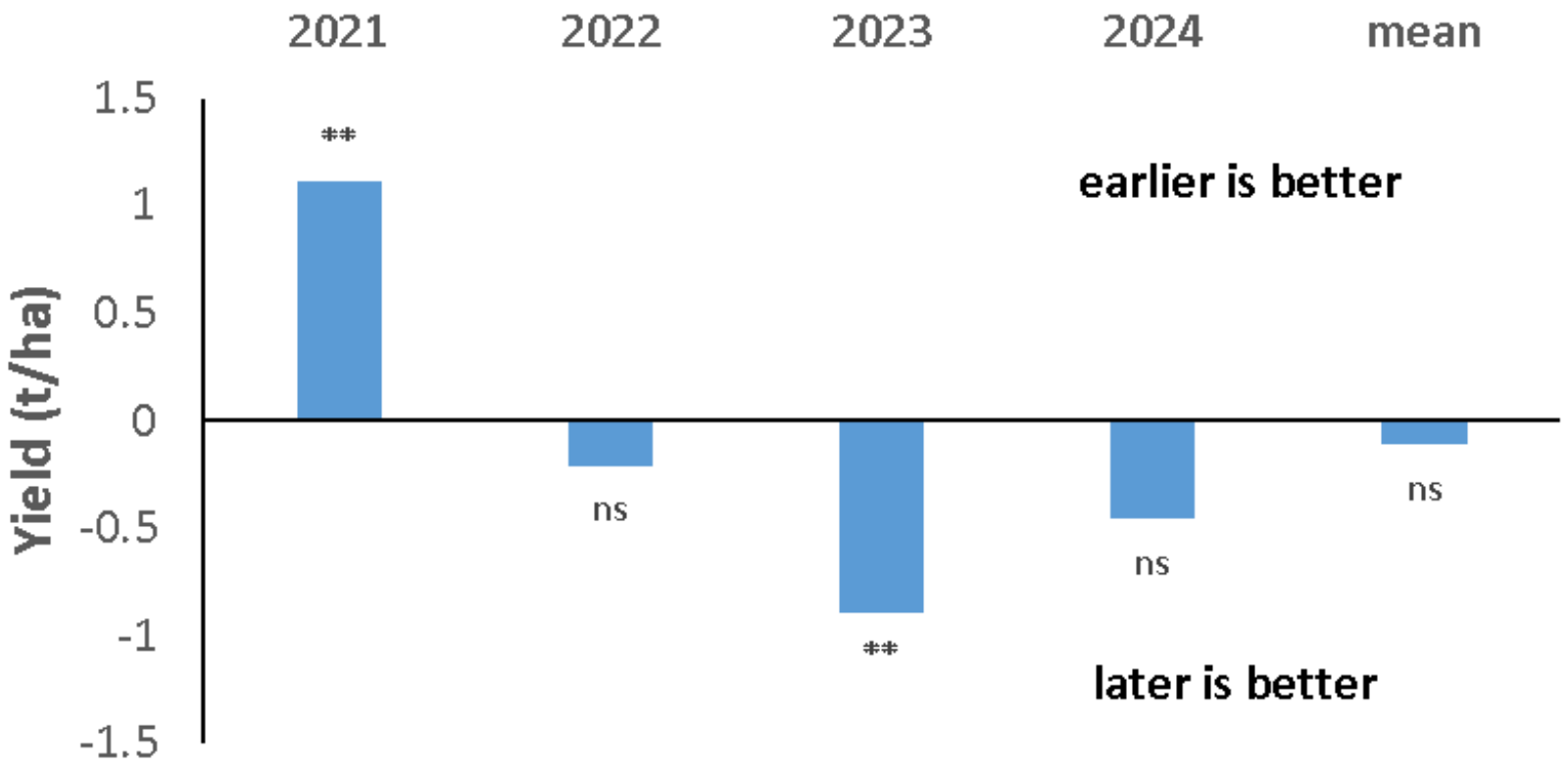








Early vs delayed sowing



Mean of Kosmos and Joyau with insecticide
Negative values indicate that delayed sowing gave higher yield

BYDV risk summary

- Early sowing increases BYDV risk
- Later sowing gives similar or better yield than early sowing where BYDV is a risk
- Tolerant variety reduces risk of yield loss to BYDV when sown early where BYDV is present

Take-all effects

- Rotation and sowing date are key management factors to control take-all
- Previous work suggested Latitude effects in barley are modest when sown late Sept-October
- How does Latitude perform in earlier sown barley?

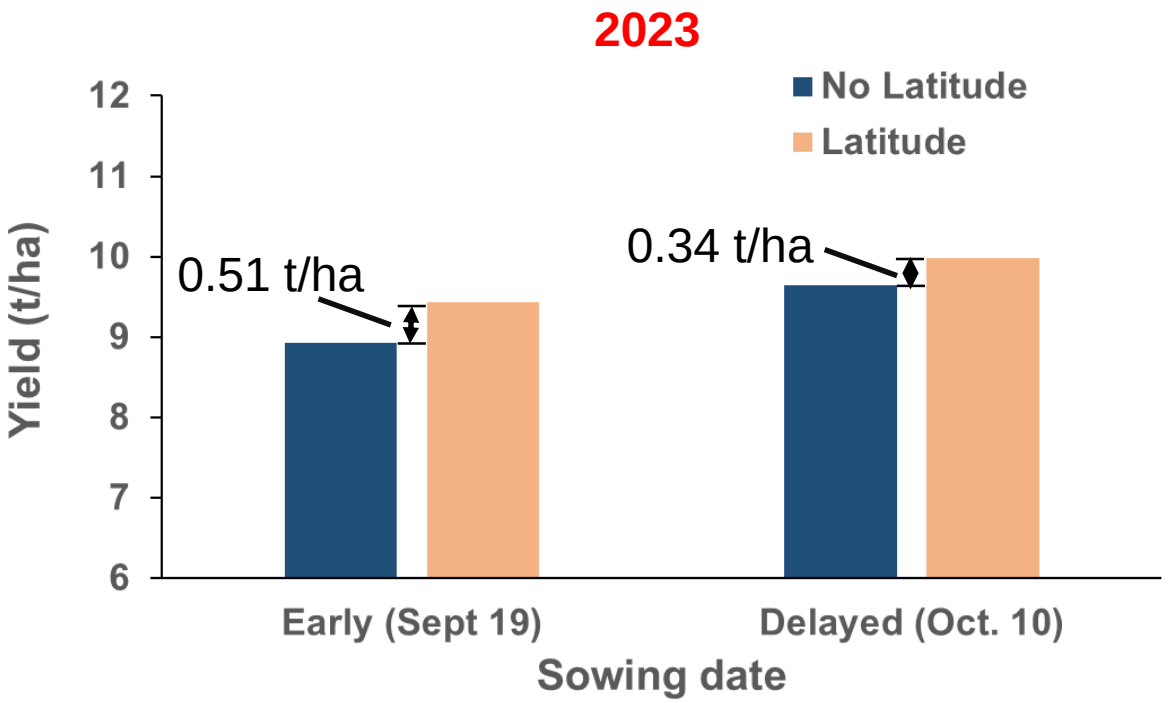
Winter barley yield response to Latitude

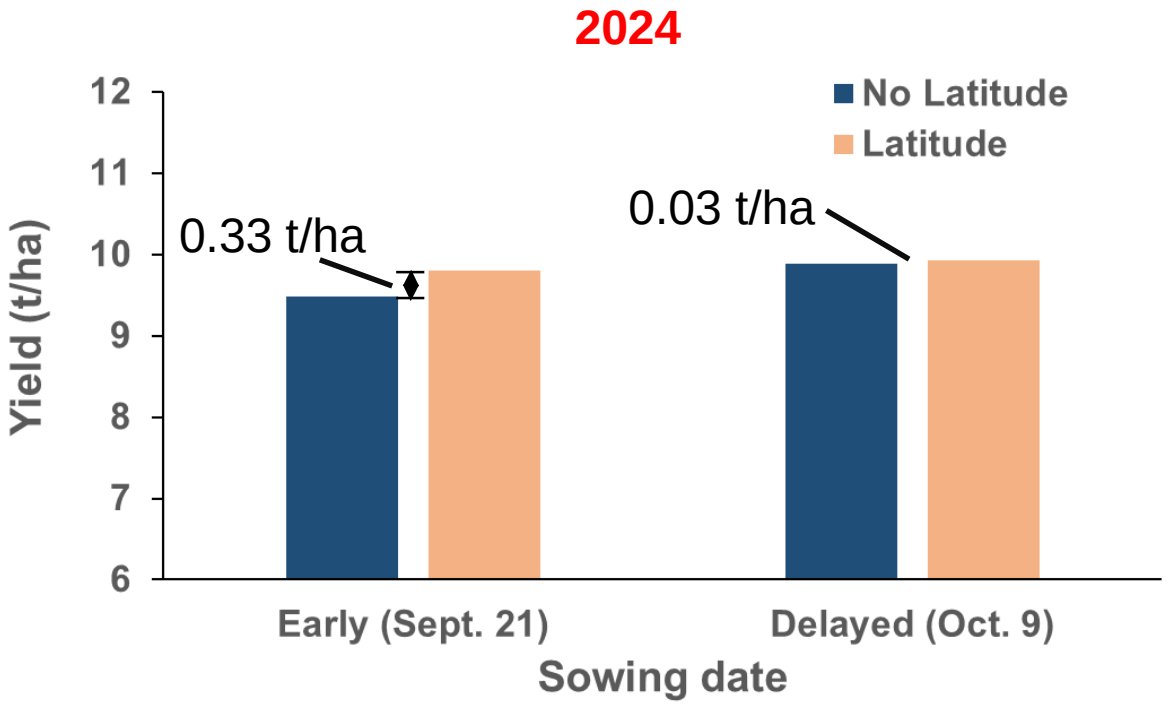
Trial details	Sowing date	Rotation position	Yield response to Latitude (t/ha)
2019 medium textured soil	Oct 1	2nd crop after break crop	0.14
2020 medium textured soil	Oct 22	2nd crop after break crop	0.01
2021 medium textured soil	Sept 29	2nd crop after break crop	0.07
2020 light textured soil	Oct 16	After > 5 barley crops	-0.04
2021 light textured soil	Sept 29	4th crop after break crop	0.52

Take-all effects - a

- 2023 and 2024
  - Second crop after breakcrop = high take-all risk
- Insecticide treated Joyau with and without Latitude
- Early and delayed sowing

Latitude effects on grain yield





Take-all effects summary

- Yield in a take-all situation was generally highest with delayed sowing
- Latitude application could avoid some yield loss due to take-all for early sowing
- Economics of Latitude in barley can be marginal

Conclusions

- Early sowing may reduce weather risk but increases biotic risk
- Tolerant varieties reduce BYDV risk
  - If sowing early consider a tolerant variety
- Latitude has modest effect on take-all, sowing date still important
- Grass weeds will be more problematic with early sowing
- Point in rotation is a factor
  - Sowing after a break crop is less risky (take-all)
- Do you need to sow barley early?
  - Enterprise scale has an impact