

BYDV and Climate change: why important?

Piotr Trębicki, Narelle Nancarrow, Jo Luck, Angela Freeman, Audrey Delahunty, Alan Yen and Glenn Fitzgerald

BYDV infected wheat- under elevated CO₂



1. Early symptoms expression and higher virus titre



aCO₂
BYDV



aCO₂
Sham



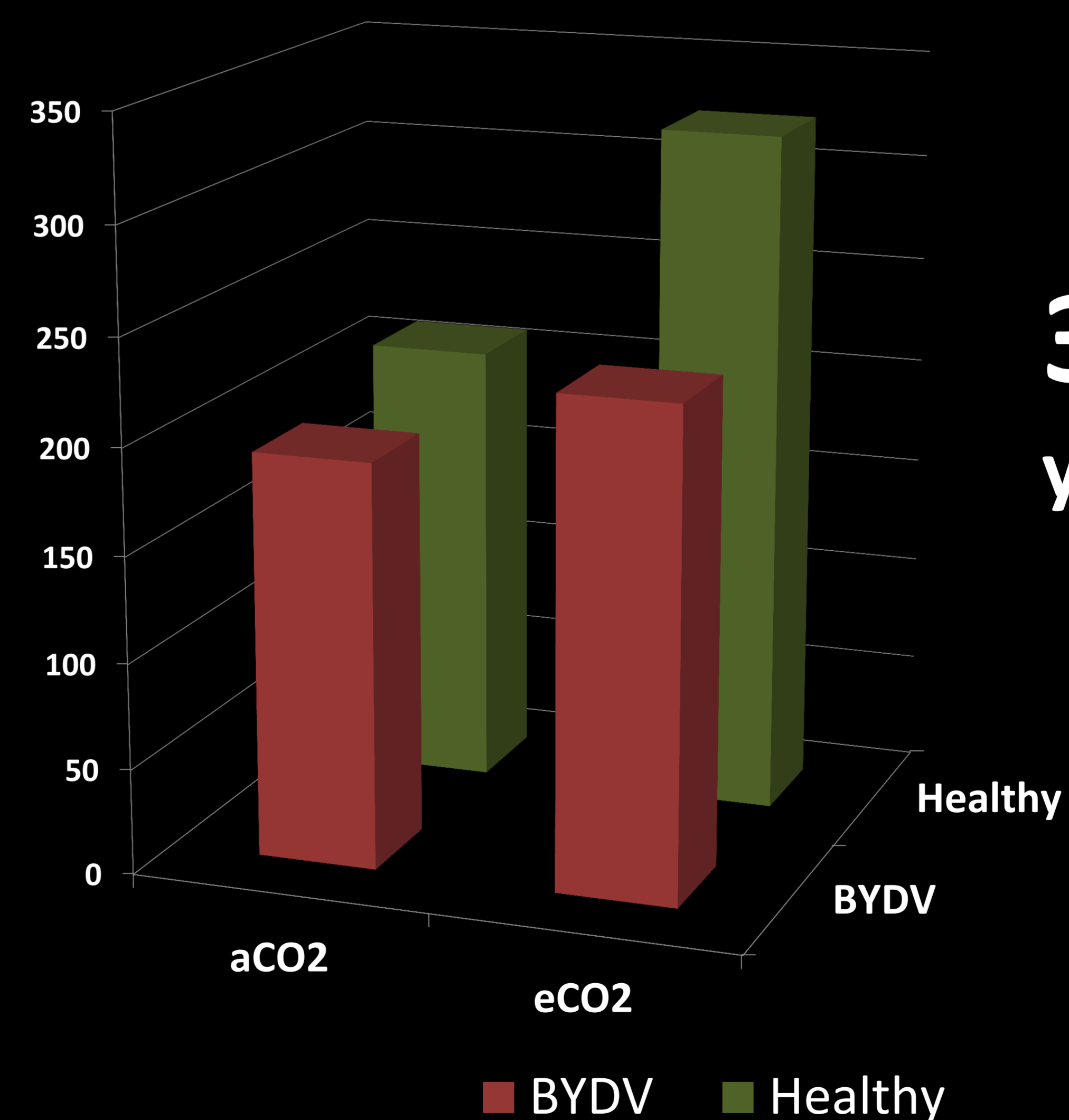
eCO₂
BYDV



eCO₂
Sham



2. Delayed development



3. Significant yield penalty

Barely yellow dwarf virus (BYDV) is an aphid transmitted disease of cereals. Economically, BYDV is the most important virus disease worldwide, effecting: plant vigour, yield and grain quality.

1. Chamber and FACE experiments showing, under elevated CO₂ early and advanced BYDV symptoms expression compared to ambient, RTq PCR also shows a significantly higher virus titre.
2. Chamber and FACE experiments showing delayed development of plants infected with BYDV, grown under elevated CO₂.
3. FACE experiments showing 28.5 % yield decrease due to BYDV infection under elevated CO₂, compared to 8.65% under ambient conditions.