



Winter oats: Maximising grain numbers

Oat yield - driven by grain numbers

Grain numbers - determined by grains per panicle

Panicle Development

- The oat panicle starts to develop in early spring. First sign of development is a double ridge
- GS30: The basic structure of the panicle has been formed
- GS32: Grain development underway



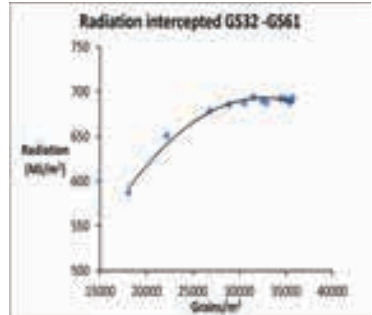
Notes: _____



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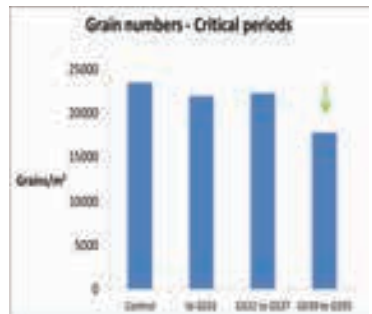
Radiation interception

- **Grain numbers** increase with radiation intercepted between GS32 and GS61
- **Nitrogen** is needed to maximise radiation interception – applied by GS32
- Leaves need to be kept free of disease during this period



Critical period

- Final grain numbers determined from GS39 – GS55
- Stress during this period will lead to grain abortion

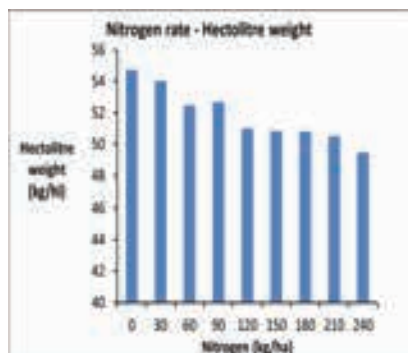
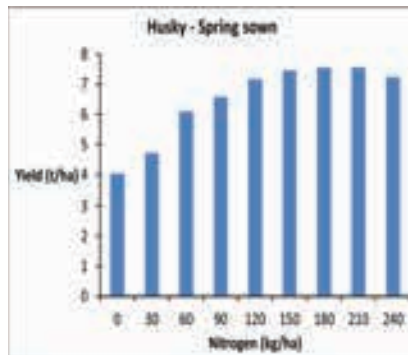


Notes: _____



Spring oats: Nitrogen fertilization

- Optimal N rate for spring oats (Index 1) 120-150 kg/ha
- N splitting strategy for spring oats will not affect yield as long as N has been applied by GS30
- Hectolitre weight falls with increasing N rate and with delayed application



Notes: _____



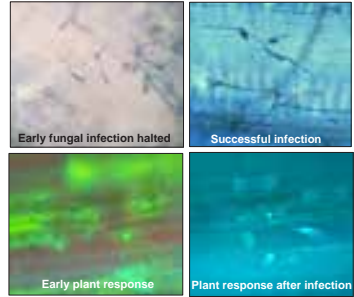
Powdery mildew of oats



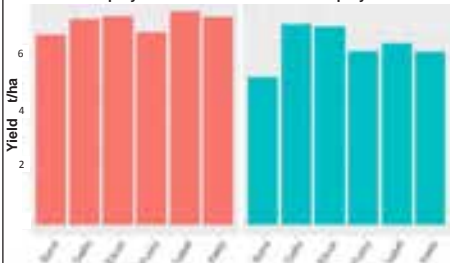
Assess varietal resistance in the field + glasshouse



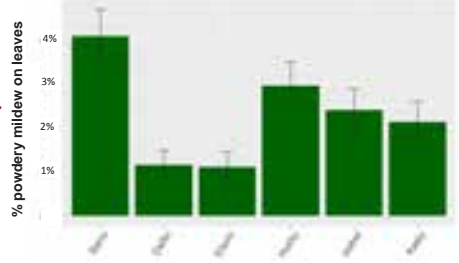
What is the basis of varietal resistance?
Assess infection under the microscope



Yield from sprayed & unsprayed plots



Level of powdery mildew infection



Use of resistant varieties = Protect yields & lower fungicide inputs

Notes: _____
