



ICM Approach to Take-All

- Donald Dunbar



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2nd Wheat Disappointing?



- Early Senescence
- Whiteheads
- Shrivelled Grain
- Low Yield
- Low Specific Weight



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Root and stem diseases




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Take-All and Eyespot


- Restrict uptake of water and nutrients
- Reduce yield
- Reduce quality
- Difficult to diagnose / treat



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Take-all in wheat



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Take-all seed treatments



- Jockey ~~X~~ broad spectrum (expired 2016) – specific activity on take-all and rust
- Tripod / ~~X~~ Daytan - (expired 2016)
- Latitude - specific activity but still need single purpose dressing
- Nothing new in the pipeline



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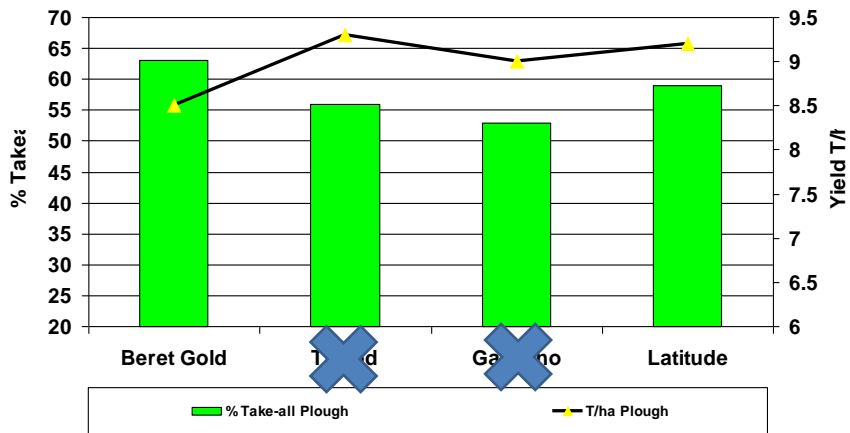
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Impact of seed treatment on take-all and yield

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- Don't only rely on a seed dressing for control
- Draw on a number of integrated control measures



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Take-All Fungus



- Attacks roots at any stage
- Wheat suffers most but Barley is also affected
- Primary infection in autumn from inoculum in soil and stubble trash.
 - Favoured by mild wet winters
- Secondary infection spreads root to root from autumn infected plants
 - Favoured when high primary infection and wet springs
- 2nd & 3rd Wheat worst affected



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Take-All



- Dry summer compounds effect
- Greater impact on lighter soils as;
 - Inoculum spreads more easily
 - More prone to drought stress
- Low pH increases effect
- In break crops take-all fungus can survive on some grass weeds particularly couch and barren brome



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Rotation



- Inoculum declines rapidly in a break crop e.g. broad leaved crops Oilseed Rape, Beans, Potatoes
- Oats affected by a different strain of fungus so does provide a take-all break
- Grass break – requires more than 1 year to allow antagonistic fungi to develop
- Fallow stubble – Avoid severe infection by treating volunteers and grass weeds with glyphosate



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Soil Factors



- Light soils tend to have more disease as take-all spreads easier
- Keep drains and ditches well maintained to avoid wet soils
- Avoid compaction
- Optimum pH - across all the field



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Cultivations



- Ploughing reduces primary infection source
- Firm seedbed required
- Minimum Tillage – 2nd wheat exposed to greater primary infection
- After take-all decline reached little difference between plough or min-till but quality of seedbed a factor in both

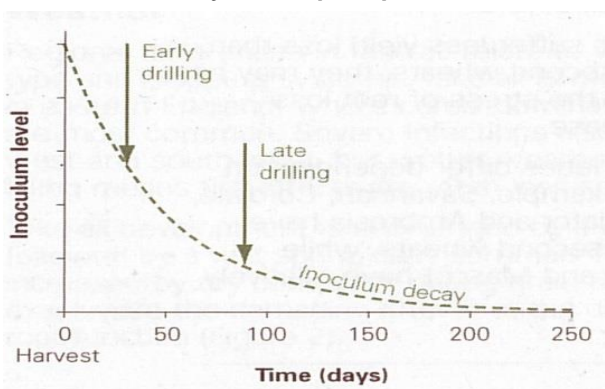


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Drilling Date



- Inoculum decay is rapid post harvest



AHDB Take-All in winter wheat 2016



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Crop Nutrition



Nitrogen

- Timing important
- Apply early to crops at risk (60kgN/ha)
- Follow by single main dressing rather than multiples
- Evidence that Take-All is less severe with ammonium sulphate nitrogen

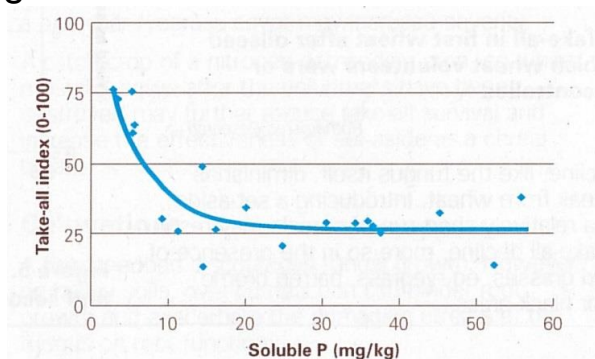


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Phosphate



- Low phosphate soils favours take-all
- Target Moderate + or ADAS Index >2



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Other Nutrients



- Potash
- Sulphurs
- Manganese

Deficiency have all been linked to increased take-all severity



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Varieties



- No evidence of variety resistance
- Some varieties suffer less and seem better able to withstand disease stress
- Select varieties with rated good as 2nd wheat
- Savello, LG Sundance, KWS Barrel
- Hybrids?



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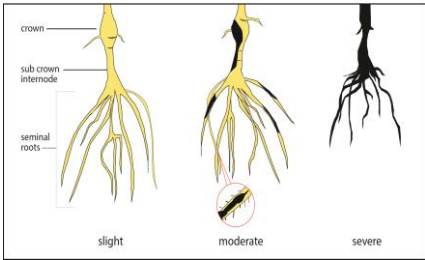
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Take-all ICM




- Rotation for take-all decline
- Weed control
- Soil type, pH and structure problems
- Cultivations
- Attention to drilling date
- Nutrient – Nitrogen & Phosphate
- Varieties
- Seed Dressing


TAKE-ALL (HAYDIE) - root + stembase symptoms




Picture courtesy of Dept Food Agriculture, Western Australia



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Thank You







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