



Building OSR Resilience (3)

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The growing problem of clubroot is the focus of the third in our series of special articles on ways of building greater resilience into oilseed rape growing to cope with today's crop production and marketing uncertainties

Getting to the root of a growing problem



Club root is becoming far more widespread these days, according to the latest national crop intelligence. Indeed, leading advisers are urging growers across the country to assess individual field risks with particular care ahead of drilling and employ the best possible controls to combat the disease wherever necessary.

Confirming a growing volume of anecdotal reports over the past season, a special early 2017 Agrii investigation reveals that almost two thirds of agronomists are seeing more problems with club root these days. What's more, the majority of these are finding the disease in fields where it has never been seen before – primarily in patches but in many cases at performance-threatening levels.

"Interestingly, we're now encountering problems in areas and under conditions where club root it has simply not been an issue in the past," pointed out Agrii seed technical manager, David Leaper. "Both our Somerset and Derbyshire iFarms, for instance, have seen the classic symptoms for the first time ever this season.

"As a disease that can survive for 15 or more years in the soil, it may always have been there in many cases, of course. And it may have resulted in poor and patchy growth that were put down to areas of compaction or winter waterlogging, leaving the real cause undiagnosed.



“Among the most important reasons for the current situation identified in our agronomists’ study are the more frequent OSR cropping common place until a few years ago; poor soil pH control in particular and soil conditions in general; warmer, wetter winters; inadequate OSR volunteer and cruciferous weed control; and, more brassicas – as fodder or cover crops – in the rotation.”

These findings echo the experience of ADAS senior plant pathology researcher, Julie Smith who insists that growers throughout the UK need to be especially alert to the threat that club root poses and counter it with the most effective management.

“Across sites and seasons, club root typically causes losses of 0.3 t/ha for every 10% of plants affected,” she explained. “Losses are most severe where dry summers place a particular strain on compromised root systems.

“Problems have increased in recent years and are very widespread this season. This is likely to be because, together with sufficient moisture, we’re seeing autumn soil temperatures remaining above the 16oC threshold needed for infection for longer than usual. At Rosemaund, at least, temperatures didn’t fall below this level until the start of October in 2016. So the earliest sown crops were exposed to infection for approximately six weeks compared to around three weeks in 2015 and just one in 2014. Unfortunately, modelling based on climate change predictions suggest the clubroot growing season will be extended in future years.

“The fact that club root has such a wide range of hosts – including cruciferous weeds and brassica species means that many crops can cycle the disease to increase soil inoculum levels. The resting spores are very robust and can remain dormant but viable for 20 years, ” added Julie Smith. “There is no chemical control option and agronomic strategies are limited.”

Under these circumstances, Dekalb technical specialist, Will Vaughan-France stresses that the key to managing the growing threat as to recognise it, identify areas at particular risk and target them with the most integrated cultural approaches.

“Our latest high performance RL candidate, **DK Pliny** combines recognised resistance to common club root strains with the sort of resilient agronomics previously only available in our susceptible varieties,” he noted. “Most importantly, vigorous establishment and root development provide the best tolerance of infections from other strains of the disease.

“Like other varieties with resistance, it is likely to show some root damage from these strains. However, it enables economic yields to be secured from sites which club root would ordinarily prevent.

“Club root resistance should ever only be used as one element of the management programme,” warned Will Vaughan-France. “Over-reliance on varieties which all share the same original – though multi-genic – source of resistance must be avoided if we are to safeguard this hugely valuable resource from breakdown.”

For sites at risk of club root, key elements of cultural control other than varietal resistance identified by Will Vaughan-France, Julie Smith and David Leaper from their experience include:

- Growing OSR no more frequently than once in every four years;
- Remedying any soil compaction or drainage problems;
- Checking soil pH regularly across all parts of the fields;
- Applying high calcium availability lime to maintain a pH of ≥ 7 ;
- Avoiding early winter rape sowing;
- Correcting boron deficiencies;



- Testing soils for club root in selected unaffected fields; and,
- Minimising soil movement on farm equipment.

*Click here to find out more about our Clubroot variety: **DK Platinum***