Experiment 7: **Allelopathy**

Some plants have allelopathic properties; they exude chemical componds that can affect surrounding plants, normally by inhibiting weed seed germination or vigour. These compounds are released either from the growing plant or when the plant is incorporated and broken down in the soil. Many farmers would like to make the best use of these weed suppressive properties in their rotations (please see box overleaf for a fuller description).

The aim of this survey is collect anecdotal information from farmers who have observed allelopathic suppressive effects on weeds in their rotations. At the same time researchers will undertake a thorough literature review of research work done on the allelopathic effects of plants. We would hope to match the two types of information and in future seasons suggest trials that people might like to do to verify any promising looking effects.

1. Is your farm predominately arable livestock horticultural *(circle one)*

2. What is the postcode, district or county? _____

3. How long have you been organic?

4. Have you observed allelopathic suppression of weeds in your rotation? Y / N

5. If so please elaborate giving brief details of the crop or plant exerting the effect, the weeds suppressed and any details that you think are important.

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6. What research or information on allelopathy would be useful to you?

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Thanks for filling in the form. The overall results of the informal survey will be posted on our weeds website but individual details will remain anonymous. Further information on allelopathy is also available from the website (www.organicweeds.org.uk). We are also looking for farmers interested in sharing information on and experimenting with using allelopathy on their farms. If you would like to be involved please give your contact details below.

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How do I spot allelopathy?

Allelopathy is an effect on your weeds over and above what you might expect from crop competition alone and refers to the direct or indirect chemical effects of one plant on the germination, growth, or development of neighbouring plants. This effect is exerted through the release of allelochemicals while the plant is growing or from plant residues after it dies. These chemicals can be released from around the germinating seed, in exudates from plant roots, and in volatile emissions or leachates from aerial parts. Practically, allelopathy could be used to manipulate the crop-weed balance by increasing the toxicity of the crop plants to weeds or reducing weed germination in the direct area of the crop. Alternatively, a mulched residue of an allelopathic cover crop could prevent weed germination.

So, in your rotations, are there some crops that seem to be suppressing weeds more than you expected? Remember to include green manures or other fertility building crops in your considerations. Observe an area of crop and compare it with a similar area without the crop. Is it cleaner than you might expect? In your rotation are there some combinations of crops where you seen to have less weed problems? Which crops, or combinations of crops are particularly weed free?