



# Water mobility and microstructure evolution in the germinating *Medicago truncatula* seed studied by NMR relaxometry. A revisited interpretation of multicomponent relaxation

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Titre	Water mobility and microstructure evolution in the germinating <i>Medicago truncatula</i> seed studied by NMR relaxometry. A revisited interpretation of multicomponent relaxation
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Auteur	Lahaye, Marc [1], Falourd, Xavier [2], Limami, Anis M. [3], Foucat, Loïc [4]
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Résumé en anglais	<p>The water status of <i>Medicago truncatula</i> Gaertn. seed was followed by low-field NMR relaxometry during germination with and without oryzalin or fusicoccin used as growth modulators. T1 and T2 relaxation times and proportions P1 and P2 were determined on fresh, frozen, and freeze-thawed samples to characterize changes in water dynamics and compartmentation and in the nonfreezing water fraction. The results demonstrate that low-field NMR relaxometry allowed differentiating germination phases and events occurring during them as well as perturbations related to the presence of growth modulators. The results provide clear evidence that the classical multicomponent relaxation interpretation cannot directly relate T2 components and morphological compartments in biological tissue.</p>
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## Liens

[1] [http://okina.univ-angers.fr/publications?f\[author\]=11969](http://okina.univ-angers.fr/publications?f[author]=11969)

[2] [http://okina.univ-angers.fr/publications?f\[author\]=16049](http://okina.univ-angers.fr/publications?f[author]=16049)

[3] <http://okina.univ-angers.fr/m.limami/publications>

- [4] [http://okina.univ-angers.fr/publications?f\[author\]=16050](http://okina.univ-angers.fr/publications?f[author]=16050)
- [5] <http://okina.univ-angers.fr/publications/ua9121>
- [6] <http://dx.doi.org/10.1021/jf505515n>
- [7] <http://www.ncbi.nlm.nih.gov/pubmed/25619228?dopt=Abstract>

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