

# Cover crop management decisions impact phosphorus release

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*Cover crop species and termination method directly impact phosphorus release from cover crop tissue. To promote water quality, producers should strive to minimize the potential impact of cover crops as a source of phosphorus loss through careful species selection and limiting exposure to freezing conditions.*

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Non-point agricultural sources of phosphorus loss are a known contributor to the decrease of surface water quality. As such, cover crops have been proposed as a promising practice to help curb phosphorus (P) loss.

New research in the *Journal of Environmental Quality* addresses the impacts of cover crop species (rapeseed, crimson clover, and triticale), termination method (clipping, freezing, and herbicide), and extraction timing (1, 7, and 14 days after termination) on water-extractable P concentrations of cover crop tissue.

The authors found water-extractable P concentrations of cover crop tissue are directly related to species, termination method, and extraction timing. Species selection may be especially important when working to mitigate P loss, as evident by rapeseed releasing less water-extractable P than crimson clover and triticale regardless of termination method or extraction timing. Freezing consistently resulted in the greatest water-extractable P release with all termination methods. Documenting the time between termination and extraction is important when reporting water-extractable P since its release from cover crop tissue increased as time between termination and extraction increased.

This study suggests that producers may be able to reduce potential P loss from cover crops by selecting crop species with low water-extractable P concentrations and minimizing cover crop exposure to freezing conditions.

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Carver, R.E., Nelson, N.O., Roozeboom, K.L., & Kirkham, M.B. (2020). Species and termination method effects on phosphorus loss from plant tissue. *Journal of*

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