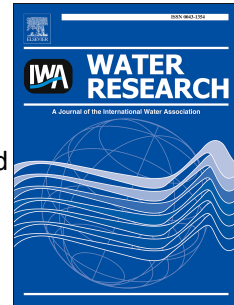


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Reducing phosphorus (P) losses from drained agricultural fields with iron coated sand (- glauconite) filters

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1 Reducing phosphorus (P) losses from drained
2 agricultural fields with iron coated sand (- glauconite)
3 filters

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12 **Abstract** In north-west Europe, agricultural diffuse P losses are a
13 major cause of eutrophication problems in surface waters. Given that
14 the Water Framework Directive (WFD) demands fast water quality
15 improvements and most of the actual P mitigation strategies tend to
16 work on the long run, new short-term mitigation measures are
17 urgently needed. We here report on the entire process of developing
18 small scale field filters to remove P at the end of tile drains, starting
19 from the screening of potential P sorbing materials (PSM): iron
20 coated sand (ICS), acid pre-treated natural minerals (biotite,
21 glauconite and olivine) and bauxite. Initial batch (ad)sorption
22 experiments revealed following order in both, P sorption capacity
23 and speed: ICS > bauxite > glauconite > olivine = biotite. Because of
24 the presence of significant amounts of lead and/or nickel, we

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