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Flash Flooding and 'Muddy Floods' on Arable Land

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Flash flooding is often associated with upland, grazed catchments. It does, however, occur in lowland arable-dominated areas. In southern England, notable examples have occurred at Rottingdean (Brighton) in 1987, at Faringdon (Oxfordshire) in 1993 and at Breaky Bottom vineyard (near Brighton) in 1987 and 2000. All resulted in damage to nearby property. Runoff was largely from recently cultivated ground.
The characteristics of such floods are:
Rapid runoff from bare soil surfaces. Saturated excess overland flow is likely in the early parts of storms but high intensity rainfall on loamy soils results in crusting and Hortonian overland flow;
High rates of erosion;
Sediment transport to downvalley sites causing property damage ('muddy flooding').
Muddy floods are known from several areas of Europe e.g. Belgium, northern France, South Limburg (Netherlands) and Slovakia (Boardman et al 2006). In other areas they occur but have gone unreported or are classified under different terms. The necessary conditions for occurrence are areas of arable land which is bare at times of the year when there is a risk of storms. For muddy floods to cause damage (and hence be reported), vulnerable property must lie downstream from such areas of arable land.
In some areas the incidence of muddy floods relates to autumn and early winter rainfall and winter cereal crops (e.g. southern England). In continental Europe, flooding is more common in summer and is associated with convectional storms and land uses including sugar beet, maize and potatoes. Predictions of increased numbers of high-intensity storms with future climate change, suggest that arable areas will continue to generate both flash floods and muddy floods.