



## **Cover crops impact on excess rainfall and soil erosion rates in orchards and potato fields, Israel**

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Bare soil and high drainage densities are common characteristics of intensive agriculture land. The couplings of these characteristics lead to high runoff and eroded soil volumes leaving the field or the orchard via the local drainage system into the fluvial system. This process increase flood risk due to massive deposition of the coarse fraction of the eroded soil and therefore reduces channel capacity to discharge the increase volumes of concentrated runoff. As a result drainage basin authorities are forced to invest large amount of money in maintaining and enlarging the drainage network. However this approach is un-sustainable. On the other hand, implementing cover crops (CC) and modification to current agricultural practices over the contributing area of the watershed seems to have more benefits and provide sustainable solution. A multi-disciplinary approach applied in commercial potatoes fields and orchards that utilize the benefit of CC shows great success as means of soil and water conservation and weed disinfestation without reduction in the yield, its quality or its profitability. The results indicate that it is possible to grow potatoes and citrus trees under CC with no reduction in yield or nutrient uptake, with more than 95% reduction in soil loss and more than 60% in runoff volumes and peak discharges.