

Storm Water Retention of Green Roof Models Planted with Mixed Sedum Plugs

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Storm water runoff is a serious environmental concern, created by discharges generated by precipitation and runoff from land, impervious surfaces, building rooftops, and other surfaces (USEPA 2007). Green roof systems are an established vegetative cover on a building rooftop that replaces the ecological footprint lost when the building was constructed. Research has shown that green roofs absorb, filter, retain, and store storm water, decreasing the quantity of runoff by as much as seventy-five percent (Femp 2004). Green roof models were first established at the Southern Illinois University Edwardsville Environmental Sciences field site in 2005. In this long-running experiment, green roof systems planted with *Sedum immergrunchen* retained more than 80% storm water runoff during the 2007 growing season (Woods et al. 2009). The objective of my study was to evaluate the performance of green roof systems planted with a mixture of seven Sedum species and compare the storm water retention to that of green roofs established previously with a single Sedum species. During 2009, storm water retention of green roof models planted with mixed Sedum plugs did not vary by growth media depth, but storm water retention was greater than control roof systems. However, storm water retention of green roof models planted with mixed Sedum plugs in 2009 retained less storm water than green roof models planted with *Sedum immergrunchen* in 2005. It remains to be seen as the green roof systems with mixed Sedum species become more established whether species composition will impact green roof storm water retention.