Les toitures végétalisées: Solutions de végétalisation adaptées au contexte hydro-météorologique brésilien

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Résumé

This presentation shows the results of a green roofs research carried out in Santa Maria, a city located in the Southern region of Brazil. The aim was to evaluate the establishment and persistence of different vegetal species when used as green roof coverage under subtropical weather conditions.
For this purpose a series of experimental extensive green roof was built and monitored during periods from 1 to 4 years. A total of twelve species, including native and non-native species were introduced as coverage in a 9 to 5,5 cm deep green roof and evaluated on unirrigated conditions. The selected species were: Kalanchoe blossfeldiana, Echeveria elegans, Sedum dendroideum, Sedum rupestre, Gazania rigens, Plectranthus barbatus, Rhipsalis teres f. heteroclada, Chlorophytum comosum, Asparagus-densiflorus 'sprengeri', Callisia repens, Zoysia japônica and Axonopus compressus.

Climate data, plant growth and species survival were measured during the monitoring. The local temperature ranged between 40oC and -2oC, the amount of precipitation as well its temporal distribution and other climate variables monitored allow to conclude that the local climate conditions are well represented in this time series.

As a conclusion, five of the twelve species established were suitable to local conditions, persisting under adverse conditions: Kalanchoe blossfeldiana, Sedum dendroideum, Sedum rupestre, Plectranthus barbatus, and Callisia repens.

The outcomes of this study are promisor because Plectranthus barbatus, and Callisia repens are Brazilian native species, commonly found and easily reproduced by cuttings. Kalanchoe blossfeldiana and Sedum dendroideum are also species commonly found due to their large use in landscaping in the Southern Brazil. The variety of Sedum, an European native plant, commonly used in European and North American green roofs was also suitable, although very hard to find. The first seedlings were obtained on request in a far city, however this Sedum is easily reproduced by cuttings.
This study demonstrates the possibility of native plants for use on shallow unirrigated green roofs in subtropical climates according their persistence to several climate conditions. It was not the objective of this study, but it is possible that the species with low performance would persist in an irrigated system or in a deeper substrate.

Mots-Clés: toirure végétalisée, espèces végétales, persistence des espèces

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