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Mesh-induced variability of fog water collected in Central California

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We currently have (or have had) multiple deployments of standard fog collectors using a variety of mesh types in order to glean comparisons on the relative effectiveness of the fog water collection potential of these materials under different meteorological conditions. Specifically, this study examines water volumes collected from (i) standard fog collectors constructed with a double layer of 35% shade coefficient coresa raschel mesh; (ii) a standard fog collector constructed with a single-layer of coresa raschel mesh; (iii) a standard fog collector constructed with a triple-layer of coresa raschel mesh; (iv) standard fog collectors constructed with German FogHa-Tin mesh; (v) a standard fog collector with a double-layer of coresa raschel mesh coated with a hydrophobic substance generated at NbD Nanotechnology; (vi) a standard fog collector with FogHa-Tin mesh coated with a hydrophobic substance generated at NbD Nanotechnology, and, finally, (vii) a standard fog collector with a double layer of mesh purchased from a local hardware store a single layer of which has an approximately 50% shade coefficient.

The results of these comparisons illustrate the differences between different fog events that illustrate the lack of universality of any single-event comparison. In other words, some types of mesh appear to function more effectively for fog water capture in different types of fog events or under different meteorological conditions. Whether one mesh performs better than another, therefore, is predicated upon which conditions a given site experiences in general, but we need to acknowledge that there is a variance in the relative performances of the different types of mesh.

One unique result of this study is that we observe that there appears to be a tendency for the mesh that is most productive to respond more quickly in terms of producing measurable water. Since this implies that there will be less blockage from the accrued water, this result supports other work that indicates that mesh blockage from undrained droplets may tend to hinder air flow and, consequently, capture less fog.