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Dew Occurrence and Collection in Gobabeb, Central Namib Desert

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ABSTRACT

In arid to semi-arid countries such as Namibia, fog and dew can play an important role in the water economy of many plants, animals and microorganisms. In Namibia, patterns and utilisation of advective fog have been given much attention. Dew research, however, has been neglected although it occurs frequently. It is very important that dew should be monitored, and this project sets out to do so for Gobabeb. Dew is a complex phenomenon, however, and no standard sensor is available. Gobabeb (23°33.704 S, 15°02.466 E; elevation app 400 m asl) is a training and research centre in Namibia's Central Namib desert, situated about 55 km from the coast. Average annual rainfall is 27.2 mm (ranging from 2-115 mm), average relative humidity is 50%, and average annual temperature is 21.1° C (ranging from 1.0-44.9°C).

The purpose of this study is two-fold:

- 1) to assess dew frequency and hours of duration in Gobabeb using a leaf wetness sensor.
- 2) to assess dew collection in Gobabeb as a supplementary source of drinking water

The project was initiated in July 2006. A specially-designed 1 m² passive dew collector was installed in the Gobabeb meteorological compound. It consists of an inclined collecting surface (30°), composed of 3 mm thick polycarbonate and insulated by 3 cm polystyrene. The drops drip into a collection trough and then into a bottle below. Observations are recorded daily.

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