

***Tillandsia usneoides*: A successful alternative for biomonitoring changes in air quality due to a new highway in São Paulo, Brazil**

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Abstract *Tillandsia usneoides* is an aerial epiphytic bromeliad that absorbs water and nutrients directly from the atmosphere by scales covering its surface. We expanded the use of this species as a broader biomonitor based on chemical and structural markers to detect changes in air quality. The usefulness of such comprehensive approach was tested during the construction and opening of a highway (SP-21) in São Paulo State, Brazil. The biomonitoring study was performed from 2009 to 2012, thus comprising the period during construction and after the highway inauguration. Metal accumulation and structural alterations were assessed, in addition to microscopy analyses to understand the metal chelation in plant tissues and

to assess the causes of alterations in the number and shape of scale cells. Altogether, our analyses support the use of this species as a wide biomonitor of air quality in urbanized areas.

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