

# Peronospora tabacina in Tobacco: transpiration, growth, and related energy considerations.

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## Peronospora tabacina in Tobacco: transpiration, growth, and related energy considerations.

Author(s) : [CRUICKSHANK, I. A. M.](#); [RIDER, N. E.](#)

Journal article : [Australian Journal of Biological Sciences](#) 1960 Vol.14 No.1 pp.45-51

Abstract : At Div. Plant Industry, C.S.I.R.O., Canberra, further studies [cf. 40, 41] were made to determine the effect of transpiration on the growth of tobacco plants infected with *Peronospora tabacina*. It was found that before sporulation the main contribution to the enhanced total daily water loss from diseased plants occurred at night, when the ratio of diseased to healthy plant transpiration approached 2, and that leaf growth was almost zero in the diseased plants from the 3rd day after inoculation, while growth in healthy plants continued

10%/day. During postsporulation transpiration from diseased tissue decreased than that from healthy, the exact ratio being controlled by the environment. Temperature gradient measurements over healthy and infected leaves at night showed that before sporulation temperature was above that of healthy tissue by 0.1-0.2°, that sensible heat from the air to the leaf surface was less for diseased than healthy, an almost constant amount, and that energy balance considerations adequate for the measured night transpiration from healthy material, but only half the amount for the diseased tissue. The implications of these phenomena are discussed.

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