THE PERIODISM OF NITROGEN FIXATION IN SOILS AND
THE INFLUENCE OF INOCULATION WITH
AZOTOBACTER\textsuperscript{1}

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In most experiments conducted to ascertain the beneficial effects of inoculation of soils, determinations have been made of the quantity of nitrogen in the soil before and after a period of incubation varying from a few weeks to several years. In some instances large gains in the nitrogen content have been secured, in other cases small increases have been noted, while in still other experiments there has been a loss of nitrogen from the soil. This suggests the possibility that there may be periodic cycles in which nitrogen fixation is followed by a loss of nitrogen from the soil. There may also be periods of rapid fixation followed by periods of slow or practically no fixation. This is probably one of the reasons why some investigators have secured good results and others poor results from the inoculation of soils with Azotobacter.

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