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# Report for 1937

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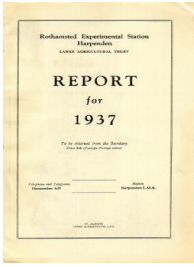


# Soil Cultivation and Management

## Rothamsted Research

Rothamsted Research (1938) *Soil Cultivation and Management ;* Report For 1937, pp 69 - 69 **- DOI: https://doi.org/10.23637/ERADOC-1-69**

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centage infection (which increases with increased feeding time on the healthy plant) decreases rapidly with increasing times on the infected plant from two minutes to one hour.

In 1932-1933 Mrs. Watson investigated an outbreak of disease in commercial grown *Hyoscyamus*, from which she isolated three viruses, two of them new. In a crop of this kind, which is limited and valuable enough to warrant the expense, it seemed that control by spraying might be practicable ; and it was found that the aphis infestation and consequent infection were reduced thereby. The greatest effect was obtained with weekly sprayings. The influence on yield was less evident, but as a result of weekly spraying in the first year a 30 per cent. increase was obtained in the third crop taken in May of the second year.

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As the work of the other Departments has been recently described in full it is not necessary to do more than mention some of the chief lines of work being done in each.

## SOIL CULTIVATION AND MANAGEMENT

These investigations are in charge of the Soil Physics Department : an extended account was given in the Report for 1936. Evidence has been accumulated that the purpose of cultivation is to keep down weeds, and operations additional to what is required for this may prove ineffective or even detrimental. The importance of preparing a good seed bed is recognized though some of the rather striking differences in appearance of crop resulting from different methods of preparation do not lead to corresponding differences in final yield.

*Soil moisture.*—The water relationships of soils have been much studied as being among the most important factors in soil fertility. Water easily moves downwards in the soil under the force of gravity but in other directions its movement is both slow and small in amount. Evaporation seems to occur *in situ ;* plant roots grow to the water, the water does not move to the roots. The investigation of this subject would be greatly facilitated if a trustworthy method were known for the direct measurement of water in the soil and some progress has been made in this direction.

*The colours of soils.*—Soil surveyors regard the colour of the soil as one of the properties helpful in classification. An improved method of recording colour devised by Dr. Schofield was found to be so valuable that an important firm of instrument makers has acquired the patent and taken over his assistant for the purpose of further developing it.

*Soil structure.*—Methods are being devised for studying in detail the structure of the soil.

## STATISTICAL DEPARTMENT

During the last few years the scope and work of the Statistical Department have changed considerably. The staff had at first to develop methods ; now these methods are used for the solution of problems presented by other departments. At the present time there are three main lines of work :

(1) The improvement of designs for field experiments whereby these may become more useful than at present.