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The Relation of Moisture to Thermal Conductivity in Oats

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THE RELATION OF MOISTURE TO THERMAL CONDUCTIVITY IN OATS

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Thermal conductivity of oats and other grain has received litttle if any attention. Employing the Stiles apparatus, an attempt has been made to ascertain the specific thermal conductivity of oats, having moisture contents up to maximum absorption. The thermal conductivity of a substance is the amount of heat which will pass per unit of time through unit area of a layer of the substance of unit thickness, the opposite faces of the layer having a temperature difference of one degree. It is represented by k in the following equation:

$$Q = K\frac{A(t_1 - t_2)\,T}{d}$$

Where Q is the heat transferred; A is the area; $t_1 - t_2$ the temperature difference; T the time and d the thickness of the layer.

The specific thermal conductivity of oats with a moisture content of 9.88 per cent was found to be 0.0001527; 12.34 per cent, 0.000174; 18.08 per cent, 0.0001895; 25.5 per cent, 0.0002014. Throughout an increase in the moisture content produces an increase in the specific thermal conductivity.

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SOME MEIOTIC IRREGULARITIES IN CULTIVATED LILIES

JOHN E. SASS

Refinements of the paraffin technique make it possible to demonstrate critical details of meiosis. The process yields figures that are comparable to the results of the smear process. Progressive synapsis during amphitene, and the tetrad structure of the chromosome at strepsiphase can be readily demonstrated. In *Lilium speciosum rubrum*, cytomyxis occurs in the microsporocytes at a very early stage. Very little fertile pollen is produced. In *L. tigrinum*, a certain chromosome pair tends to resist disjunction. One homologue frequently lags, and may be stretched between the poles until early telophase. The centrifugally developing cell plate pinches the lagging chromosome in two, a portion remaining in each member of the diad.

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