increased rapidly during the initial stages of the loss of alcohol, decreasing with time as the alcohol content was depleted. However, the stimulation in carbon dioxide output only accounted for the disappearance of about 25 per cent of the alcohol. The respiratory quotient during this period equalled 0·5.

Preliminary examination of extracts of the peas during germination have shown temporary increases in acetaldehyde content associated with the disappearance of the alcohol and also, as shown by paper chromatography, increases in acetic and citric acids.

In this tissue there is, therefore, evidence that alcohol accumulated under anaerobic conditions can be metabolized under aerobic conditions, and experiments are in progress to elucidate these problems further.

One of us (E. A. C.) is the holder of a research studentship awarded by the Department of Scientific and Industrial Research, for which grateful acknowledgment is made.

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Effects of Heat and Loss of Moisture on the Dormancy of Wheat, and some Interactions with 'Mergamma D'

A previous communication[1] described the action of oven treatment at 38° C. in overcoming dormancy of barley without loss of moisture. Further experiments have shown that wheat does not respond in the same manner. Oven treatment in polythene appears to have no effect, and with loss of moisture the dormancy may increase.

The following results were obtained with Cappelle Desprez Wheat, ref. *A*101, approximately three weeks after harvesting (moisture content 17·5 per cent) (Table 1).

Table 1

Treatment	Control *R*[0]	Refrigeration	38° C. dried		38° C. polythene	
Duration of treatment	2 days	3 days	Overnight	2 days	Overnight	2 days
Germination at six days (per cent)	46	98	34	34	51	51

Peko wheat, ref. 2019, treated with mercury/BHC seed dressing ('Mergamma *D*') behaved similarly, although the seedlings showed typical signs of stunting (Table 2).

Table 2

Dormancy treatment	Peko wheat (ref. 2019)		2019 dried	
	Non-dressed	Dressed	Non-dressed	Dressed
None	83	76	86	87
Refrigeration	86	90	89	93
Oven-polythene	—	75	—	—
Oven-dried	—	67	—	73

The dried portion had been reduced from 19 per cent to 16 per cent moisture by an 'in-sack' drier before dressing. When tested, all samples had lost a further 0·5–1·0 per cent moisture.

It is evident that the reduced germination was due not only to the laboratory drying treatment, but also to some action of the dressing. This enhancing of dormancy has been suspected for some time without definite evidence (Thomson, J. R., personal communication). When tested immediately after dressing, this sample gave the following results: control, 72 per cent; dressed normal rate, 59 per cent; dressed twice normal rate, 24 per cent. Refrigeration led to maximum germination in each case, although increased dressing gave increased stunting.

Reduction in the degree of stunting of dressed wheat can result from oven treatment with or without drying. Sometimes this is manifest as a mere $\frac{1}{8}$-in. increase in root-length. Other samples show greater response; a root-length of $\frac{3}{4}$ in. becoming $1\frac{1}{2}$ in. in the treated sample, as occurred with Peko wheat 2019.

Dressed barley responds in the same manner. One sample of Proctor tested immediately after dressing produced roots of about 1 in. long, but when oven treated (in polythene) the roots were so similar to the non-dressed control that the differences would not have noticed in routine testing. Such a strong response has not yet been noticed with any wheat samples.

These observations may be of increasing interest in view of the suggestion that seed be tested for germination under the Seeds Act after the application of dressings[2].

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Effect of Pyrimidine Deoxyribonucleotides on the Regeneration of Bone-Marrow in Irradiated Mice

The effect of several nucleotides and nucleosides on the survival and peripheral blood-count of irradiated mice was studied in our previous experiments[1]. The subject of this communication is the mitotic index in bone-marrow and deoxyribonucleic acid synthesis in the spleen in mice after irradiation and administration of pyrimidine deoxyribonucleotides.

Female mice of strain *H*, weighing 20–25 gm., were subjected to total-body irradiation at a dose of 500 r.; 0·1mgm./25 gm. body-weight deoxycytidylic acid and 2 mgm./25 gm. thymidylic acid as the calcium salt were injected 24 hr. after irradiation. The corresponding nucleosides were injected in equimolar concentration. The mitotic index was determined before irradiation and on the fourth, seventh and tenth days thereafter; six animals of each group were used at each interval and three such experiments were performed with both cytidine and thymidine derivatives. The bone-marrow was stained by the Feulgen method and 5,000–10,000 nucleated cells were counted from the femur of each animal. The rate of deoxyribonucleic acid synthesis was determ-