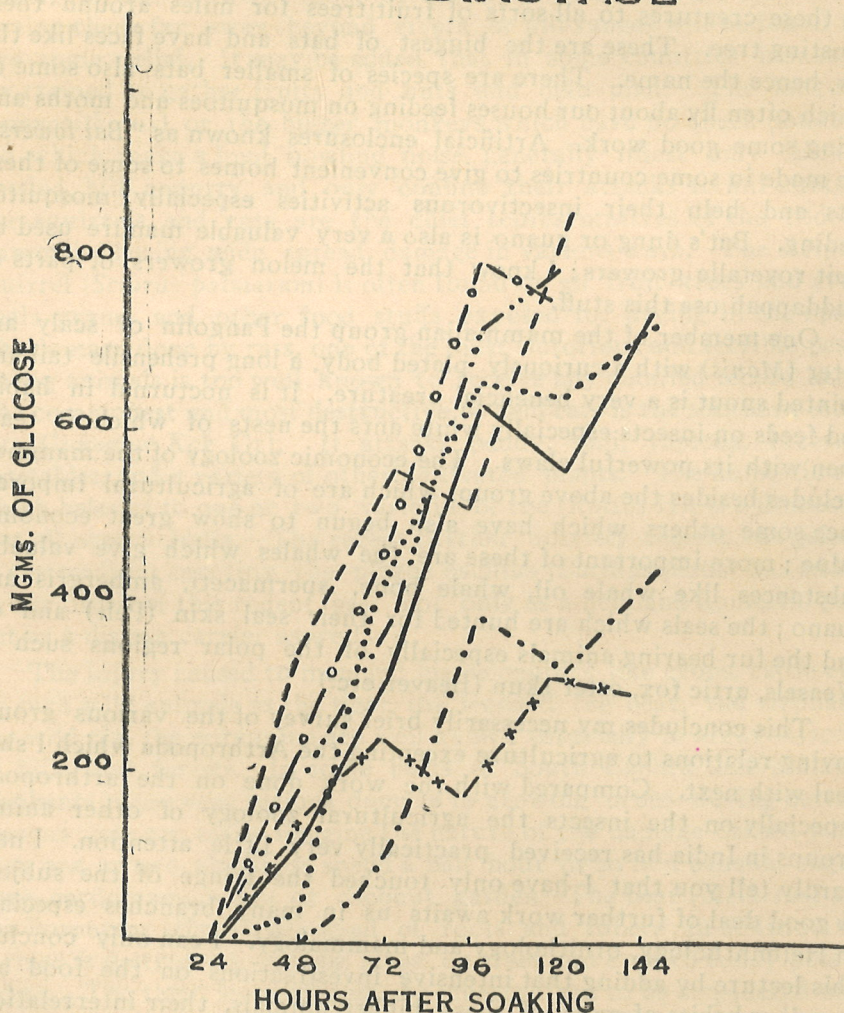


Research Notes.

Diastatic Activity in Germinating Paddy.

Although the method of assessing the viability of seeds by their percentage germination has much to commend it on account of its simplicity of technique and convenience, it possesses certain defects—the chief of which is that it fails to give any indication of the vigour of the seedlings. As this latter is the true criterion of the fitness of any strain for propagation, any test, however empirical, which would furnish information on this aspect would be a valuable weapon

DIASTASE



References :-

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| — 1. In darkness. | -x-x- 5. In reduced pressure. |
| - - - 2. In absence of CO_2 | -o-o- 6. Submerged in 80 ccs. of water |
| 3. In absence of CO_2 & O_2 | with 5 cc. of H_2O_2 |
| - - - - 4. In excess of CO_2 | - - - - 7. Soaked in Fusarium Extract |
| | throughout. |

in the hands of the economic plant breeder. In recent years with the advent of the concept of vernalisation, great significance has been attached to the "germination" phase of plant development, and it is now well recognised that by appropriately treating the seed during germination the developmental phase can be profoundly modified. If it were possible to correlate the physiological activity during germination with vigorous after-growth, the geneticist would be saved much time and labour in plant selection.

With this object in view, an investigation was undertaken on the changes taking place when the paddy grain is allowed to germinate under a variety of controlled conditions. The individual role of embryo and endosperm and of the enzymes diastase, maltase and catalase have been studied. The accompanying graph shows the changes in the diastatic activity of the whole seed during germination under the condition studied. It will be seen that carbondioxide has a marked effect on diastatic activity. If germination is under water, the oxygen content and volume of water, and the degree of submergence influence enzyme activity. Growth-promoting substances cause a small increase of diastase.

The experiments, full details of which will be published shortly, show that growth as indicated by weight of seedlings or morphological measurements does not bear any strict relationship to the quantity of diastase produced during germination.

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ABSTRACTS

Preservatives for wooden and bamboo posts against ground-inhabiting termites. (*The Philippine Agriculturalist* Vol. XXV No. 8). In an attempt to find some cheap and effective preservative against the attack of termites which quickly destroy posts, fences, and other structures that are in contact with the soil, bamboo posts and ipil-ipil (*leucienia Glanca*) were treated with coal tar, salt and paris green. Two hundred grams of salt and about sixtyfive grams of paris green were put into the holes into which the posts were fixed. In the case of coal-tar, the parts of the posts to be set in the ground were dipped in coal tar. Controls were also run side by side.

All the three preservatives were found to be generally effective in wooden posts, salt coming with 66.7 % attack, followed by paris green (70%) and coal tar (90%) on bamboo paris green showed 40 % attack, salt 60 % and coaltar 70 %.

Regarding the economics of the treatment, coal tar is the cheapest, in the cost of treatment being annas five; followed by salt with annas ten for 100 posts. Paris green treatment was prohibitively costly, as the figure came to about three annas and a half.

The fungicidal effect of salt and coal tar was not significant. In this, paris green was the most effective.

K. S. R.

Broiler Factories by Philip-H. Smith. (*Scientific American*, 1937 pt. 12). The article deals with the mass production of eggs and broilers in the factories situated in the heart of cities. The growth of the factory idea may be gauged from the fact that there are more than 10,000 installations and that one hundred of the bird population of the United States has been thus caged. Poultry branch of the farm activities has been industrialised, moved bodily into heart of big cities and great economies in the matter of transport accomplished through the new system of 'battery brooding'. The birds are confined from the first day of their life in wire cages and pass through three stages of (1) starting (2) growing (3) developing. After the last stage the males are sold as broilers and females are carried to the fourth stage as egg layers. The number of birds is successively