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## LIPASE ACTIVITY OF SOME FUNGI ISOLATED FROM GROUNDNUT

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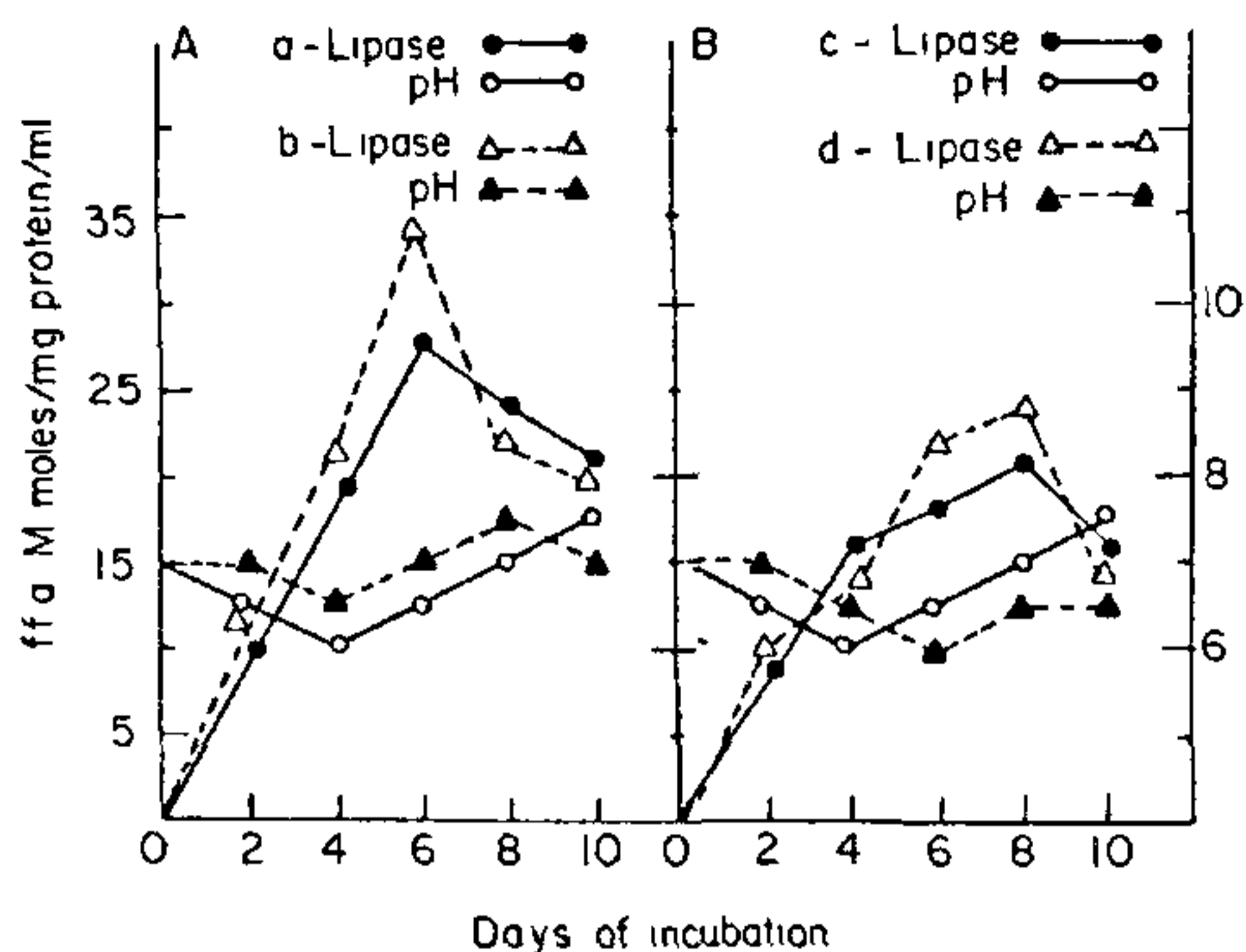
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MANY seed-borne fungi hydrolyse lipids of the grains by their lipase activity, which results in an increase of free fatty acids<sup>1</sup>. Studies on the lipase activity of a few fungi have been carried out<sup>2,3</sup>. In the present investigation, the extracellular lipases elaborated by four species of fungi viz *Aspergillus flavus*, *A. niger*, *Fusarium oxysporum* and *Rhizoctonia solani*, isolated frequently in percentages higher than the other fungi from groundnut have been investigated.

The lipase activity of these fungi was assayed by the method of Somkuti and Babel<sup>4</sup> and assessed in terms of free fatty acids liberated by the fungus; the activity is expressed as micromoles of free fatty acids/mg protein per ml<sup>4</sup>. The protein estimation was done following the procedure of Lowry *et al*<sup>5</sup>.

In all the four fungi, a gradual increase in the lipase activity was recorded in the beginning of the incubation period and after reaching the optimum there was a gradual decrease (figure 1A & B). The maximum enzyme activity was detected on the 6th day for *Aspergillus flavus* and *A. niger*, whereas for *Fusarium oxysporum* and *Rhizoctonia solani*, the optimum was on the 8th day. Ogundero<sup>3</sup> detected the peak lipase activity in *Humicola grisea* var *thermoidea* and *Mucor pusillus* on the 6th day of incubation, while in *Talaromyces thermophilus* and *Thermoascus crustaceus*, on the 8th day. During the period of incubation, the pH of the test fungi recorded an initial decrease and then a rise. Similar observations have been made by Ogundero<sup>3</sup> and Somkuti and Babel<sup>2</sup>.

Increase in fat acidity value has been used as an index of seed deterioration<sup>6,7</sup> in storage as fat hydrolysis is more rapid than other seed constituents. The production of lipases by these fungi indicate their involvement in seed deterioration, especially in oil seeds.



**Figure 1.** Lipase activities and pH changes of culture filtrates of *Aspergillus flavus* (a), *A. niger* (b), *Fusarium oxysporium* (c) and *Rhizoctonia solani* (d)

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