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Triacylglycerol Lipase Participates in the Formation of *n*-Hexanal in Alfalfa Seedlings

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The participation of lipase in the formation of *n*-hexanal by homogenization of alfalfa seedlings was investigated. *n*-Hexanal was increased by the addition of trilinolein, dilinolein or monolinolein to the homogenate of the seedlings. Taurodeoxycholic acid sodium salt (TDCA), an inhibitor of triacylglycerol lipase, inhibited the formation of *n*-hexanal by 36%. These findings show that the corresponding proportion of *n*-hexanal was formed through the action of triacylglycerol lipase. *n*-Hexanal was also increased by adding the total lipids of alfalfa seedlings to the homogenate prepared with TDCA. But, when the lipids removed free fatty acids from the total lipids were added to the homogenate, the increase decreased to 18% as compared with the addition of total lipids. *n*-Hexanal thus also increased through the pathway, not requiring the action of the lipase and 82% of the increased *n*-hexanal was formed from preexisting free fatty acids. The formation pathways of *n*-hexanal in the seedlings were discussed.

Keywords: [alfalfa](#), [n-hexanal](#), [lipase](#), [grassy odor](#)

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