

# WHY OILSEEDS STORE ENERGY

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What are oilseeds and why are they important? Oilseeds are seeds primarily grown for the production of edible oils. They serve as a major source of oils for human consumption and by-products for animal feed. In a broader sense, rapeseed, peanut, soybean, and cottonseed are considered major oilseeds.



Are oilseeds a good source of energy? Oilseeds are a major source of energy. They also provide moderate amounts of fibers and proteins, ranging from 30% to 45%.



How do oils store energy? Like us, they use fat to store energy. Oils contain fats called triglycerides and they contain building blocks called fatty acids. They are found particularly in seeds, for example, so the plants we use to commercially produce oils their seeds are particularly rich in oils. So peanuts, sunflower seeds, oil seed rape, that kind of thing.



What are the major seed storage reserves in oilseeds? The major seed storage reserves in oilseeds are accumulated in protein bodies and oil bodies, and serve as an energy, carbon, and nitrogen source during germination.



Why do plant seeds need a source of energy? Plant seeds need a source of fuel to germinate. Once embryogenesis begins, the required chemical energy is released by catabolising fuel stores, which generally consist of starch, proteins, and fats (Waschatko et al. 2016). Triacylglycerides are glycerol esters of fatty acids and are a key energy storage molecule (Murphy 1993).

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How do oil bodies affect seed germination? During seed imbibition and germination, the physiological function of oil bodies changes dramatically from a sink to a source organelle. As a source organelle, oil bodies catabolize triacylglycerol into Suc, which provides an energy source to support heterotrophic seedling growth until the start of photosynthesis.



Oilseed crops have been identified as key to address these challenges: they produce and store lipids in the seeds as triacylglycerols that can serve as a source of food/feed, renewable fuels, ???



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Promoting domestic biofuel production from oilseeds can enhance energy security by reducing dependence on imported fossil fuels. This diversification of energy sources can buffer countries from



Hence, they are not only good sources of protein, but, also concentrated source of energy. The proteins in oilseeds can be fed either as part of the oil-intact seed, or as a meal ???



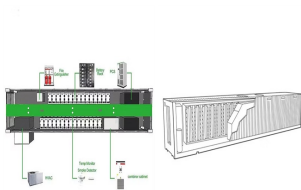
together with oil soluble vitamins like vitamin A. Oilseeds, are the largest source of vegetable oils even though most oil-bearing tree fruits provide the highest oil yields (olive, coconut and palm ???)

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The world's population is projected to increase by two billion by 2050, resulting in food and energy insecurity. Oilseed crops have been identified as key to address these challenges: they produce and store lipids in the seeds ???



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