Energy storage substances in peanut seeds

Do storage lipids accumulate in peanut seed?
Storage lipids are known to accumulatein peanut seed. Our present study shows that various types of lipids already exist at the early stage of seed development,and lipid content changes with time,indicating that the lipid network map has been established at the early stage of development.

Why are peanut seeds important?
Peanut seeds contain protein, starch, lipids, flavonoids, and other chemical constituents. Seed development quality directly affects seed germination, seedling morphogenesis, and even crop yield.

Are peanut seeds good for germination?
Usually,large seeds contain more nutrients and energy stored and thus have a higher potential for germinationand stronger environmental stress tolerance during seedling establishment. Peanut seeds contain protein,starch,lipids,flavonoids,and other chemical constituents.

Why are peanut seeds so big?
Seed size is a critical agronomic trait for crops,and peanut has over 300 varieties grown in tropical and subtropical regions. Usually,large seeds contain more nutrients and energy storedand thus have a higher potential for germination and stronger environmental stress tolerance during seedling establishment.

Why is lipid metabolism important in peanut seeds?
Therefore,understanding lipid metabolism in peanut seeds is crucial for human health and nutritional value. Lipids are a vast group of naturally occurring molecules that are insoluble in water but soluble in nonpolar solvents. They store energy,act as structural components of cell membranes,and signal biological processes.

How much lipid is in a peanut seed?
The total lipid contents gradually increased across both the seed development and germination stages (Figure 1 C),peaking at D4 (247.83 umol/g)and G3 (207.11 umol/g),respectively (Figure S3). Figure 1. Lipidomic analysis of large-seed peanuts during the seed development and germination processes.

Triacylglycerols (TAG), an energy storage substance, exist in the seeds of many eukaryotic plants. TAG is hydro- lyzed by lipaseto produce free fatty acids and corresponding glycerides, ...

In buckwheat seeds, the main storage protein constituent about 16% of total seed protein is the 13S globulin with molecular mass of about 300 kDa and consists of acid and basic subunits ...

Storage can reduce seed germination potential and viability, especially in high-lipid species, such as peanuts. This study evaluated the physiological quality of stored peanut ...

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Lipids are the primary energy storage compounds in mature peanut seeds. The biosynthesis of lipids in peanut begins by the conversion of soluble sugars to fatty acids (Pattee et al., 1974b).

Health Benefits of Peanuts Heart health Walnuts and almonds have gotten a lot of attention as "heart-healthy" foods, given their high content of unsaturated fats. But research ...

Influence of Nitrogen-Modified Atmosphere Storage on Lipid The safe storage of peanuts was important for the stable supply of peanut products in the market and their edible safety. The ...

Various substances in seeds occurred many transformations during the drying process, which is key to long-term storage, but the mechanism is unclear. In this study, seeds ...

Ever wonder how a tiny acorn contains enough energy to grow into a mighty oak? The secret lies in nature"s original power banks - seeds. These biological storage units have perfected energy ...

Various substances in seeds occurred many transformations during the drying process, which is key to long-term storage, but the mechanism is unclear. In this study, seeds of the peanut ...

Abstract: Seed germination is the beginning of plant life, and this process requires the mobilization of various storage materials to provide nutrients and energy. Therefore, storage materials are ...

Seed germination is a complex process of physiological and biochemical changes, including the imbibition of water, the change of subcellular structure, the growth of ...

This understanding not only aids food scientists and industry professionals in improving product quality but also enables health-conscious consumers to make informed ...

Also, the present review will summarize the extraction methods and advance technologies for obtaining peanut protein/oil to reduce the use of classical methods and energy ...

The application of 100% propionic acid to peanut seeds throughout the storage duration resulted in decreased occurrences of deceased seeds, decaying seeds, and deteriorated seedlings. ...

1. Plant energy storage substances primarily include starch, lipids, and proteins, which serve crucial roles in the energy economy of plants. These substances are synthesized ...

Abstract Background: The aim of the present study was to evaluate the possibility to apply gamma radiation treatment for decontaminating and assuring the quality of ...

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