Sorting and Drying Methods for Off-ground Harvested Almonds

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ABSTRACT

Researchers at the University of California, Davis have developed new methods for sorting and drying freshly harvested almonds with high processing and energy efficiency.

FULL DESCRIPTION

California produces about 1.2 million tons of almonds annually with an economic output of over $5.6 billion. Current almond drying methods include leaving harvested almonds on orchard floors for an extended time to dry naturally. However, this method can lead to microbial contamination and insect damage to the almonds. While commercial drying methods are also used, these practices dry an unsorted combination of in-hull almonds, in-shell almonds, and hulls simultaneously which causes inefficient drying. Moreover, current almond harvesting methods cause dust generation that pollutes the air and can impact the health of people over a wide area. Overall, there is a significant need for more effective almond drying and harvesting methods that limit dust generation.

Researchers at the University of California, Davis have developed new methods for harvesting, sorting and drying freshly harvested almonds with high processing and energy efficiency while maintaining product quality. The method consists of separating off-ground almonds into three groups, including in-hull almonds, in-shell almonds, and hulls based on their dimension characteristics and aerodynamic properties. The method uses both terminal velocity and size to separate the almonds with low sorting errors, and can be used with off-ground harvesting methods that minimize dust generation. Additionally, these methods include drying techniques that utilize the optimum drying temperatures for each sorted almond group, and cut down on drying time and overall energy use.

APPLICATIONS

- Efficient almond harvesting, sorting, and drying

FEATURES/BENEFITS

- Minimizes harmful dust generation
- High drying rate
- Energy efficient
- Maintains uniform almond moisture

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	2023002725	01/26/2023	2020-515

CONTACT

Victor Haroldsen
haroldsen@ucdavis.edu
tel: 530-752-7717.

INVENTORS

- Khir, Ragab
- Pan, Zhongli

OTHER INFORMATION

KEYWORDS

Almonds, Agriculture,

Sorting, Drying

CATEGORIZED AS

- Agriculture & Animal Science
- Other
- Processing and Packaging

RELATED CASES

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University of California, Davis
Technology Transfer Office
1 Shields Avenue, Mrak Hall 4th Floor,
Davis,CA 95616

Tel:
530.754.8649
techtransfer@ucdavis.edu
https://research.ucdavis.edu/technology-transfer/
Fax:
530.754.7620