

Title Some physical and morphological properties of wild sunflower seeds
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Abstract

As part of a study to characterise and examine the use of wild sunflower species (*Helianthus petiolaris* Nutt), some physical properties and morphological characteristics of seeds from different locations in Argentina were determined. The oil content ranged between 27% and 30% (wb) and the moisture content varied from 8.9% to 10.4%. The average length, width, and thickness of the seed, measured with a micrometer, were 4.5, 2.02, and 1.2 mm, respectively. The calculated mean values of seed equivalent diameter, surface area, and sphericity were 2.25 mm, 16.2 mm², and 0.48, respectively. The bulk and true densities measured with a hectolitre tester and by picnometry, respectively, were 350 and 399 kg/m³. The angle of repose ranged between 28.6° and 30.2°. The morphological characteristics as well as the hull thickness and percentage were also evaluated by scanning electron microscopy. The hull thickness and percentage had mean values 0.07 mm and 21%, respectively. Achenes presented straight and double hairs and a morphological study showed a pericarp structure with an amorphous and lignified fibre layer and air cavities between the inner parenchyma and the cotyledon.