

# EUROPEAN FOOD AND NUTRITION CONGRESS & WORLD COLLOID CONFERENCE

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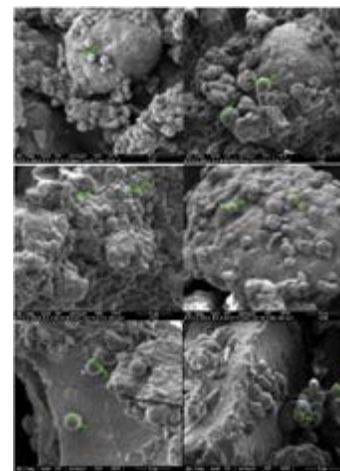
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### Microstructure of genetically improved quinoa (*Chenopodium quinoa* Willd)

The present study investigated five genetically improved varieties of *Chenopodium quinoa* Willd (Illpa INIA (Q2), INIA 431 Altiplano (Q3), Salcedo INIA (Q4), INIA 420 Negra Collana (Q5) e INIA 415 Pasankalla (Q6)) and one non-improved variety (Kancolla (Q1)). Grains were obtained from the National Agricultural Research Institute (INIA) of Peru. The microstructure of quinoa flour through scanning electron microscopy shows aggregates coated with a protein matrix, which agrees with Li and Zhu (2017) and Ruales and Nair (1994). Also the starch granules of quinoa flours were polygonal in shape and their sizes ranged from 1,347 to 2,438  $\mu\text{m}$ ; Q3 had the significantly smaller size, Q5 presented the largest size, and Q2, Q6, Q4 and Q1 presented intermediate size of starch granule. In relation was determined the size, weight of a thousand grains, the Relative density and color. Where the Q6 has the largest size, weight of a thousand grains and relative density with values of 2.104 mm, 3.77 gr and 77.37 Kg / HL respectively, followed by the Q5 that presents 78.84 Kg / HL regarding the Relative density, for the weight of a thousand grains, values of 2.62 gr and the smaller size in comparison with the other varieties. The Q5 on the other hand presents higher values in the fiber content, ashes and lower carbohydrate content. The Q3 presents higher carbohydrate content. All have different characteristics which would affect their processing.

#### Reference:

1. Li, G., Zhu, F. 2017. Physicochemical properties of quinoa flour as affected by starch interactions. Food Chemistry, 221, 1560-1568.
- Ruales, J., Nair, B.1994. Properties of starch and dietary fibre in raw and processed quinoa (*Chenopodium quinoa*, Willd).



#### Biography

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