



PASTING PROPERTIES OF NATURALLY MODIFIED CASSAVA STARCH

Silvana Palheta de Souza¹

Éder Jorge de Oliveira²

Carlos Wanderlei Piler de Carvalho³

Cristina Yoshie Takeiti⁴

Cassava (*Manihot esculenta* Crantz) is a perennial plant widely cultivated in tropical and subtropical areas constituting an important energy source for these populations. In 2023, Africa's cassava production has reached more than 60% of the world output, followed by Asia, and South America. The applications of cassava starch in the development of products are guided mainly by the its functional properties and amylose-amylopectin ratio. This work aims to select and characterize 17 naturally modified cassava starches based on conventional and biotechnological procedures from Embrapa's Cassava Genetic Improvement Program in terms of paste properties. The characterization of starches was carried out through analysis by rapid viscosity analyzer (RVA) determining initial pasting temperature (PT), peak viscosity (PV), final viscosity (FV), breakdown (BD), and setback (SB). Results showed that lower PT, as observed in BGM 1406 (68,2 °C), BGM 7788 (69,3 °C), BGM 7737 (70,2 °C) and BGM 0914 (70,2 °C) have some advantages for industrial food and non-food processes, since they form pastes more easily, reducing the energy cost. The highest values for PV were observed in BGM 1403 (5479 cP), BGM 1586 (5215 cP), BGM 1103 (44887 cP), BGM 0144 (4787 cP) and BGM 1044 (4743 cP). On the other hand, high values of SB showed by BGM 1044 (3777 cP), BGM 1103 (3698 cP), BGM 0011 (3617 cP), BGM 0069 (3578 cP), BGM 1403 (3543 cP), and BGM 0144 (3516 cP) can be used to modulate the glycemic index due to the lower digestibility of the starch, especially in the cases of diet food management. An understanding of cassava starch paste properties can contribute to the selection of clones with differentiated starches increasing the range of applications.

¹ Bacharel, PPGAN/UNIRIO, Rio de Janeiro, Brasil,
silvanapalheta@edu.unirio.br

² Doutor, Embrapa Mandioca e Fruticultura, Cruz das Almas, Bahia, Brasil,
eder.oliveira@embrapa.br

³ Doutor, Embrapa Agroindústria de Alimentos, Guaratiba, Rio de Janeiro, Brasil,
carlos.piler@embrapa.br

⁴ Doutora, Embrapa Agroindústria de Alimentos, Guaratiba, Rio de Janeiro, Brasil, cristina.
takeiti@embrapa.br