

# **SELECTING RICE VARIETIES WITH SUITABLE AMYLOSE CONTENT FOR ENZYME-RESISTANT STARCH PRODUCTION**

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## **Summary**

The objective of the study was to select some rice varieties grown in Vietnam with high amylose content and suitable for the production of resistant starch. The 19 rice varieties were collected and screened for the first time based on analysis of amylose, resistant starch RS3 in flour and starch, and the relationship between these two indications. Use of the rapid viscosity analysis (RVA) parameters for second screening. Finally, the selected rice variety will be analyzed by scanning electron microscopy (SEM) and X-Ray Diffraction (XRD). The results indicated that 14/19 rice varieties having high amylose content (> 25%). The RS3 content of rice flour samples was very low (1.04 - 2.76%), but boosted in purified starches (up to 3.53%), and significantly increased in retrograded starch samples (up to 9.27% in Gia Loc 601 variety). The four rice varieties with the highest RS3 content in the retrograded starches were Gia Loc 601 (9.27%), Q5 (8.73%), IR50404 (8.39%) and OM576 variety (7.13%). There exists a proportional correlation between RS3 content and amylose content, but only for deproteinized starch samples, which is not true for rice flour samples. The IR50404 rice variety was selected for RS3 production because not only was the high amylose content in starch (29.14%), the high RS3 formation (8.39%) but also the low viscosity (5020 cP), high crystallinity (42.2%) and great supply potential.

**Keywords:** *Amylose, correlation, rice flour, resistant starch, rice variety, rice starch.*