

벼 유전자원의 아밀로스 및 단백질 성분 함량 분포에 관한 자원정보 구축

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Construction of Database System on Amylose and Protein Contents Distribution in Rice Germplasm Based on NIRS Data

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ABSTRACT

This study was carried out to build a database system for amylose and protein contents of rice germplasm based on NIRS (Near-Infrared Reflectance Spectroscopy) analysis data. The average waxy type amylose contents was 8.7% in landrace, variety and weed type, whereas 10.3% in breeding line. In common rice, the average amylose contents was 22.3% for landrace, 22.7% for variety, 23.6% for weed type and 24.2% for breeding line. Waxy type resources comprised of 5% of the total germplasm collections, whereas low, intermediate and high amylose content resources share 5.5%, 20.5% and 69.0% of total germplasm collections, respectively. The average percent of protein contents was 8.2 for landrace, 8.0 for variety, and 7.9 for weed type and breeding line. The average Variability Index Value was 0.62 in waxy rice, 0.80 in common rice, and 0.51 in protein contents. The accession ratio in arbitrary ranges of landrace was 0.45 in amylose contents ranging from 6.4 to 8.7%, and 0.26 in protein ranging from 7.3 to 8.2%. In the variety, it was 0.32 in amylose ranging from 20.1 to 22.7%, and 0.51 in protein ranging from 6.1 to 8.3%. And also, weed type was 0.67 in amylose ranging from 6.6 to 9.7%, and 0.33 in protein ranging from 7.0 to 7.9%, whereas, in breeding line it was 0.47 in amylose ranging from 10.0 to 12.0%, and 0.26 in protein ranging from 7.0 to 7.9%. These results could be helpful to build database programming system for germplasm management.

Key words:

Amylose, Database, Germplasm, NIRS (Near-Infrared Reflectance Spectroscopy), Protein, Rice

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** (Acknowledgement) 본 연구는 농촌진흥청 농업과학기술연구 개발사업(과제번호: PJ01353904)의 지원에 의해 이루어진 결과로 이에 감사드립니다.