

Category	: International Rice Research Conference
Select Theme	: Pathways to health and nutrition
Endorsement email	:
Keyword 1	: Nutrient-dense rice
Keyword 2	:
Keyword 3	:
Title of Entry	: Identification and utilization of rice germplasm containing high grain-antioxidants
Presenting author	: Jae-Sung Lee
Presenting author email	: js.lee@irri.org
Co author 1	: Dmytro Chebotarov; Myrish Pacleb; Ruairaidh Sackville Hamilton; Hei Leung
Co author 2	: Chia-Hsing Huang; Charng-Pei Li
Affiliation presenting author	: International Rice Research Institute, Los Baños, College, Laguna, 4031, Philippines
Affiliation 1	: International Rice Research Institute, Los Baños, College, Laguna, 4031, Philippines
Affiliation 2	: Council of Agriculture, Taiwan
Select only one type of presentation	: 15 minute oral presentation
Abstract	<p>: Reactive oxygen species (ROS) in human cells cause cellular damage leading to diseases such as cancer, cardiovascular disease, Alzheimer's disease and macular degeneration. Rice, accounting for over 20 percent of global calorie intake, contains variable concentrations of bioactive compounds such as oryzanols, flavonoids, and vitamin E that act as antioxidants scavenging ROS. Therefore, increasing the content of grain-antioxidants in rice should be considered as an essential breeding target. Coloured rice varieties typically possess high levels of antioxidants. However, these are aimed at niche markets and are difficult to use in breeding programs as the genes conferring the pigmentation are dominant. Hence, we aimed to identify rice germplasm combining non pigmented pericarp and good grain quality with stronger ROS scavenging capacity than coloured rice. Here, we present promising rice germplasm with high grain-antioxidants, selected based on high throughput antioxidant screening from a diverse rice panel held in the International Rice Genebank (IRG) at the International Rice Research Institute (IRRI). Through a genome-wide association study (GWAS) using single nucleotide polymorphisms (SNP) generated from the rice 3000 genome project we identified a number of candidate genes associated with antioxidant accumulation in grain. Also, using gas chromatography mass spectrometry (GC-MS), we profiled individual antioxidants in a selected germplasm set. We expect the output of this project will be used in the rice nutrient program, and promising germplasm will be disseminated to breeders and farmers.</p>

[Read more»](#)

## Uploaded Files »

No files found.

