

Category	: International Rice Research Conference
Select Theme	: Systems physiology
Keyword 1	: Photosynthesis
Endorsement email	:
Keyword 2	: Yield potential
Keyword 3	:
Title of Entry	: Exploring of leaf traits in RDP1 sub populations and relationships to photosynthesis
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Select only one type of presentation	: 3-5 minute flash talk
Abstract	<p>: Rice contains ecologically and genetically diverse species that exhibit a vast variation in leaf and plant architecture. Rice leaf anatomy is a key factor affecting rice yield, as available photosynthetic assimilates from leaves can majorly limit rice productivity. It is believed that rice productivity could be significantly improved by mining the natural diversity in germ plasm, especially the variation in parameters indicating light-limited photosynthesis; for instance, Rubisco content. In this research, leaf anatomy and physiology of 393 rice cultivars of RDP1 population collected from 78 countries were systematically characterized. It was found that Rubisco content in flag leaves of RDP1 were closely related to leaf thickness and leaf photosynthetic rate (A). Whilst flag leaves with higher leaf area, greater Rubisco and chlorophyll content were certainly have a higher A, thinner flag leaves with high chlorophyll a:b ratio also showed resemble performances as those thicker leaves. Maximum electron transport rate (Jmax) was one of the parameters which showed the positive relationship to the chlorophyll a:b ratio in this study. From the results we obtained here, it can be concluded that the higher chlorophyll a:b ratio, the more Jmax which is one of the parameters determining electron transport-limited photosynthesis. We obtained naturally diverse flag leaves anatomy of RDP1 population and its performances in terms of photosynthesis that is vital for our Genome-Wide Association Study. Results from GWAS show genetic diversity linked to leaf traits.</p>

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