Cultivar Difference of Rice on the Flooding Stress Mitigation by Mixed Cropping
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混作による灌水ストレス緩和能力のイネ品種間差
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The impact of flooding stress on drought-adapted crops can be reduced by the mixed cropping technique with rice (Iijima et al., 2016). Under flooded soils, oxygen is rapidly depleted subsequently affecting growth and survival of dryland crops. Rice is the major crop species known to encounter the shortage of oxygen by developing aerenchyma which oxygenate its rhizospheres. The oxygen is available for the microbes and closer tangled roots of mix-planted dryland crops. This study compared the survival and physiological responses of single planted pearl millet (Pennisetum glaucum) as control and mix-planted with twelve different rice cultivars. Rice cultivars comprised of *O. glaberrima*, *O. sativa*, and interspecies. Two experiments were conducted at Kindai University, Japan, from July to October 2015. Experiment 1 was 21 days flooding in paddy field and experiment 2 was 28 days flooding in lysimeter. Survival rate, photosynthetic rate and transpiration rate were higher in pearl millet mixed planted with some of the *O. sativa* and interspecies. This result indicates that rice cultivars have varying effect on pearl millet under flooded condition. This information is vital in selecting rice varieties for further improvement of the mixed cropping system to overcome flood stress.

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