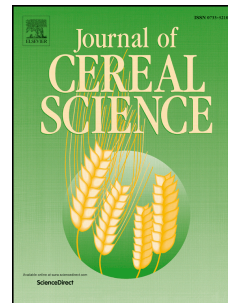


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Influence of high daytime temperature during the grain filling stage on fissure formation in rice

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1 **INFLUENCE OF HIGH DAYTIME TEMPERATURE DURING THE**  
2 **GRAIN FILLING STAGE ON FISSURE FORMATION IN RICE**

3

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14 **ABSTRACT**

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16 High daytime temperatures during the grain filling stage in rice have negative  
17 impacts on milling quality traits. In this study, we used growth chambers to  
18 evaluate the influence of high daytime temperature (33°C) during grain filling,  
19 together with grain moisture content at harvest (26%, 18% and 15%), on grain  
20 fissure formation. Varietal susceptibility to fissure formation was also evaluated by  
21 exposing grains to high temperature at different grain filling stages (milky, dough,  
22 maturing). Two fissure resistant varieties: Cypress (long-grain) and Reiziq  
23 (medium-grain) and susceptible varieties: YC53-00-7 (long-grain) and Baru  
24 (medium-grain) were compared. The average HRY of Cypress declined from  
25 62.7% at 25°C to 53.5% at 33°C, while Reiziq declined from 56.2% (25°C) to  
26 47.4% (33°C). Both were significantly higher than the HRY of YC53-00-7 (39.2%  
27 and 24.9%) and Baru (39.3% and 31.7%) at 25°C and 33°C, respectively. When

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