

## The effect of high temperature on rice quality

Fang-Yu Chang<sup>1</sup>、Chi-Chieh Hu<sup>1</sup>、Chia-Ju Hsieh<sup>2</sup>、Chih-Wen Wu<sup>3</sup>

### Abstract

The impact of climate change on crop production is global issue. Rice is the main staple food in Taiwan, especially japonica type rice, so the impact on rice production in Taiwan cannot be ignored. Here, we summarized researches of rice grain chalkiness and palatability under high temperature stress. The decreasing of sucrose transporter and enzymes related to starch synthesis, increasing of starch degradation, switching metabolism between carbon and nitrogen, and impacts on aminoacyl tRNA synthetase and protein disulfide isomerase caused chalkiness formation under high temperature. The change on the structure of amylopectin, decreasing grain thickness and root ability caused palatability become worse under high temperature. We need more investments and cooperation between research stations to solve the problem of climate change on rice production.

Key Words: rice, high temperature, chalky, palatability (eating quality)

---

<sup>1</sup> Assistant Researcher, Kaohsiung District Agricultural Research and Extension Station.

<sup>2</sup> Assistant, Kaohsiung District Agricultural Research and Extension Station

<sup>3</sup> Researcher and Deputy Director, Kaohsiung District Agricultural Research and Extension Station.