

Summary

In order to elucidate the possibility of inhibiting seed germination of wet rough rice after harvest in raining season by hot water treatment, the seeds of Tainan 5 were soaked in 70 to 100°C hot water for 5, 30, and 60 seconds. For testing the changes of rice quality by hot water treatment, the seeds of four varieties, Tainan 5, Kaosiung Selected 1, Chianung Sen 8 and Taichung Native 1, were soaked in 70°C and 100°C hot water for 5, 30 seconds, 1 and 5 minutes. The treated seeds were piled for 3 and 6 days. The IRRI' rice quality laboratory standard testing procedures (Carneau R. Paule 1969) were adopted for testing the rice quality of treated seeds. The results were as follows:

1. Soaking in 75°C hot water for 30 seconds inhibited germination of the rice seed of the three different moist conditions under various piling periods.
2. The 1000-grain weight of milled rice and percentage of brown rice were slightly increased. However, the percentage of head rice and broken kernels varied markedly with the rice varieties. The percentage of head rice from hot water treated Tainan 5 and Taichung Native 1 was only 50% of the non-treated, whereas no difference was observed in Kaohsiung suen No.1 and Chianung Sen No.8.
3. The cooking and eating quality including gelatinization temperature, amylose content, and crude protein content of the tested varieties showed insignificant difference when soaked in 70°C hot water and then piled for 3 days.
4. Grain appearances, including translucency, white belly and white center, were unchanged after hot water treatments. But milled rice color were turned into brown with the increasing water temperature or soaking time.

From the above mentioned results, it was found that soaking the wet rough rice in 75°C hot water for 30 seconds, and piling for more than 3 days in the room condition are enough for inhibiting germination and the rice quality may maintain as good as the untreated rice.