

## Relationship between recent trends in climate conditions and rice quality in the Southern Tohoku region

### Abstract

In the southern part of the relatively cool Tohoku region of Japan, the mean temperature during the rice cropping season rose at Shonai and Murayama from 1974 to 2004, yet the amount of solar radiation showed no significant trend.

Higher mean temperature and solar radiation during the first half of the cropping season advanced the heading date, exposing ripening rice to higher temperatures and more solar radiation. These meteorological influences on paddy rice were different at every site. At Shonai, the heading date advanced with the increase of mean temperature from transplanting to heading after 1980. Other sites did not show these phenomena. The mean temperatures during the latter half of the ripening period increased over time at Shonai and Murayama. Those during the first half of the ripening period exceeded 27°C several times at Shonai and Murayama, increasing the rate of white immature grains at Shonai. The amount of solar radiation during the ripening period showed no trend, but that at Natori was lower than that at Shonai and Murayama.

### Key words:

Growth stage of rice, Solar radiation, Southern part of the Tohoku region, Temperature, White immature grain