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About Journal@rchive

Journal List

Journal/
Society Search

GO

News



Science Links Japan

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The Crop Science Society of Japan [Info](#) [Link](#)[TOP](#) > [Journal List](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[Full-text PDF \(1055K\) \]](#) [\[References \]](#)**Analysis of Cool-weather Damage of Rice in 1993 Based on Data of Municipal Basis in Hokkaido**

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Abstract:

Crop situation index(CSI, a ratio of yield to average yield over years)of paddy rice in the Hokkaido area in 1993 was 40, the lowest since 1949, because of a cool-weather damage. The yield and CSI, however, varied largely among 134 municipal areas of rice cultivation in Hokkaido. The yield ranged from 10kg ha⁻¹ to 3, 820kg ha⁻¹, and the GSI ranged from 0 to 68. The yield and CSI were highest in the northern part of Hokkaido, intermediate in the central part, and lowest in the southern and eastern parts. They tended to be lower in areas where an average yield of rice over the years was lower($r=0.719^{***}$). The difference in CSI between the areas was mainly due to sunshine hours and maximum air temperature from middle July to early August, although the effect on CSI was greater in sunshine hours than in maximum air temperature. Two rice varieties, Yuki hikari and Kirara 397, although bred mainly to improve eating quality, were more tolerant against cool-weather damage than older varieties were. We therefore considered that the wide cultivation of these new varieties did not necessarily aggravate the cool-weather damage in 1993, although more tolerant varieties should be desirable in the future.

Keywords:

Air temperature, Crop situation index, Grain yield, Percentage of ripening, Sunshine hours, Varietal difference

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