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Heat stress effects analysis on wheat crop in southern provinces

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Temperature is one of the most important environmental factors that affects growth and development of plants. Temperatures above the resistance limit of plants, namely called heat stress, tend to decrease the plants physiological activities. During the ripening period of wheat, when maximum temperature is above 30°C, minimum relative humidity is below 30%, and at the same time wind speed is equal to or more than 3m/s, a kind of heat stress occurs. This weather condition results in a series of adverse effects that tend to decrease yield. When such a set of aforementioned weather elements occur in one day, that day is said to be critical. The occurrence of such critical situation in southern provinces of the country during ripening period of wheat is probable. Thus in this study by using two definitions for critical days, i.e., the frequency and intensity of heat stress, and by analyzing daily data based on the available dates of plant and harvest of wheat crop, findings were examined. Results show that in main regions of wheat planting in Khosistan province these critical days during sensitive period of wheat crop varies from 3 to 9, and on average, 4 days of which are very critical. In Zahedan and Khash in the province of Sistan and Baluchistan the mean critical days are 5 and 4 respectively. Critical days in Saravan are 12 and in Iranshahr are 6 of which 3 days in Saravan and 2 days in Iranshahr found to be very critical. In Hormozgan province critical days occur only in special years. In cities of Bushehr and Bandar-e-Daier in the province of Bushehr there is only one critical day and that occurs in sensitive period. The results are generalized to same-climate plains.