

# Jowar can emerge as sustainable alternative to wheat'

**KV Kurmanath**

Hyderabad

Climate experts have been warning that an increase in temperatures due to climate change could adversely impact the yield of wheat, causing concern among wheat-growing countries such as India.

Their worst fears have come true with a multi-national research team finding wheat highly sensitive to increases in maximum daily temperature during multiple stages of its growth in the post-monsoon and dry winter season.

The team, however, said not all is lost. It said jowar (sorghum) can step in as a viable alternative. "Jowar is able to handle increases in temperature with far less impact on yields. There is an additional advantage too. Wheat requires 1.4 times more water than jowar owing to the extension of its growth cycle into sum-



**UPPER HAND.** Jowar can handle increases in temperature with far less impact on yields than wheat, says the study

mer," the study said. The study was carried out by researchers from Columbia University, USA; Chinese Academy of Agricultural Sciences, China; Indian School of Business; and Indian Institute of Technology, Bombay.

## **WHEAT'S SENSITIVITY**

The paper titled "Climate resilience of dry season cereals in India" was published in Nature's Scientific Reports. It examined the sensitivity of

wheat and jowar yields to increases in temperature and compared water requirements under different scenarios.

The paper said the wheat yields are likely to decrease by 5 per cent coupled with a significant increase in water footprint by 2040. Jowar, in that case, is India's best bet with its meagre 4 per cent increase in water footprint with the same climatic projections, it argued.

The paper said India is the world's second-largest produ-

cer of wheat, which recorded a whopping 40 per cent increase in production since the early 2000s. "We have reached a critical turning point in India's agricultural landscape. Our research highlights the urgent need for climate-smart agriculture interventions, particularly in the rabi season," Ashwini Chhatre, co-author of the study and Executive Director of Bharti Institute of Public Policy at the ISB, said.

"The traditionally grown sorghum or jowar emerges as a game-changer, offering resilience to projected climate changes and requiring significantly less water than wheat," he said.

The total wheat production in the country has gone up since the turn of the century due both to increases in yield (26 per cent) and increases in area (17 per cent). The production of jowar, on the other hand, declined by 5 per cent in the same time period.