

Heat stress crimping summer milk output: Study

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Increasing spells of summer heatwave in northwestern India, thought to be linked to climate change, are hurting milk productivity, or output per cattle, while raising costs of production for farmers.



Surat, Sept 21 (ANI): Shepard community members throwing cow milk in the river Tapi in a protest demanding to enact strong laws against the cow slaughter, in Surat on Wednesday. (ANI Photo) (Ashok Munjani)

By Zia Haq

Increasing spells of summer heatwave in northwestern India, thought to be linked to climate change, are hurting milk productivity, or output per cattle, while raising costs of production for farmers, a study by the flagship National Dairy Research Institute has found, highlighting the vulnerability of the country's agriculture sector to extreme weather.

Climate scientists have warned that scorching heatwaves in India, among other extreme weather events, are certainly being driven by global warming, posing a risk to food output. Milk productivity in the world's largest producer has also been on a decreasing trend during summers due to heat stress, the recent study found.

The study found that each unit increase in the temperature humidity index — an indicator of thermal stress — above a so-called "critical level" significantly reduces the fortnightly milk productivity of dairy animals by 0.42-0.67% in northern Indian plains.

Under business-as-usual scenario of "population and productivity growth trends of dairy animals in the high milch animal density region comprising Punjab, Haryana and western Uttar Pradesh", production losses due to "heat stress are projected to be around 3,39,000 tonnes" in the current decade, the study states. At a standard retail price of ₹45 per litre, this loss amounts to financial loss of ₹15000 core, the study states.

Disaggregating the financial losses, the study found a higher share of losses for Uttar Pradesh than Punjab and Haryana.

More animals fell sick in summers due to extreme temperatures and dairy farmers have to increase resources – such as cooling equipment – which raises the cost of milk production by up to 12%, according to a 2021 paper by the Indian Council of Agriculture Research. For instance, cooling options, such as fans and sprinklers, raise electricity and water consumption and are not economically viable for smallholder dairy farmers.

India's milk output had risen 44% from 146 million tonne in 2014 to 210 million tonne currently, growing 6% annually, higher than the world average of about 2%.

Extreme weather poses increasing risks to India's agriculture sector, which includes dairy, which contributes 17% to the country's GDP and employs nearly half its population.

“A key risk to agriculture is the damage from unseasonal rain and heat patterns to foodgrains, vegetables and other crops. Such weather shocks have become more frequent, intense, and worryingly, remain unpredictable. For instance, October this year was one of the wettest in recent years at the all-India level,” said economist Dipti Deshpande of Crisil Ltd.