

In this issue

Greenhouse Gas Emission

An Indian perspective

India is projected as the fourth highest greenhouse gas emitter, based on current annual emissions. A General Article in this issue finds issues in the context in which this ranking has been framed and the assumptions underlying this framing.

The cumulative contribution of India towards the build-up of greenhouse gases from the historical as well as demographic points of view need to be considered to put the matter in the right perspective, argues the article, providing data to back up the argument. Read on from **page 1378**.

Joshimath Subsidence

Unstable slopes, livelihood

Uttarakhand in the Himalayas is an earthquake-prone area. Landslides are common here. It was on top of an old landslide that Joshimath in the Chamoli district of Uttarakhand was established. Joshimath was a small village at the end of 19th century. Due to the strategic location, the village grew rapidly into a town, with a huge floating population, especially in summer.

By the 1960s, signs of slope creep-associated subsidence were detected in the town and, in the 70s, the Mishra Committee appointed to look into the issue provided important recommendations which, of course, were not followed through. The beginning of this decade saw the results of this neglect: due to land subsidence, cracks in buildings developed, making them unsafe to live in.

A General Article on **page 1384** in this issue examines the field data and suggests remedial measures.

Dairy Cow Diet

Fats, fertility and milk

Increase in conjugated linoleic acid in the milk you drink improves your immune function, improves the glycaemic

index, reduces body fat and the chances of several non-communicable diseases. The amount of this desirable component in cow milk depends on the fatty acid profile of the diet. Cow rumen has bacteria that break up lipids in vegetable oils into free fatty acids. The extracellular enzymes from other sets of rumen bacteria twist the double bonds of polyunsaturated fatty acids around and add hydrogen. Thus the rumen bacteria make fully saturated fatty acids and monounsaturated fatty acids available to cows. The fatty acid profile of the diet impacts reproduction, milk yield and the nutraceutical qualities of cow milk

A Review Article in this issue deals with the digestion, absorption and metabolism of fatty acids in the diet of cows, the effect of adding various vegetable oils in bovine diet on reproductive efficiency, milk yield and influences on the desirable constituents in milk for human consumption.

Milk consumers and professionals from the dairy industry may like to flip to **page 1393** to read more details.

Tall Buildings in India

Response to ground motion

When the frequency of ground motion released by an earthquake and the natural frequency of the building match, the effect on the building is devastating. If the building is tall, with many floors, it leads to great loss of life and property. So, to calculate the natural frequency of high rise buildings, researchers have evolved empirical equations based on the dimensions and the construction materials of the buildings. The equations vary from country to country and do not apply to Indian buildings. The present Indian building codes have taken into consideration only data from low to midrise buildings.

So a Research Article in this issue examines the responses of tall buildings in Mumbai, built on seismic zone II, and in Hyderabad, seismic zone III.

The lateral dimensions of the buildings, the researchers find, have least influence on their natural frequencies. So, based on only height as a variable, they created empirical equations that are applicable to buildings in these two cities.

Architects, builders and city planners need to read the article starting on **page 1412** in this issue.

Apatani Tribe, Arunachal

Kiwi fruits and insects

The Apatani tribe in Ziro valley, Arunachal Pradesh is known for its traditional, highly productive, paddy-fish cultivation system. When kiwi fruit cultivation became popular, the tribe adapted quickly. But three chafer beetles who usually eat the leaves of wild chestnut trees also adapted to kiwi leaves. The Apatanese took this as a boon.



When these beetles emerge from the soil and swarm to kiwi plantations, the Apatanese collect them and make delightful protein-rich delicacies. Most people remove the wings and roast, smoke or boil the insects first, but some even eat the chafer beetles raw.

A Research Communication on **page 1473** in this issue examines this practice of pest control without using pesticides via entomophagy for sustainable kiwi cultivation and extra nutrition.

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