

Of the 160 samples, nearly 36.7% products from the grains and 9.8% labelled as 'gluten-free' were found to contain gluten above the acceptable level of 20mg/kg. The 2011 rules of the Food Safety and Standard Authority of India (FSSAI) has stipulated that a product can be labelled as either gluten-free if the content is up to 20mg/kg only after the product is analysed for contamination by standard internationally accepted method.

Nearly 85% of oats products – permitted as part of a gluten-free diet by many countries – showed gluten levels with a concentration range between 23.78mg/kg and 1830.8mg/kg, while buckwheat, quinoa, pulses, millets and soy products showed no such cross-contamination.

“Although the sampled grains are inherently gluten-free, their products might become cross-contaminated at post harvesting or processing facilities,” S Devindra, co-author and assistant director, NIN. “These products therefore cannot be stated as gluten-free until confirmed by test procedures. Otherwise, it might be misleading and potentially harmful to celiac patients, who are on a strict dietary plan.”

Globally, 0.67% or one in 130 people suffer from CD. A pan-India by the Delhi-based All India Institute of Medical Sciences (AIIMS) – it also the main centre of research in CD– found prevalence of the disease in 0.67% (4 to 6 million) with a high incidence in north India. “The (NIN) data is relevant because gluten-free diet is the only way of treating celiac patients and those who are intolerant or sensitive to gluten, and therefore cross-contamination of food products is a cause for concern. Even 5mg gluten, which is a chapati bite, can lead to persistence of the disease,” said Dr Govind Makharia, professor, department of gastroenterology and human nutrition, AIIMS, who has undertaken extensive research on the disease among Indians, and not involved in the study. “Cross-contamination can take place anywhere from the farm to the factory.” While studies over the past 15 years have shown the presence of gluten above the permissible limits in both labelled and naturally gluten-free food products available in US, Europe and Turkey, there is no India-specific data on gluten contamination.

Findings of the present assessment, published in this month's issue of Food Additives and Contaminants: Part A, found gluten content in 35.9% unbranded flour samples from local

markets and local mills in the range of 20–400mg/kg thereby breaching both FSSAI and the internationally laid out Codex safety levels.

Only 5 of the 51 samples from products labelled as gluten-free showed contamination above 20 mg/kg although levels were well within 100 mg/kg owing to well-adapted processing procedures and maintenance of individual mills for separate flours. Of all the regular grains, the highest amount of gluten – up to 400mg/kg – was present in sorghum samples, followed by rice (279mg/kg), gram (135.4mg/kg) and ragi (122.3mg/kg). Researchers said while common flour mill and collecting bags for rice and wheat in many milling shops is likely to be responsible for cross-contamination in rice flour samples, the presence of gluten in ragi and sorghum can be attributed to the use of a common utility area and handling procedures.

“Common flour mills, collecting bags, or flour processing area for both gluten and naturally gluten-free cereal flours might be one of the major factors responsible for the high rate of gluten contamination in local flour mill samples,” said Devindra. To address the issue of cross-contamination in gluten-free products, FSSAI in June last year reiterated that food with only 20mg/kg or less gluten content can be labelled as gluten-free, and released a guidance note on testing and labelling for food manufacturers and consumers. “Gluten intolerance is a new area of concern because its focus in India has been of recent origin owing to greater awareness today, and therefore the food system has to respond to it,” said Pawan Agarwal, secretary, consumer affairs department at the Centre.

The former FSSAI chief executive officer under whose tenure the guidance note was issued, Agarwal added, “Our department will have a meeting with FSSAI officials and other departments to see what can be done.” “Firstly, it will help raise awareness and let consumers know that a product may be compromised. Secondly, it will help us advocate and push for better vigilance by government regulatory bodies,” said Dr Shweta Khandelwal, head of nutrition research, Public Health Foundation of India, who was not involved in the study. “Lastly, it will also warn businesses to be more stringent in quality checks.”