

In this issue

Traditional Paddy Varieties

Who cultivates and why

The promotion of high yielding varieties of rice from the Green Revolution onwards has threatened the survival of traditional and hardier paddy varieties which often also have other desirable traits selected by generations of farmers. Yet there are pockets in the country where traditional local varieties are still cultivated. What types of farmers tend to cultivate them? And what are their reasons for choosing traditional varieties?

A team of researchers from ICAR-IARI examined the issue in the context of Wayanad, a mostly tribal district in Kerala. They grouped 22 traits of rice into categories such as production, biotic and abiotic stress tolerance, marketing and consumption and surveyed farmer perceptions about the traits in the district.

Gandhakashala, a local aromatic variety of rice from the area has a Geographical Indications tag now. This has increased the market value and influences the farmers' choice. But besides *Gandhakashala*, 15 other traditional varieties are cultivated by the farmers.

Interestingly, two-thirds of the farmers cultivated only the traditional varieties. The suitability of the grain for preparing multiple dishes, taste, aroma, flavour, nutritional and medicinal values – factors related to consumption – came up as the main reasons. Lower agricultural inputs such as fertilizer requirement, more adapted to local weather and climatic vagaries, need for conservation of the varieties, and tradition were the other motivating factors.

Less than one-fourth of the farmers cultivated both old and new varieties. These farmers were richer, more educated and were more influenced by factors related to marketing.

Though poor farmers have been contributing significantly towards conserving these valuable genetic resources on-farm, more concerted institutional efforts and policy support are needed to ensure agrobiodiversity, say the researchers. Turn to the Research Article on **page 1188** for more.

Pearl Millet

Iron and zinc

Compared to other cereals, pearl millet has high protein, fat and fibre content, but is low on carbohydrates. Since it has higher essential mineral content and is richer in essential amino acids, it can help overcome nutritional deficiencies and 'hidden' hunger – especially iron and zinc deficiencies. However, not all pearl millet cultivars are equally rich in iron and zinc.

Researchers in three different institutions in Gujarat delved into the genetic basis for the variations in the iron and zinc content of pearl millet using an ingenious method of crossing two varieties, one with high and the other with low content of the minerals in their grains, and following the progeny for two generations. By analysing the simple sequence repeats in the plants, they could identify two markers for high zinc and iron content.

Researchers working on pearl millet can use these markers for crop improvement. Agriculturists in general may also want to read the Research Article on **page 1194** in this issue for the method used to identify the markers.

Adopting Electric Vehicles

Social factors responsible

India is the seventh largest commercial manufacturer of vehicles. But, in the adoption of electric vehicles, India lags behind countries like the US, Norway, China and Japan. Why? In spite of the Government's scheme for Faster Adoption and Manufacturing of (Hybrid) and Electric Vehicles (FAME), what keeps us from making the switch? What are the social factors, both positive and negative, that influence the decision to buy an electric vehicle instead of those that run on fossil fuels?

Researchers from BITS Pilani identified 14 potential factors from available literature and categorised them into three themes: financial, vehicle performance and infrastructure. Using Google forms,

they collected responses to a questionnaire on the factors from people with driving licences, living in Delhi, a most polluted city.

People intending to buy vehicles, vehicle manufacturers, battery manufacturers and researchers as well as entrepreneurs wishing to set up charging stations across national and state highways and officials of the Ministry of Heavy Industries cannot afford to miss reading the Research Article which spells out ways to overcome the hurdles to the social adoption of the new technology on **page 1180** in this issue.

Infectious Diseases Hazard

Mapping with mobility

Pandemics like the flu one century ago and COVID-19 now provide clear evidence of diseases travelling with humans to far reaches. M. S. Santanam and team at IISER Pune leveraged on the augmented epidemiological model, Susceptible Infected Recovered or SIR, and the transportation network between 446 cities with a population of more than a lakh, to create an infectious diseases hazard map of India.

It is not the actual distance, but the effective distance that is influenced by the modes of transportation between cities, that matters, asserts the Research Article in this issue. Though the model assumes that the infections in the cities are homogenous, we can now get a glimpse of the differences in the hazards caused by diseases travelling from one city to another within India. If there is a disease outbreak in any of the 446 cities, we can make an informed guess about other cities that will be more affected soon, and take necessary precautions.

Besides reading the Research Article on **page 1208** public health authorities might want to take a peep at the link to an interactive map application that the group has provided.

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