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Quality protein maize for nutritional security

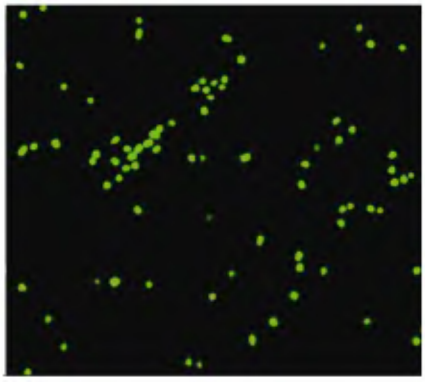
Quality protein maize (QPM) is like normal maize except that it contains twice the amount of two limiting amino acids – lysine and tryptophan. Normal maize protein is known to have half of the biological value of QPM protein that is 90% of casein – the milk protein. The enhancement of lysine and tryptophan in QPM is regulated by *opaque*2 – a recessive gene and associated modifiers. Plant

breeders have been transferring this recessive gene through backcrossing for converting normal maize into QPM; however, such transfer requires ten generations – five for backcrossing followed by five for selfing to select the progenies containing the recessive gene.

In contrast, through the use of molecular markers, an individual with recessive gene containing high proportion of recurrent parent genome can be selected in early generation (BC_1 or BC_2), thus saving enormous time and cost. This has indeed been demonstrated by Gupta and coworkers (**page 230**) who report conversion of normal maize inbreds into QPM inbreds followed by reconstitution of QPM hybrid within a short period. Based on its field performance the new QPM hybrid – Vivek QPM 9 has been recently released for commercial cultivation. This biotechnology product will have wide acceptance by virtue of being a non-GMO developed through 'Marker Assisted Selection' that has been hailed as one of the promising methods in molecular breeding and the development of this short duration QPM maize is a live testimony of the same. Plant biotechnology has indeed come of the age and is likely to fulfill the expectation of the public in the near future.

Monitoring atrazine uptake by a new fluorometric assay

Pooja Singh *et al.* (**page 268**) report an interesting new fluorometric method for monitoring atrazine uptake using a strain of *Acinetobacter radioresistens*. Around 40% decrease in the relative fluorescent intensity of the culture supernatant and a corresponding increase in the fluorescence in cell biomass was observed after 18 h of growth on the fluorescing substrate, which was indicative of the



rapid entry of the compound into the bacterial cell. This fast and safe method is a new application in the field of environmental biotechnology and can be used as an additional approach to monitor uptake of other toxic compounds by different microorganisms and to screen for different pollutant degraders.

Role of ants in pollination

Indu Sharma *et al.* (**page 283**) have carried out detailed studies on the role of ants in pollination of three wild species of *Phyllanthus*, namely *P. fraternus* L., *P. urinaria* L. and *P. simplex* Retz. growing in J&K state, India. All these species are monoecious with small, nectariferous, inconspicuous flowers present beneath leaf axils. They are also reproductively efficient as, fruit set in all

these species exceeds 80% on open pollination. The flowers are however not amenable to action by major pollinators. By designing a set of experiments in the field, the authors have established these species as typical example of ant–plant mutualism, with ants playing a major role in the reproductive efficiency of all three species. The dependence on ants for successful fruit set has shown to be variable for the three species. While *P. simplex* has total reliance on this pollinator, *P. fraternus* and *P. urinaria* are able to record a moderate fruit set even in absence of ants. This fruit set is attributed to wind pollination.