Most of the colourants used in such food are synthetic as they are cheaper. There is, however, little or no regulation governing street food supplies. This has resulted in declining safety and quality of such food. Among the developing countries, India and Sri Lanka were the earliest to enact modern food laws. Based on the experiences of the West, a more comprehensive definition of food adulteration has been given for Prevention of Food Adulteration (PFA) Act 1955 of India. However, stringent laws and monitoring are required to avoid the risk of illness.

For instance, erythrosine is banned in the US and Europe due to the presence of high iodine content and its adverse effect. But in India erythrosine has been used for multiple purposes like colouring toothpaste, in capsules, and cough syrup and as a food colourant. Similarly, carmoisine is banned in the US, Canada, Japan, Norway and Sweden as it may cause cancer and tumours based on animal studies. However, there is no restriction to this colourant in India. There are several other colourants, which are being routinely used in our lives.

The developing countries need to frame proper legislation to cover production, sale, inspection and monitoring of food colourants. Proper labelling will help the consumers. It should also be noted that not only should the food colour be shown as the cause of death or disease, but also any impurities that arise during its manufacture, and breakdown products that might arise during food processing operation, cooking or digestion have to be analysed. Many of the developing countries are not equipped to monitor outbreaks; however, the defect reports do not signify an absence of outbreaks.

Natural dyes are generally considered as less toxic, less polluting, less health hazardous, non-carcinogenic and environment-friendly[5]. Although natural dyes have several advantages, there are some limitations like high price, difficulty in extraction and discolouration during processing. On the other hand, artificial colours are cheaper and superior to natural dyes, specifically for tinctorial strength, hue and stability. Therefore, the use of artificial colours is more common than natural colours, although consumer awareness of health-related risks of synthetic colour additives has increased. There is no doubt that it is technologically feasible to prepare new natural colourants from locally known plants or microorganisms that have not yet been studied scientifically[6]. Technological limitations are the major bottleneck for the commercial exploitation of the natural food colourants. The biotechnological approach could assist the large-scale production of natural colourants at reduced cost with good quality from plants, minerals, microbes and algae. Although there has been progress and advancement in legislation and formulation technology of natural food colourants in recent years, there is scope for further improvement. Above all, public awareness regarding food colourants is essential for safety issues.

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Time to take a closer look at school-level science teaching

The discussion and despair regarding the dearth of bright and hardworking students pursuing higher physics is making the rounds for quite some time. This is a national, nay, a global phenomenon. In different parts of the world, particularly in the developed countries, academicians and social leaders are addressing this problem and are trying to find solutions, taking into account the socio-economic conditions of the concerned country. But it is possibly pinching more at the grassroots level.

In a recent write-up, Singh[1] has mentioned teaching as 'an unattractive profession'. People talk about the non-availability of good and able students for research in physics, or for that matter in most branches of basic sciences. Quite often, a significant section of the input at the undergraduate level is not top of the class as it used to be or as the subject demands and we need not elaborate on the much-talked about and well-known reasons behind it. This in fact has triggered a chain reaction and the initial impact is being felt possibly more at the school level, and not at the research levels. Because at the end of the day the very good among this bunch are going for research work, whereas the schools are getting the teachers mostly from the other group. Are we ready to face the fact that teachers with good conception in school physics or with good knowledge of the subject are slowly dwindling in number? Teachers who are capable of motivating at least a small section of students to pursue physics at a higher level are also found wanting.

One cannot expect a person who has hesitatingly and somewhat reluctantly become a school science teacher to take a keen and positive attitude towards the profession immediately on his own. In fact, a good number of teachers, who as students have taken a number of shortcuts and handy methods for scoring reasonably high marks (and we know in our system this can actually be done) often lack the ability to reveal the beauty of physics (or for that matter of the other branches of basic sciences). They also lack in confidence and occasionally the ability of solving intricate problems or providing satisfactory answers to the student's queries. In the process, they tend to downgrade themselves in the eyes of the students.

The idea of teachers' training or refresher courses for teachers is not new. But the whole procedure has to be revamped in an altogether different way, so

that it becomes more meaningful in the backdrop of the need for motivating the students. State and Central governments can use their existing infrastructure and make necessary changes for this purpose. The teachers' organizations with the declared objectives of improvement of the quality of teaching–learning of the subject, may be the partners in the programme and can help both in orienting and training the in-service teachers.

Experts will be able to identify the areas in which these teachers should be properly trained, so that they can help the students in a much better way. In fact the students' opinions and demands also need to be taken into account. The teachers who have drifted into the profession mostly because of the non-availability of better options, should be considered as the human resource that the country has. And this resource must be made better equipped. Policy-makers will have to try to make best use of this available resource by proper planning and suitable training. If the students find their teachers not shying away from problem-solving or not discouraging the habit of taking questions from them, they will definitely have better confidence in their teachers. Unfortunately, students in most of the cases have more faith in their private tutors than on their school teachers. Students who are really motivated towards science and research actually start showing this inclination right from the school level. Trained and oriented teachers may be helpful in shaping the future researchers. If we want to see the improvement in the quality of researchers, we actually need to look at the school teachers who initially train these students.

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