

A suitable UK wheat variety for making chapatis

Introduction of Mexican dwarf wheat in the late 1960s, and the high-input technology developed thereafter, ushered in an era of plenty. The scenario continues to contribute significantly to the burgeoning foodgrain stock and, of course, to the various sustainability concerns¹. There was, however, reluctance on the part of consumers to accept this variety of wheat grain for chapati-making, because these grains had been primarily bred for making bread, biscuits, animal feed and industrial use. This prompted us to take up studies on identification of parameters at the biophysical and biochemical level. The studies primarily comprised of a comparison of the earlier types of wheat, viz. the K series (K64, K65 and K68), PhC series (C273, C281 and C591) and NP series, which were considered as excellent for chapatis and the Mexican types for dough-handling characteristics, including darkening of dough and chapatis on storage for sometime, a yellow pigment content, sweetness on chewing, phytic acid content in the grain coat and so on. A series of papers on the subject have been published²⁻⁴. A test for screening wheat grains with low phenolase activity was recommended at the All India Wheat Research Workshop in 1970 (refs 5 and 6). Subsequently, however, dynamic breeding programmes at the Indian Agricultural Research Institute and various agricultural universities led to the release of dwarf wheat cultivars which were suitable for chapati-making.

During my interaction with members of the British Asian/Indian community recently, I found that the wheat flour (atta) in UK is not as good as the one back home, and is being sold as chapati flour under various brand names. It is similar to the one which was available in

India in 1960s. Earlier generation Indians settled in UK recollect the taste and appearance of Indian wheats, but are now resigned to the fact that this is the way wheat is in the UK! A small note published in the London weekly, *Eastern Eye*, reflects this opinion. This led me to correspond with a few academicians and some of the millers. Sue Salman (Camden and Chorley Food Research Association) wrote 'commonly developed varieties are developed primarily for bread, biscuits or animal feed' and felt there is not enough market in UK to have a specific breeding programme to develop wheat varieties for chapatis.

John Snape (Crop Genetics Division, John Innes Centre) was sympathetic regarding the quality of wheat used for making chapatis. He opined that it should be possible to breed a suitable UK variety. The millers refused to reply to his written queries, but admitted that whole-meal flour prepared from wheat grown for bread, biscuits and animal feed is being used for making chapatis. They felt that it was not possible to import wheat from India, as it was not sold as a specific variety with well-defined quality characteristics.

Atta is now being imported from India and efforts are on to procure suitable Indian wheat seeds to initiate breeding in UK of wheat suitable for chapati.

Discussions revealed that little has been done in terms of research to define the parameters at the biochemical/biophysical level. A few studies conducted⁷ are nowhere close to the specifics compared to those for wheat-grain suitability for making bread and biscuits. A few studies have been conducted at the molecular level^{8,9}, but no causal relationship has been attempted.

Since chapatis and other whole-meal products are home-made, it will be difficult to define quality characteristics. In the present scenario of globalization and patenting, researches need to be conducted on these aspects, before we have a repeat of the basmati story!

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Hevea latex as a wound healer and pain killer

An accidental observation leading to the finding that rubber latex produced by *Hevea brasiliensis* possesses wound-healing and pain-killing properties, was noticed. Further details remain to be worked out.

Hevea brasiliensis, the para rubber tree, yields latex – the versatile industrial raw material for over 35,000 different products. Latex contained inside the latex vessels in the phloem tissue inside the bark is extracted by 'tapping', or

controlled wounding by continuous excision of bark¹.

While performing wedge-grafting trials on rubber seedlings², it so happened that the sharp edge of the blade incited a number of small incisions on the fingers

and palm and the whole palm was covered with latex that exuded from the cut ends of the plant. Within a few hours of exposure to air, it coagulated forming a protective covering on the wound surface.

The rubber wood is a rich storehouse of starch and sugars and lacks the phenolic compounds normally present in hard wood species. Hence the primary function of latex production is defence of the wood against fungal and insect attack. Does the latex from the rubber tree perform the same function on human beings as well? Was the quick healing of wounds on my palm and fingers due to this property of latex?

During the next wedge-grafting operation, three slanting incisions (4–5 mm long) were made on the index and middle fingers of my left hand. The wounded capillaries exuded blood. The wounds were smeared with fresh latex. Latex dried up as a thin transparent film. The

wounds closely examined at hourly intervals. On pressing the wounded fingers no pain was felt. After 24 hours it seemed there were no wounds at all and all the three healed very quickly. The cut tissues developed a light blackish colour. A similar observation was noted on two other incisions, as well as on deeper gashes. Latex smeared on the wounds helped in healing the wounds by sealing them but leaving the wounded area with a blackish discolouration.

Thus it could be concluded that: (a) Fresh latex when applied on shallow wounds on the skin alleviates pain of the wound totally. (b) It totally prevents entry of infection-causing microorganisms, resulting in quick healing, thereby indicating the wound-healing and pain-killing properties of rubber latex.

Professional rubber tappers with over 20 years of experience corroborated this finding.

This very preliminary finding needs to be buttressed with detailed studies on untreated wound control and on any harmful effects due to HCN content of latex.

The rubber tree on wounding exudes its latex which on drying ensures quick healing of its wound. Maybe the tree also experiences the pain-killing and soothing effect when it is being tapped on its bark at intervals, just as man does!

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Saturation of Olive Ridley nesting sites

With reference to the article 'Is Gahirmatha the world's largest sea turtle rookery?' by Basudev Tripathy¹, I would like to add that although statistical nesting records may be older for other populations, the oldest record for any turtle population is by Anderson in 1708, who refers to the prodigious number of turtles nesting in almost a 100 km length from Kanika to Balasore which includes the present-day Gahirmatha². It is a matter of great concern that the 100 km nesting length has now been reduced to a 3–4 km island of Nasi in Gahirmatha area in the last 300 years, which means saturation of

nesting space, thereby affecting the population. Further, it may be alright to reassess whether Gahirmatha is the largest rookery or not in the world scenario, but regarding the author's apprehension that declaring the Gahirmatha population the largest may affect the downlisting of the species, it appears that the author is not aware of the fact that the IUCN Red List Standard and Petitions Subcommittee has already downlisted the status of four sea turtles, including the Olive Ridley whose status has been changed from EN A1abd (1996) to EN A1bd in the Red List based on a peti-

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Absence of condensing agent

I am appalled to see the description of a chemical conjugation between morphine hemisuccinate and albumin in dioxane at ice-bath temperature but in the absence of any condensing agent¹. This appears to be a serious omission or some kind of

a 'cold fusion' since amide bonds cannot form unless the carboxyl groups are activated by condensing agents. The structure of the conjugate of BSA and morphine shown in figure 1 is also dubious.

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