

is lower than that measured in *Phaseolus munga* (0.14 mg/100 mg). The oxalate content of seeds of *Cicer arietinum* was 0.49 mg/100 mg fresh wt., which is comparable to that reported by Gopalan *et al.* (0.417 mg/100 mg fresh wt.)<sup>22</sup>. The total oxalate content of seeds of kesari dal was 0.163 mg/100 mg fresh wt., which is comparable to that reported by Gopalan *et al.* (0.122 mg/100 mg fresh wt.)<sup>22</sup>. The total oxalate content of chocolate was 0.06 mg/100 mg fresh wt., which is comparable to that measured by oxalate oxidase electrode method (0.049 mg/100 mg)<sup>18</sup>.

Our results have shown that *Chenopodium*, pumpkin, *Brassica campestris*, spinach and beer had high oxalate content. Hence the restricted consumption of these oxalate-rich foodstuffs can be recommended to urinary stone patients, to avoid the risk of deposition of calcium oxalate in their urinary tract.

1. Oke, O. L., in *World Review of Nutrition and Dietetics* (ed. Oke, O. L.), Karger, Basel, 1969, vol. 10, pp. 262–303.
2. Kohman, E. F., *J. Nutr.*, 1939, **18**, 233–246.
3. Hironori Ohkawa, *J. Assoc. Off. Anal. Chem.*, 1985, **68**, 108–111.
4. Holmes Ross, P. and Kennedy Martha, *Kidney Int.*, 2000, **57**, 1662–1667.

5. Report, The Association of Official Analytical Chemist, Washington, DC, 1975, pp. 600–601.
6. Wilson, C. W., Shaw, P. E. and Knight, R. J., *J. Agric. Food Chem.*, 1982, **30**, 1106–1108.
7. Schwendter, N., Achilles, W., Engelhardt, W., Schwille, P. O. and Sigel, A., *J. Clin. Chem. Clin. Biochem.*, 1982, **20**, 833–836.
8. Nozal, del M. J., Bernal, J. L., Diego, J. C., Gomez, L. A., Ruiz, J. M. and Higes, M., *J. Chromatogr. A.*, 2000, **881**, 629–638.
9. Bo, Libert, and Franceschi, V. R., *J. Agric. Food Chem.*, 1987, **35**, 926.
10. Sharma, M., Thakur, M., Chandran, P. and Pundir, C. S., *J. Plant Biochem. Biotechnol.*, 2000, **9**, 123–125.
11. Foster, R. L., in *The Nature of Enzymology* (ed. Foster, R. L.), Croom Helon Ltd, London, 1980, p. 330.
12. Kennedy, J. P., *Handbook of Enzyme Immobilization* (ed. Wiseman, A.), Ellis Horwood, Chichester, UK, 1985, p. 394.
13. Pundir, C. S., Thakur, M., Goyal, L. and Bhargava, A. K., *Chin. J. Biotechnol.*, 1999, **15**, 129–138.
14. Pundir, C. S., Malik, V., Bhargava, A. K., Thakur, M., Kalia, V., Singh, S. and Kuchhal, N. K., *J. Plant Biochem. Biotechnol.*, 1999, **8**, 123–126.
15. Pundir, C. S. and Nath, R., *Phytochemistry*, 1984, **23**, 1871–1874.
16. Satyapal and Pundir, C. S., *Biochim. Biophys. Acta*, 1993, **1161**, 1–5.
17. Pundir, C. S., Kuchhal, N. K. and Satyapal, *Indian J. Biochem. Biophys.*, 1993, **30**, 54–57.
18. Assolant, C. H., Bardeletti, G. and Coulet, P. R., *Anal. Lett.*, 1987, **20**, 513–527.
19. Keesay, J., in *Biochemica Information*, Boehringer, Indianapolis, 1987.
20. Kasidas, G. P. and Rose, G. A., *J. Hum. Nutr.*, 1980, **34**, 255–266.
21. Anantha Samy, T. S., Kamat, V. N. and Pandya, H. G., *Curr. Sci.* 1960, **4**, 133.
22. Gopalan *et al.* *The Nutritive Value of Indian Foods*, NIN, India, 1989, pp. 88–91.
23. Hoover, A. A. and Karunairatnam, M. C., *Biochem. J.*, 1945, **39**, 237–238.

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