

# The Indian Corrugated Packaging Industry and its Problems

S. K. Singhal  
N. K. Naithani  
B. Biswas

These are the basic need of the corrugated packaging industry.

1. Kraft paper of requisite strength and properties at a reasonable price,
2. Pulp of suitable quality and price, and,
3. Adhesive (or gum)

On the price, quality and ready availability of these basic materials will depend not only the expansion or contraction, but also the very subsistence of the industry. Apart from price, the quality and ready availability of these materials have a profound influence on the industry.

Kraft paper is an important item for successful manufacture of corrugated packaging products. The kraft paper has been subjected to tremendous price hike in recent years as may be seen in table I.

Table I  
Price of Kraft Paper

Month and year.	Price per tonne rupees.
August 1973	2,000
June 1974	4,600
February 1975	3,800

Even during the five year period prior to August 1973, the prices

S. K. Singhal, N. K. Naithani and  
B. Biswas

*Paper, pulp and adhesive are the three main ingredients of the corrugated packaging industry. On their suitable quality, availability and price will depend the success of the industry, which is destined to play a vital role in furtherance of the country's effort for industrial and economic development.*

*The Indian corrugated packaging industry is still in its infancy and require suitable care and protection. It is facing some techno-economical problems, which require suitable dissolution, by continuous research. The paper technologists can lend a helping hand in tackling these problems and thus pave the way for progress of the industry.*

of kraft paper "have shot up by about 41 percent".<sup>1</sup>

The slight depression in the price of kraft paper in February 1975 has been more than offset by increase in the excise duty from Rs. 450 per tonne in February 1975 to Rs. 1,200 in March 1975. This has resulted in the increase of manufacturing cost of the corrugated packaging to such an extent as to lower the consumption of the commodity in September 1975 by about 40% than what was consumed in September 1974. The high cost of the paper has raised the price of the corrugated packaging to such a level as to face stiff consumer resistance, so much so, that many of the units are now working at about 35% of the installed capacity, as against working normally at 65% of the

installed capacities.

The table indicates the low per capita expenditure in India and the scope of expansion of the packaging industry in the country.

The kraft paper industry is using chemical adhesives with the twin object of (a) improving some of the physical properties, and (b) building up others, e.g., by increased fibre bonding. In general, natural gums and their preparations contain products of galacturonic type and also a small quantity of protein. The presence of small quantity of protein helps to impart complete beneficial effects to the fibre.<sup>5</sup> The use operations of vegetable gums like guar, locust bean and others, as wet-end additives is on the increase, as they produce stronger paper with good formation.

The exact mechanism of the process is not fully understood. However, some hydrophilic colloids present in vegetable gums are known to improve the formation by reduced flocculation.<sup>6,7</sup> It is believed that the gum preparation forms a hydrated film on the fibre which acts as a lubricant<sup>8</sup> and that the viscosity is only slightly increased; because, the gum preparations are used in small quantities. As a result of the addition of the wet-end additive, the change that takes place in the fibre surface is a more important factor than slight change in viscosity;<sup>9</sup> as, by addition of high viscosity gums, no beneficial effect is observed (*loc. cit*). It, therefore, follows that a gum or its preparation to serve as a wet-end-additive must be able to produce fibre dispersion by being present in a colloidal form to be absorbed on the fibre and must have enough hydration to prevent fibre adhesion and reduce the rate of flocculation. Casey has informed that "Beasley found that manno-

galactans are the most effective of the common commercial additives for inhibiting flocculation."<sup>10</sup>

The Indian corrugated packaging industry is still in its infancy and due protection is necessary for its sustenance and growth. It is depressing to note from a UNCT/D'S report<sup>11</sup> on packaging, that on an average, the exporters of the developing countries (including India) had to suffer a loss of about one-third of the export earnings, by way compensation for damages to cargoes, for faulty and defective packaging. For improving the quality of packaging and to reduce the production cost, the industry should be helped by continuous research and the Paper Technologists can prominently play their part for solving the problems associated with these aspects of the packaging industry.

#### Reference

1. Anon., All India Paper and Stationery Samachar., 15,8,7 (Aug., 1973)

2. Anon., IS : 1897-1967, Third reprint, Oct., 1973, UDC 676.45, I S I.
3. Verma, M. L., *Indian Pulp And Paper*, 28,1,10 (July 1973)
4. Sadawarte, N. S., Prasad, A. K., Shah, S. J., Desai, K. H., Dharwadkar, A. R., Parekh, K. H. and Sharma, K. P., *IPPTA*, 12,3,225 (July-Sept., 1975)
5. Cottrall, L. G., *Paper-Maker*, 128,3,203 (Sept., 1954)
6. T. R. Compte, U. S. P., 2069, 77 (Feb. 9, 1947)
7. T. R. Compte, U. S. P., 2,008, 479 (July 27, 1947)
8. Erspamer, A., *Paper Trade J.*, 110,24,321 (June 30, 1940)
9. de Roos, A. J., *Tappi.*, 41,7, 354 (July 1958)
10. Casey, James P., "Pulp And Paper", Vol. II, p. 742, Inter Science, 1960.
11. Anon., UNCTAD Rept., 1974.