

Plastic packings remain a source of environmental concern

The FAO Intergovernmental Group (IGG) on Jute, Kenaf and Allied Fibres at its Twenty-seventh Session in New Delhi, India in October 1991 requested the Secretariat to monitor developments in degradable synthetic packaging materials which could affect the markets for packagings made out of natural fibres such as jute and allied fibres.

IGG, in response prepared an information note on degradable plastics and presented it in the Twenty-eighth Session of the Committee on Commodity Problems which is held in Rome from Oct 26-28.

Plastic is one of the "wonder" discoveries of modern science. Its use has revolutionised our lives, substituting the most widely used products including iron, wood and natural fibres. Plastic has pronounced advantages in terms of costs in most applications. However, as it is a hydro-carbon product, its widespread use has given rise to environmental and health concerns, at the production, transformation and disposal stages.

The note deals exclusively with the efforts being made to develop plastic materials which reduce the risks of environmental pollution at the disposal stage. In particular, it seeks to clarify what is meant by degradable plastics and the extent to which packaging materials made of these plastics can be considered biodegradable and thus competitive in this respect with jute sacking. This note was largely based on a recent report by Greenpeace concerning degradable plastics.

Plastics and their characteristics
Plastics are a group of materials which do not occur in living systems, but rather are chemically synthesized from petroleum products. They are called "plastic" because they can be moulded, cast, extruded or otherwise processed into a variety of forms, including solid objects, films, and filaments. These properties arise from their molecular structure. Like cellulose, they are polymers, very long chain molecules that consist of many smaller subunits (monomers) linked together by chemical bonds.

The use of plastics has increased steadily over the last several decades, gradually replacing traditional materials such as glass, metals, paper, cotton and jute for many applications. World production of plastics amounted to about 80 million tons in 1990. It is estimated that currently nearly a third of world plastic production is used for producing packaging materials that are designed to be thrown away as soon as the package is opened or products inside are released.

Plastics are designed to resist chemical and physical changes. Since they are not susceptible to the ecological systems that degrade natural materials, they can last indefinitely. It may be said that every kilo of plastic that has been burned, is still with us. Many of the toxic combustion products of plastics, such as dioxin, are equally persistent.

When packagings made of jute, cotton or sisal and fish nets and fishing lines made of

natural materials like hemp or cotton are discarded, they are attacked by microorganisms and soon are assimilated into the biologically system. When such items are made of plastics or nylon—a substance foreign to living systems—they will last indefinitely.

Concepts of degradable plastics
The durability of plastic, while one of the very properties that have made it popular, has come to be seen as an environmental liability. Already in the early seventies the industry began to develop plastics that could break down more readily. Several of these new materials are on the market particularly in North America and western Europe. They are described by their manufacturers as "degradable plastic," and sometimes as "biodegradable." These include trash bags, grocery bags, and backing for disposable diapers.

However, no uniform definitions or standards for degradable plastics exist, giving rise to uncertainty also in the development of regulatory definitions. An understanding of the meaning of degradability as applicable to plastics may be assisted through the use of the following concepts:

Fragmentation
This is a process in which plastic physically breaks apart, while retaining its original chemical composition. For example, a plastic sheet may break up into fragments too small to be conspicuous as litter or to harm small animals when ingested.

Molecule-shortening
This is a process that shortens the polymer molecules and usually also fragments the original material. However, the smaller molecules retain most of the chemical properties of the larger ones.

Biodegradation
This is a process by which living microorganisms convert the original material into substances that they can assimilate and use as a source of energy and nutrients. The crucial feature of biodegradation is the complete reduction of a substance to small molecules that are metabolized (yielding carbon dioxide and water) and assimilated by living microorganisms.

In currently marketed plastic products, several different mechanisms are employed in an effort to render them degradable. One approach is to make plastics sensitive to light, or "photodegradable," by modifying polymer molecules or blending light-sensitive chemicals into the plastic. Exposing these materials to sunlight initiates chemical processes that cause molecule-shortening and fragmentation.

A second approach is to blend a small amount of a naturally biodegradable material, generally starch, with the polymer. Removal of the starch by microbial action weakens the plastic and aids in fragmentation though the plastic polymer itself remains unchanged.

Environmental impact of plastic material

In practical terms it appears that modifying plastic products to induce fragmentation helps alleviate the hazards to environment and wildlife. However, fragmentation occurs

without any fundamental change in the chemical composition of the original plastic. It indicates only that enough polymer molecules are broken to physically weaken the material, but the problems may be created by the residual non-degradable plastic particles which remain in the environment, and by the possible release of toxic additives. The following indicate some of the possible environmental implications of the use of degradable plastic.

Litter
The reduction of plastic litter was the primary motivation for the introduction of degradable plastic products. Plastic litter poses several problems, including aesthetic nuisance and the danger to wildlife. The success of degradable plastics in coping with the aesthetic problem depends primarily on how fast they break into less noticeable pieces. Most photodegradable plastics take from several weeks to several months to become brittle, and somewhat longer to break up. At such rates, disintegration may have a favourable impact in lessening the accumulation of plastic litter in areas without routine pickups.

In marine environments, photodegradation can occur even if a plastic product is under water, but at somewhat slower rates than in the air.

Landfills
Photosensitive plastics behave no differently from conventional plastics in landfills, as they do not deteriorate when buried. Although some may continue deteriorating in the dark if they are first exposed to sufficient sunlight, plastics discarded in municipal solid waste are unlikely to be exposed to significant light.

Starch-containing plastics, on the other hand, were designed largely with the goal of alleviating solid waste disposal problems. By breaking apart rapidly in landfills, they take up less volume and thus extend landfill life. In addition, the deterioration makes it easier for water and microorganisms to penetrate throughout the landfill and degrade other waste components. Most modern landfills, however, are managed to minimize the infiltration of water, in order to reduce the formation of leachate and methane gas.

Composting
Starch-containing plastics may help reduce the volume of waste going to landfills by facilitating waste composting programmes. If the bags in which yard waste are collected for composting degrade along with their contents, the time-consuming step of de-bagging can be eliminated and composting could be more economically feasible.

Incineration
Some plastics are likely to be incinerated with municipal solid waste. An important concern is that if a plastic or its additives contain metals or halogens (e.g. chlorine or fluorine), they are likely to produce toxic air emissions or toxic chemicals in the incinerator ash. This problem applies equally to degradable and conventional plastics. Thus, while degradable plastics are not likely to create new problems in incineration, they will not

alleviate existing hazards.

Toxicity of additives
A great variety of additives are used to enhance the processing and finished properties of plastics. Two categories of additives are frequently reported as being included in degradable plastic products: anti-oxidants, and colorants and inks. Other additives include anti-static agents, impact modifiers (compound that helps keep plastics from breaking under stress), flame retardants, lubricants, catalysts and initiators.

Because many common plastic additives are toxic, if they are released as plastics deteriorate, they could contaminate groundwater. High on the list of potentially hazardous additives are a number of common pigments that contain lead, cadmium, or chromium. Manufacturers of photosensitizing and starch-based additives, recognizing this hazard, generally recommend that no dyes containing metals be used in degradable products.

Conclusions
Environmental concerns have led to the development of degradable plastics, which are being increasingly used in various plastic products, such as packaging materials. While these plastics are degradable to varying degrees, they are not strictly speaking biodegradable.

The causes of such misformation are complex. Most producers of degradable plastic films, bags, or other consumer products do not conduct their own testing of either degradation or toxicity. On the other hand, manufacturers of photosensitizing or starch-based additives, have no control over how the latter are used by plastics processors and therefore are unable to guarantee the performance of any end products.

Much of the current legislation concerning plastic packaging is based on differing definitions of "degradability". However efforts are being made in a number of countries to develop consistent and accurate definitions of degradability to be used in judging the claims of manufacturers and in regulating packaging materials.

Plastic packagings, degradable or otherwise, remain a source of environmental concern due to the inherent resistance to biodegradation of the synthetic polymers from which they are made. The tendency is some countries to impose taxes on synthetic products deemed to have adverse environmental implications could in the longer run lead to higher costs for such items which were traditionally priced at very low and competitive levels.

Upward price adjustments for synthetic products, along with the increasingly perceived environmental hazards which they pose, could favour a shift to competing products manufactured from natural materials.

In the packaging sector, the market advantages that might accrue to natural fibres such as jute and kenaf would depend on how price competitive the latter remain and on how effective they will be in improving their own environmental friendliness.—FAO report

Shipping Intelligence

CHITTAGONG PORT

Berth position and performance of vessels as on 26.10.92

Berth No	Name of vessels	Cargo	L-port call	Local agent	Date of arrival	Leaving	
J/1	Sympica	Wheat(P)	Dammam	Dynamic	21/10	30/10	
J/3	Johanna-K	Wheat(P)	N Orle	Alamin	9/10	30/10	
J/4	Selar	GI/GL	Pena	ASL	19/10	28/10	
J/5	Eastern Mars						
GI	K Shen	Prog	23/10	27/10			
J/6	Ivyevrett	GI	Sing	EBPL	23/10	27/10	
J/7	Mallowevrett	GI	Cal	EBPL	25/10	27/10	
J/8	Banglar	GI/Rice	Col	BSC	21/10	28/10	
J/9	Qing He	Cheng	GI	S Hai	BDSHP	21/10	28/10
J/12	Haight	Fert(P)	Tempa	SSST	19/10	1/11	
MPH/2	Al Talsir	Rice	Viet	KSL	24/10	7/11	
CCJ	Indian						
Renown							
GSJ	Banglar	C Clink	Col	UMAL	10/10	26/10	
Kiron	Repair	Col	BSC		23/10	29/10	
TSP	Al Reza	Repair	Pacla	KSL	18/10	5/11	
RM/5	Artemis-1	Cement	-	Bright	R/A	28/10	
RM/6	Amal	Cement	Bomb	ENCL	8/10	26/10	
DDJ/1	Endurance	Sea	Repair	Aqaba	EOSL	25/1	
DXJ/2	Banglar	Repair	Mong	BSC	13/10	31/10	
RM/8	Al Salma	Repair	Hong	ASL	13/10	31/10	
RM/9	Banglar	Repair	-	BSC	R/A	28/10	

VESSELS DUE AT OUTER ANCHORAGE

Name of vessels	Date of arrival	Last port call	Local agent	Cargo	Loading port
NGS Ranger 10/10	26/10	Sing	BDSHP	Cont	Sing
Weacer Star 10/10	26/10	Sing	BDSHP	Cont	Hand
Sea Byol	26/10	-	H&H	Cement	-
Sea Tradition	26/10	Pacla	AML	Cement	-
Gold Asia (48) 8/10	27/10	Mong	AML	GI	Mom Mapu
Shenton 17/10	27/10	Sing	OMNI	Cont	-
Sumudra Rani	28/10	-	SSL	GI	-
Hafez	28/10	-	SSL	GL	Abbas
Janbaz-1	28/10	Bang	MMI	GL	Abbas
Arti	28/10	-	Seacost	Wheat	-
Kiso Maru	29/10	Mad	SSL	GI	-
Ranger	29/10	-	Luftal	Softwood Pulp	-
Banglar Doot	29/10	-	BSC	GI	-
Ahler Breeze 15/10	29/10	Col	RSL	Cont	Col
Fong Yun 18/10	29/10	Sing	BDSHP	Cont	Sing
Fushwa Mamata	30/10	Mad	SSL	GI/GL	Japa
Komsomlets Belorussi	30/10	-	CT	Mustered Seeds	-
Yamburenko 18/10	30/10	Sing	CT	Cont	Sing
Eastern Pearl	30/10	-	EPA	GI	-
Optima 20/10	30/10	Sing	RSL	Cont	Sing
NGS Express 20/10	01/11	Sing	BDSHP	Cont	Sing
Banglar Gourab	02/11	-	BSC	GI	Sing
Ingenuity 24/10	2/11	-	RSL	Cont	Sing
Banglar Robi	2/11	-	BSC	GI	Sing
Fong Shin 22/10	4/11	Sing	BDSHP	Cont	Sing
Nikos-N	5/11	Sing	BSC	Wheat	-
Mezhdure Chensk	6/11	-	Prog	GI	-
Damon	7/11	Mers	Royal	Wheat	-
Stonewall Jackson	8/11	-	Karna	GI	New York
Petr Starostin 18/10	10/11	Sing	CT	Cont	Sing
Scarer Bellona	10/11	-	Dynamic	Wheat	-

TANKER DUE

Name of vessels	Date of arrival	Last port call	Local agent	Cargo
Amphon	28/11	-	Seacom	CISO
Avon	1/11	-	CT	Palm Oil

VESSELS AT KUTUBDIA

Name of vessels	Cargo	Last port call	Local agent	Date of arrival
TT Energy	C Oil	Col	NNL	27/4
Aspiros	C Oil	J Dhan	DSLL	25/10
Banglar Jyoti	C Oil	-	BSC	R/A
Thalia	Wheat(P)	Darm	Alamin	23/10

VESSELS AT OUTER ANCHORAGE

READY ON

Name of vessels	Cargo	Last port call	Local agent	Date of arrival
Ronald	C Clink	Col	UMAL	8/10
Safina-e-Najam	C Clink	Col	ASL	R/A(22/10)
Lamda	Wheat (P)	Monka	Dynamic	19/10
Banglar Shobha	GI	Cal	BSC	26/10

VESSELS NOT READY

Name of vessels	Cargo	Last port call	Local agent	Date of arrival
S E Haider	Cement	Kara	ASL	R/A(20/9)
Banglar Shourabh	-	-	BSC	R/A(19/10)

VESSELS NOT ENTERING

Name of vessels	Cargo	Last port call	Local agent	Date of arrival
Sea Destiny	Cement	Pacla	AML	18/10
Belgorod Dnestrovskiy	Scraping	Mong	CT	22/10

The above were the Monday's Shipping position and performance of vessels of Chittagong Port as per berthing sheet of CPA supplied by HRC Group, Dhaka.

Price Index

Essentials

Item	Price (Taka per kg)	Item	Price (Taka per kg)
RICE		Green Coconut (Small)	5.00-6.00
Aman (fine)	16.00-17.50	Coconut (Large)	8.00-10.00
Patana	13.00-13.75		
VEGETABLES		Pineapple	12.00-15.00
Potato (local)	11.00-12.00	Banana : (4 pieces)	12.00-15.00
Brinjal	8.00-12.00	Sugar (Large)	4.00-5.00
Karola	10.00-12.00	Champa	3.50-4.00
Lalaha	4.00-6.00		
Papa	5.00-7.00	Dates	NA
Green Banana (Four Pieces)	4.00-6.00	OIL	(Taka per litre)
OTHER FOODSTUFFS		Mustard	53.00-55.00
Flour	13.50-14.00	Soybean	38.00-39.00
Atia	11.00-11.50	Coconut (Colombo)	90.00-100.00
FNH	(Taka per kg)	Vegetable Ghee (1kg)	48.00-52.00
Rubi (big)	16.00-17.00	SPICES	(Taka per kg)
Kaila (big)	9.00-10.00	Onion (local)	10.00-10.50
Haha	4.00-5.00	Garlic (local)	26.00-35.00
Pungas	11.00-12.00	Chillies (local)	25.00-35.00
Shrimp (big)	10.00-12.00	Turmeric (Local)	48.00-52.00
Soya	9.00-10.00	Green chillies	15.00-20.00
Ko	11.00-12.00	Ginger	18.00-22.00
MEAT		Cinnamon (10gm)	3.00-3.50
Beef	55.00-60.00	Cardamom (10gm) (small)	10.00-11.00
Mutton	85.00-90.00	Jaina (50 gms)	8.00-10.00
CHICKEN		MILK	(Two kgs)
Large	62.00-64.00	Dano	324.00-325.00
Moderate	66.00-68.00	Red-Cow	320.00-321.00
Small	70.00-72.00	MISCELLANEOUS	(Taka per kg)
TEA		Ghee	220.00-240.00
Dust (Plain)	80.00-90.00	Salt	7.50-8.00
EGG	(4 pcs)	Sugar	31.50-33.00
Hen	12.00-12.50		
Duck	12.50-13.00		
Firm	12.50-13.00		
PULSES	(Taka per kg)		
Mashur	29.00-30.00		
Mogh	34.00-35.00		
Chola	22.00-24.00		
Kharai	15.00-16.00		
FRUITS			

Gold & Silver

Item	Price (Taka for 11.66 grams)
Gold (Guinea)	6200.00
Silver	200.00

Source: Department of Agriculture marketing

Jute market dull in southern dists

BARISAL, Oct 27: The jute market in southern districts is dull with low price of the golden fibre and its low quality, reports UNB.

The districts which are facing problems in marketing jute are: Barisal, Jhalakathi, Bhola, Patuakhali and Borguna.

"Middlemen" are taking the opportunity of the situation in the absence of government jute purchasing centres in these districts.

Jute growers alleged that they were being compelled to sell their produce at a low price.

Sources said, jute was produced on about 50,000 acres of land in Faridpur district but those could not be processed for water scarcity which lowered its quality.

Jute is being sold between Taka 225 to 250 per maund, which, jute growers said, were below production cost.

AI starts Dhaka-Delhi flights tomorrow

Air India, Indian national carrier, will celebrate its diamond jubilee on October 29, reports BBS.

Marking the celebrations of "sixty years in flying colours", the Air India will also reintroduce its Dhaka-New Delhi direct flight from October 29, the airlines sources said Tuesday.

On the occasion of the diamond jubilee, Air India will release a new "avtaar" — "maharajah".



Ahmed Fuzi Bin Hazi Abdul Razak (extreme left), High Commissioner of Malaysia in Bangladesh, holding discussion with M Yunus (2nd from left), President, DCCI on Tuesday. Masudur Rahman (2nd from right), Senior Vice-President and A T M Waziullah (extreme right), Director of DCCI are also seen in the picture.

WB likely to provide \$100m for development of roads

Construction of Jamuna Bridge will be on schedule and construction of two others in Khulna and in Pakshi is under active consideration of the government, reports UNB.

The minister said World Bank is likely to finance 100 million US dollar to take development projects in the road sector, especially for construction of "A" category feeder roads. The loan negotiation would be finalised before June '93.

He said 30 double-deckers would be procured for BRTC to ply on the streets of Dhaka that would help ease out traffic jam.

This was stated by Communications Minister Oli Ahmed at the 11th meeting of the Parliamentary Standing Committee on Ministry of Communications held at the cabinet room of Jatiya Sangsad today.

The minister informed the committee that Italy had expressed willingness to construct Rupsha Bridge at Khulna while the survey was done by Japan on construction of Padma Bridge at Pakshi.

Oli Ahmed emphatically said construction of Jamuna Bridge will be on schedule and the government will proceed

as per commitment to the nation.

Reconstruction of Karnafull Bridge, damaged badly in the catastrophic cyclone and tidal surge of April 29, 1991, will be completed by March next year, he added.

State Minister for Communications Mohammad Fazur Rahman, Whip of Jatiya Sangsad Abdul Karim Advocate, Mohammad Shamsul Huq MP