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NEWS LETTER

OIL TECHNOLOGISTS' ASSOCIATION OF INDIA
WESTERN ZONE

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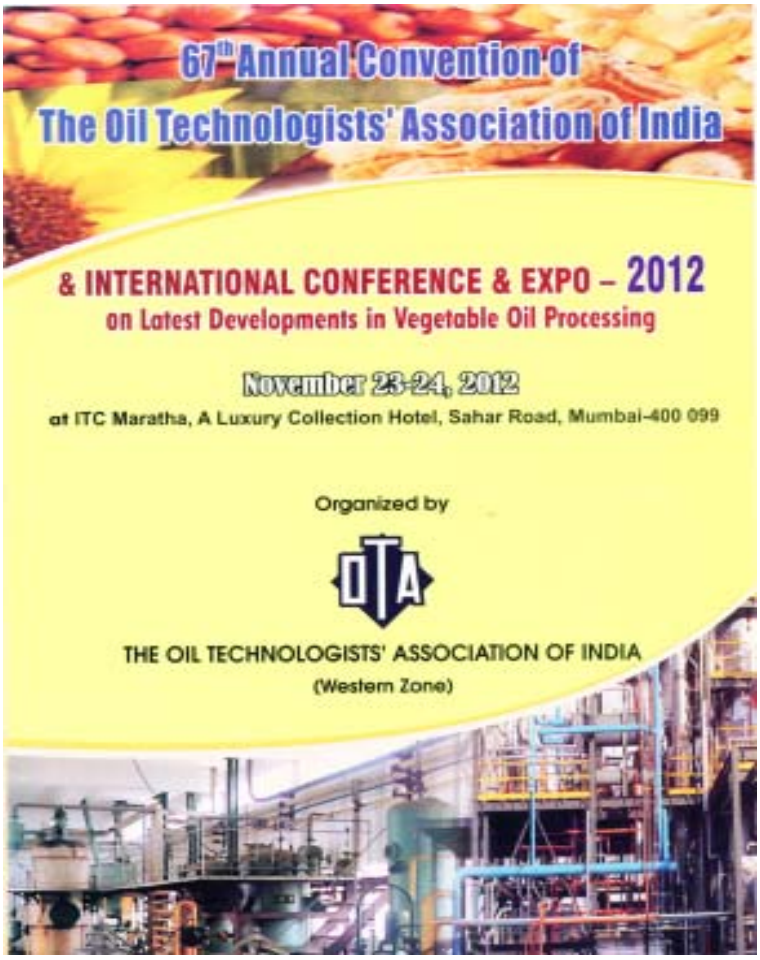

This news letter is for free circulation only to the members of OTAI-WZ

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OIL TECHNOLOGISTS' ASSOCIATION OF INDIA WESTERN ZONE

From the Editors's Desk

India goes into a massive Election Process. A revolution in store. Hopefully, Self-respect, Self-esteem, Love of the country, Emphasis on Good Principles would be guiding factors. Every Section of the populace will play its role. To make India, a proud nation and leader for good causes. Despite the despondency Indian people will deliver a stunning blow to the comity of nations.

Jai Hind

Trade & Commerce

"NOTEWORTHY"

BIODIESEL

WORLD production of biodiesl has increased by an estimated 2.5 Mn T in 2013 according to our estimates, which compares to only 1.6 MnT in 2012 when biodiesel output increased at best marginally in the US, Argentina and Brazil. In 2013 Argentine production suffered a setback by roughly 0.4 Mn T but this was more than offset by increases of 1.2 Mn T in the US, 0.2 Mn T in Brazil and roughly 0.5 Mn T in Indonesia.

World production of biodiesel is thus seen reaching a new high of more than 26 Mn T in Jan/Dec.2013, up a stunning 60% from four years ago.

The large growth of biodiesel production in 2013 has been partly promoted by increasing admixture mandates, but the biggest impact probably stemmed from increasing biodiesel usage outside the mandates, favoured by the competitiveness of vegetable oil prices relative to crude mineral oil prevailing until September 2013. The latter was reflected in large-scale biodiesel exports to West African countries, primarily from the US.

Furthermore, China has reportedly imported roughly 200 Thd T of biodiesel per month in the second half of 2013, primarily palm methyl ester from Indonesia, Malaysia and Thailand. Biodiesel demand from China benefited from low prices and the fact that biodiesel or blends with mineral diesel allowed importers to circumvent paying a consumption tax of about USS / T 150 applied on diesel imports.

This practice will probably disappear now that palm oil prices have appreciated significantly relative to crude mineral oil.

Soya oil and palm oil are the leading feedstock for biodiesel production with roughly 7.2 Mn T each in 2013. Palm oil has shown outstanding growth rates - its usage as biodiesel feedstock more than doubled within four years. Indonesia has clearly taken the lead with production of palm oil-based biodiesel seen reaching roughly 2.5 Mn T this year, thereof 1.5-1.6 Mn T for the export market and the remainder used domestically. In 2014 Indonesian biodiesel production will probably continue to rise, driven by the increase of the blending rate from 7.5% to 10%.

Feedstock Use for Biodiesel Production (Mn T)

	2013	2012	2011
Soya Oil	7.24*	6.88	7.33
Palm Oil	7.15	6.15	4.66
Rapeseed Oil	6.09*	6.22	6.27
Sunflower Oil	0.17	0.17	0.14

Soya oil usage for biodiesel production may increase by roughly 0.7 Mn T in Brazil in 2014 owing to the looming move from B5 to B7 admixture and increasing efforts to gamer share of the world biodiesel trade. Argentine production of soya methyl ester may increase only slightly owing to poor export prospects. US biodiesel production may decline more or less sharply next year after the expiration of the blenders' credit and the expected reduction of the RFS2 mandate for advanced biofuels.

Consumption of rapeseed oil for biodiesel probably declined for the thrid year in a row to an estimated 6.1 Mn T in 2013, thereof 5.5-5.6 Mn T in the EU-28.

The importance of tallow as biodiesel feedstock increased further, tightening supplies for other applications. World consumption of tallow for biodiesel is seen rocketing to 1.9-2.0 Mn T this year, thereof orabout 0.4-0.5 Mn each in brazil,the US and the EU and roughly 0.3 Mn T in singapore.

Used cooking oil is the fourth largest feedstock for the global biodiesel industry with an estimated 2.2 Mn in 2013,thereof 0.6 Mn T in the US and an estimated 1.1 Mn in the EU.

other oils &fats play an important role as boidiesel feeedstock primarily in the US (above all corn oil) and brazil (mainly cotton oil).

(Courtesy : SEA NEWS CIRCULAR, VOL XVI, ISSUE 9, DEC. 2013).

"MORE AND MORE"

Surge in imports of Vegetable Oils

THE month of November 201 3 has witnessed a surge in imports of vegetable oils and reported at nearly 9.5 lakh tonnes compared to 7.0 lakh tonnes during November, 2012, up by 35%. This was mainly due to Sunflower oil being cheaper by USS 30 per ton to Soybean oil encouraged larger shipment of Sunflower oil, Spread between RBD Palmolein and Crude Palm Oil reduced to less than US$ 10 per ton made RBD Palmolein attractive over CPO and also in anticipation of likely increase in import duty, palm oil shipments were higher during the month.

During November, 2013, import of RBD Palmolein jumped to over 2.0 lakh tonnes compared to 76,000 tonnes in November, 2012, due to inverted export duty structure imposed by Indonesian and Malaysian Governments coupled with reduction in duty difference from 7.5% to 5% by Government of India in January, 201 3.

If no action is taken by our Government, import of RBD Palmolein is bound to increase by leaps and bounds and may cross 30 lakh tonnes during the current oil year, leading to lower capacity utilization of refining industry and eventually refining industry may have to close down. I once again appeal to the Government to revise the import duty structure and increase the duty spread between crude and refined oil atleast by 10% to safeguard the interest of domestic refining industry and let it survive.

(Courtesy : SEA NEWS CIRCULAR, VOL XVI, ISSUE 9, DEC. 2013).

"SAD STATE"

India Can Produce 1.5 Million Tons of Rice Bran Oil, But Lacks Demand

INDIA has the potential to produce 1.5 million tons of rice bran oil annually, but there is insufficient demand for the oil in the domestic market and bulk exports of edible oil are banned, says the Solvent Extractor's Association of India (SEA).

According to the SEA, India currently produces about 900,000 tons of rice bran oil, about 75% of the total global production of 1.2 million tons. India is the world's largest rice bran oil producer followed by Japan (70,000 tons), Thailand (60,000 tons) and China (50,000 tons). Of the 900,000 tons of oil produced, only 300,000 is consumed as edible oil in India, while the remaining is blended with other oils or used as other food items. India currently imports around 10 million tons of edible oil including palm oil, soybean oil and sunflower oil yearly spending about Rs.600 billion (around $9.6 billion). India could reduce edible oil imports by investing in rice bran oil extractors and encouraging rice millers to sell the rice bran to the oil industry, the SEA says. India produces 9 million tons of rice bran yearly but only 5 million tons is processed to extract oil and the remaining is used as cattle feed.

However, the SEA Executive Director says that the country's rice bran oil production is increasing by 50,000 tons yearly and is expected to increase if the demand increases. The growth in rice bran oil consumption in India in the last four to five years is around 20%-25%. Demand for Indian rice bran oil is also increasing. Thailand and Japan have shown interest to import rice bran oil from India but Indian government does not allow bulk exports of edible oil.

India is the second largest producer of rice in the world and its paddy rice production has been steadily increasing from 125 million tons in the MY 2004-05 to 157 million tons in the MY 2012-13. According to the USDA, India is expected to produce about 155 million tons of paddy rice in the MY 2013-14.

(Courtesy : Business Empire, February 2013)

"SOON"

Golden Rice - A Revolution Still Waiting to Happen

"GOLDEN Rice will certainly be accepted one day. We are only trying to put pressure so it will be accepted earlier than later. Each second of the day a child dies unnecessarily." These are the words of Dr. Patrick Moore, Canadian ecologist and former director of Greenpeace, who is leading a campaign to make Golden Rice acceptable in the EU and across the world.

What's surprising about Dr. Moore's words are that these come almost fourteen years after Swiss scientists Dr. Ingo Potrykus and Dr. Peter Beyer's Eureka moment when they created a variety of rice containing beta-carotene, an invention that has the potential to greatly reduce Vitamin A deficiency in some of the poorest countries of the world.

According to the World Health Organization (WHO), about 250 million pre-school children suffer from a vitamin A deficiency. "About 2 million die each year from this deficiency. It is therefore more deadly than either malaria or HIV/AIDS," says the Allow Golden Rice Now! (www.allowgoldenricenow.org) project. The deficiency results in 250,000 and 500,000 irreversible cases of blindness annually, mainly in children, half of whom die within a year of becoming blind. Most of these people live in urban slums where poverty restricts their diet to a daily ration of rice.

This can change with the introduction of Golden rice, says Dr. Adrian C Dubock, Executive Secretary, Golden Rice Humanitarian Board and Project Manager Golden Rice (www.goldenrice.org). According to Dr. Dubock, vitamin A is essential for a fully functional human immune system, for eyesight, and other requirements. In children beta-carotene in Golden rice is converted to vitamin A the same as from beta-carotene in vitamin pills. About two beta-carotene molecules make one molecule of vitamin A, which means that around 40 grams per day of a dry Golden Rice variety can prevent death or blindness.

There is a growing interest among governments in countries such as the Philippines, China, Bangladesh, Nigeria and India to allow trials and grow Golden Rice. Leading scientists across the world support trials and say that questions can't be answered without tests. However, trials of Golden rice face resistance across the world due to opposition from groups led by Greenpeace. Opponents have several concerns which was asked from Dr. Patrick Moore.

Q. Golden rice is unnatural and man-made, so it is like plastic that will harm my intestine and other parts.

Dr. Patrick Moore: Golden Rice is as natural as any rice, all of which is made by human breeding of rice. In fact plastic will not harm your intestine if it is ground finely.

(The Allow Golden Rice Now! project says, "Genetic engineering (or genetic modification, often called GM, the products being genetically modified organisms, or GMOs) is an entirely organic procedure. In this sense it resembles conventional breeding (sexual reproduction) as it does not require chemicals or radiation to produce changes in the DNA of the product. Genetic modification simply involves moving a small piece of organic DNA from one plant or animal to another. It is very precise in that the DNA that is moved is known to be responsible for expressing the desired trait in the species being modified...Conventional breeding is a slow and imprecise process. The vast majority of mutations are useless, detrimental, or even fatal. But on occasion a mutation occurs that improves some aspect of the plant's growth, productivity, resistance to disease, or other factors. It is very much a scattergun approach.")

Q. Golden rice is unsafe because not enough test: have been carried out on humans?

Ans: ***Dr. Patrick Moore:*** Tests have been carried out on adults in the U.S. and on children in China. Both proved the beta carotene [in Golden rice] will be converted to vitamin-A in the body [significantly]. Q. Golden rice is being promoted by some seed companies which want to control global food security and have a monopoly in seeds. Ans: Dr. Patrick Moore: Golden Rice has no corporate control, it is a humanitarian project. No company has a monopoly in seeds. Any farmer

can start a seed company, that is how seed companies begin. It is ridiculous to think that a seed company can get control of global food production by selling seeds to farmers who want the seeds.

(The Allow Golden Rice Now! project says, "In the name of 'free choice,' activists have worked to deny farmers the choice by campaigning to make GM illegal. They were particularly successful with this approach in Europe, where incidences of mad-cow disease and chemical contamination have sensitized the public to food scares. European agriculture is shaped more by social policy than by economic necessity. Farmers are paid not to grow food, as there is a regional surplus. Those who do grow food receive large subsidies. So, European farmers do not havte..'much incentive to improve their yields or profits.").

Q. Golden rice will discourage food diversification because people eating Golden rice will think it is a complete food?

Ans: Dr. Patrick Moore: Golden Rice is a more complete food than normal rice. If these people with vitamin A deficiency could afford a balanced diet they would get it, but they only eat rice each day. With Golden Rice their nutrition will be better and they will not so easily goblind or die.

Q. Golden rice will hurt rice exports because GM foods are banned in several countries including the EU, China, etc. and such countries usually don't buy any rice (GM or traditional) from countries that grow Golden rice for fear of contamination?

Ans: Dr. Patrick Moore: Rice is not a major export crop. Most rice is eaten in the country where it is grown. So this will not be a problem. The idea of "contamination" is stupid because the only possible outcome would be more rice plants with beta carotene therefore better health.

Q. Golden rice is very expensive and takes a long time to cook.

Ans: Dr. Patrick Moore: Golden rice will be the same price as normal rice. It will take the same time to cook (where did you get that idea which is so goofy?).

Q. Golden rice tastes very turmeric-like?

Ans: Dr. Patrick Moore: Not true, it tastes like rice. History proves that fears and orthodoxy have not made the world better, science has. The Golden Rice case also seems to reiterate this.

(Courtesy : Business Empire, February 2013)

" WHAT A LOSS ! "

Pest and disease issues result in crop losses of Rs. 50000 crore: Study

PEST AND DISEASE infestation amounts to crop losses worth a whopping Rs 50,000 crore each year in India, according to an ASSOCHAM-Yes Bank study.

"This huge crop loss could be attributed to the low pesticide consumption in India which is less than two per cent of global usage and is confined to one-fourth of the total arable land (about 180 million hectare)," stated the study titled 'Second Green Revolution-Agriculture to Agribusiness.'

"The pesticides market is largely fragmented as top five players account for only 57 per cent of the total market and no player alone has over 20 per cent share," said Rana Kapoor, president, ASSOCHAM (Associated Chambers of Commerce and Industry of India), while releasing the findings of the study. The pesticides industry in India is currently estimated at about Rs 17,000 crore and is growing at a compounded annual growth rate (CAGR) of about 15 per cent.

"Growing awareness about negative impact of pesticides on human health is giving way to bio-pesticides industry which is growing at about two-five per cent CAGR in India as against the global growth rate of 10-15 per cent and India's share in global bio-pesticide market is approximately less than two per cent," said Kapoor.

"For its further growth, India's pesticides industry needs support of the government and regulatory bodies to ensure the existence of an appropriate legal and regulatory framework together with adequate infrastructure." Andhra Pradesh, Haryana, Karnataka, Maharashtra, Punjab and

Uttar Pradesh having fertile land are major pesticides consuming states, while states like Kerala, Orissa and Bihar are least pesticide consuming states mainly due to low purchasing power of farmers having fragmented land holdings, highlighted the study.

Low levels of research & development due to lack of skills and necessary funds is a critical element which is hurting the growth prospects of the pesticides market in India.

Besides, lower brand awareness is another critical element as currently the pesticides market is low on brand-consciousness and highly price-sensitive as most farmers do not buy products because of brand name and generally consider price as an important factor, according to the study.

"The pesticides industry in India essentially needs to focus on developing a brand for itself in international markets, increase focus on R&D and build global scale plants," said Kapoor. "Future growth in the pesticides industry will come from herbicides and fungicides due to higher cultivation of BT cotton, fruits and vegetables."

Low per hectare domestic consumption offers a huge untapped potential for growth of pesticides industry in India. Besides, the export market has been a boon to the declining pesticide industry and easy availability of raw materials, low-cost trained and skilled workforce, low overheads and technically qualified managerial base will continue to make India an attractive sourcing destination for global multinational corporations, according to the study.

"In the next five-seven years, the pesticides industry will witness consolidation which may lead to better quality pesticides, improved pricing and margins, besides extensive marketing and customer-centric approach by large players will increase proper application of pesticide doses," said Kapoor. "Considering there would be a substantial increase in production of genetically modified crops, the companies will therefore have to target newer non-GM crops to increase pesticides' usage.

(Courtesy : Business Empire, February 2013)

"BRAVO"

Food processing industry plays great role in India's development

FOOD processing industry is of enormous significance for India's development because of the vital linkages and synergies it promotes between the two pillars of our economy, industry and agriculture. Fast growth in the food processing sector and simultaneous improvement in the development of value chain are also of great importance to achieve favorable terms of trade for Indian agriculture both in the domestic and the international markets. The sector however has to go a long way. Even important is the crucial contribution that an efficient food processing industry could make in the nation's food security for instance the post-harvest losses of selected Fruits and Vegetables are about 25% to 30% in our country Even marginal reductions in these losses are bound to give us better returns and thereby improve the income level of the farmers.

During the last one decade, India moved from a position of scarcity to surplus in Food. Given the trade in production of food commodities, the Food Processing Industry in India is on an assured track of growth and profitability. It is expected to attract phenomenal investment in capital, human, technological and financial areas. The total food production of India is estimated to double in the next ten years. Hence there is an opportunity for large investments in food and food processing technologies, skills and equipment. The major interventions in this context are, for example, Canning, Dairy and Food Processing, Specialty Processing, Packaging, Frozen Food/Refrigeration and Thermo Processing. Fruits and Vegetables, Fisheries, Milk and Milk Products, Meat and Poultry, Packaged / Convenience Foods, Alcoholic Beverages and Soft Drinks and Grains. Health food and health food supplements are other rapidly rising segments of this industry.

The Food Processing Industry sector in India has been accorded high priority by the Government of India, with a number of fiscal relief and incentives, to encourage commercialisation and value addition. As per a study conducted by McKinsey ant: Confederation of Indian Industry

(CM), the turnover of the total food market is approximately Rs 250,000 crores (US $ 69.4 billion) out of which value-added food products comprisej Rs.80,000 crores (US $ 22.2 billion). Since the liberalisation in August, till February 2000,1 projects of over Rs. 53,800 crores (US.13.4 billion) have been proposed in various segments ofl the food and agro-processing industry. Besides this, the Government has also approved! proposals for joint ventures, foreign collaboration, industrial licenses and 100% export oriented units envisaging an investment of Rs 19,100 crores (US $ 4.80 billion) during the same period. Out of this, foreign investment is over Rs. 9100 crores (US $ 18.2 billion).

(Courtesy : BUSINESS STAR, February 2014)

"FOLLOW"

New ideas through new products

THE Mysore-based Central Food Technological ResearJ Institute (CFTRI) is working on food products that genera heat in the human body, as a remedy to overcome extrenj cold conditions such as those in north India and otherpartsj the country. On the 'Designer green milk' that was unveiled j the seventh International Food Convention on the CFTRI camp| recently, there was overwhelming response to the produt Many organisations, including some hospitals, have s interest in partnering with us for commercial production. Suj responses encourage us to come up with more novel produi The institute has claimed that the product has nutriti benefits and described it as a "food for the future". Green milkl produced from commonly available plant sources, whiq according to the CFTRI, are "equivalent" to fish oil intheirheal benefits.

(Courtesy : BUSINESS STAR, February 2014).

"LOOK OUT"

Opportunities & Transformation in food Processing

THE Indian food value chain is on the verge of a great transformation - from one characterised by high wastage, low processing and low global contribution to one that is more streamlined, more integrated and more significant in the global rade, according to a FICCI-KPMG report on 'Enhancing Competitiveness of Indian Food Chain'.

The report says the opportunities in the food processing industry are significant and expected to reach a size of Rs 400,000 crore by FYlScontributingto around 6.5 percentto the GDP. The vast Indian agri business market has also triggered a surge in private equity (PE) placements and mergers and acquisitions (M&A) in the past few years. Over 2008-2012, private equity (PE) investments in agri business have grown to 3.8 percent in 2012 from 0.2 percent in 2008. During the same period, venture capital (VC) investments in agri business grew from 0.2 percent to 1.6 percent of the total investments. Agri-logistics is the other area that has been attracting a lot of attention from investors with over $ 60 million invested just in 2012, the report pointed out.

Stating the agriculture sector had been suffering from major roadblocks, the report estimated that the loss of primary produce before reaching the market due to lack of proper handling, cleaning, sorting, grading and packaging facilities at the village level was 30-40 percent for agricultural products such as grains, fruits and vegetables According to the report, problems exist at each stage of the value chain. The unreasonably long supply chain results in a steep increase in the total cost owing to procurement, transit and other taxes and service charges levied at various layers. Consequently, the price received by the farmers is in the range of 25-60 percent of what the consum pays.

(Courtesy : BUSINESS STAR, January2014).

"IMPROVE"

Poor packaging is the cause damaged food products

ACCORDING to a top official of the Indian Institute of Packaging (IIP), about 35-40 percent of food products are being damaged or lost due to poor packaging in India. Either flavour of products was getting less or the food was getting stale due to improper packaging, particularly processed food made by cottage industries, which use candle and sealing machine to pack the covers. Moreover, there was some stipulated norms in packaging food products, depending on its shelf

life and also marketing, whether domestic or export, which a large section of the producers were not adhering to. Moreover, IIP will start an office in Bangalore who has headquartered in Mumbai. It has offices across various locations such as Hyderabad, Kolkata, Chennai and so on. The apex body set up in 1966 is under the administrative control of the Ministry of Commerce and Industry. The institute imparts training, provides consultancy and projects, laboratory testing, quality control checks, organises expos etc. Over 25,000 individuals from India and —*—^- abroad are said to have passed the portals of IIP.

(Courtesy : BUSINESS STAR, January2014).

"info@finger-tips"

51th All India Oil & Oilseeds Convention Emphasis on raising oil crop yield

THE 51th All India Convention of Oilseeds and Oils Trade & Industry was recently held in New Delhi from Oct 18-19. The Convention was inaugurated by Haroon Yusuf, Minister of Transport, Food & Civil Supplies, GNCTD. Welcoming the guests and participants and media persons at the Convention Laxmichand Aggarwal, President, COOITsaid the main aim of the Convention is to present ample time for discussions and deliver the best scientific viable ways to enhance the production and supply of adequate and safe edible oils at affordable price to the consumers.

Mr Aggarwal said today vegetable oil sector is facing serious difficulties and we need to find speedy solutions. In order to achieve the objective of achieving self-reliance in the edible oil segment, various proposals have or are being submitted to the Govt from time to time. As a result, certain issues have recently been addressed by the Centre which include higher MSP on oilseeds to provide remunerative prices to oilseed farmers; bringing back the process of updating the tariff values on par with the prevailing international prices; withdrawal of lOpercent export duty on deoiled rice bran oil cake; inserting the provision for Trans Fatty Acids limit in Vanaspati under the Food safety & Standards Act, 2006; extending time period for business operators for seeking conversion, renewal of their existing licenses and also for food business operators who have not obtained licenses or registrations under the FSS act by another 12 months with effect from Feb 05,2013 to Feb 04,2014, etc.

Highlighting other issues plaguing the oil industry Mr Aggarwal said certain issues like higher budgetary support for improvement in productivity and production of oilseeds, adequate support for oil pal plantation, Rationalization of import duty structure, liberalization of export policy for free and unrestricted export of edible oil, framing provision for multi-blending, strengthening distribution of subsidized edible oil to the poor need to be urgently addressed by the centre.

Given below are the kharif oilseeds estimates released by COOIT at the Convention:

COOIT's Kharif output estimate: Groundnut

In Lakh Tonnes

State	2013-14	2012-13
Gujarat	25.00	6.90
Maharashtra	1.75	1.40
Andhra Pradesh	6.00	5.00
Tamil Nadu	1.80	2.50
Karnataka	3.50	2.00
MP/Chhattisgarh	1.70	1.90
Rajasthan	5.20	4.60
Punjab/Haryana/UP	0.80	0.60
Odisha	1.00	0.90
Others	0.40	0.40
TOTAL	**47.15**	**26.20**

COOIT's Kharif output estimate: Soybean

State	2013-14	2012-13
MP	50.00	57.0
Maharashtra	37.00	33.50
Andhra Pradesh	2.50	1.75
Rajasthan	8.50	1.50
Karnataka	2.20	1.40
Chhattisgarh	1.20	1.75
Gujarat	0.80	0.70
Others	0.10	0.40
TOTAL	**102.30**	**107.0**

COOIT's Kharif output estimate: Rape/Mustard/Toria

State	2013-14	2012-13
UttarPradesh	1.00	1.00
Rajasthan	0.40	NA
Punjab/ Haryana	NA	0.40
Gujarat	NA	NA
MP/Chhattisgarh	NA	NA
West Bengal	NA	NA
Bihar	NA	NA
Eastern India/Others	NA	0.10
TOTAL	**1.50**	**1.50**

COOIT's Kharif output estimate: Sunflowerseed

State	2013-14	2012-13
Karnataka	1.50	1.20
AndhraPradesh	0.10	0.10
Maharashtra	0.20	0.20
Tamil Nadu	0.05	NA
TOTAL	**1.85**	**1.50**

COOIT's Kharif output estimate: Sesame seed

State	2013-14	2012-13
Gujarat	25.00	6.90
Maharashtra	1.75	1.40
AndhraPradesh	6.00	5.00
Tamil Nadu	1.80	2.50
Karnataka	3.50	2.00
MP/Chhattisgarh	1.70	1.90
Rajasthan	5.20	4.60
Punjab/Haryana/UP	0.80	0.60
Odisha	1.00	0.90
Others	0.40	0.40
TOTAL	**47.15**	**26.2**

COOIT's Kharif output estimate: castor seed

State	2013-14	2012-13
Gujarat	9.30	8.06
Rajasthan	1.90	1.65
AndhraPradesh	0.65	1.50
Maharashtra/Others	0.20	0.22
Others	0.20	0.20
TOTAL	**12.05**	**11.43**

COOIT's Kharif output estimate: Niger seed

State	2013-14	2012-13
Odisha	0.20	0.20
MP/Chhattisgarh	0.20	0.20
Others	0.30	0.40
TOTAL	**0.70**	**0.80**

(Courtesy : www.ansmediagroup.com, Grain Asia, OCtober 2013).

"ENCOURAGING"

Bumper groundnut crop predicted in Kharif 2013

INDIAN Oilseeds and Produce Export Promotion Council (IOPEPC) has forecasted a bumper groundnut crop in Kharif 2013. IOPEPC, which comes under the Ministry of Commerce, announced that groundnut production during Kharif 2013 is estimated to be 49.16 lk tonnes in five major states of Gujarat, Rajasthan, Andhra Pradesh, Karnataka and Tamil Nadu which account for close to 90% of total groundnuts produced in India. This is higher by 21.03 lk tn as compared to Kharif 2012, when the crop was only 28.12 lk tn in these states, owing to monsoon failure. The final crop estimates will be released after crop cutting december 2013.

(Courtesy : Grain Asia, OCtober 2013).

"NEEDED"

Implementation of National Mission on Oilseeds and Oil Palm - Congratulations

SEA has always pleaded for higher allotment for oilseeds development programme. I am happy to mention that, the Cabinet Committee on Economic Affairs has approved the implementation of National Mission on Oilseeds and Oil Palm with an allocation of Rs. 3,507 crores during the 12th Five Year Plan to boost oilseeds output and bring additional area of 1.25 lakh hectares under oil palm. I take this opportunity to congratulate the Government for allocating substantial funds to boost the oilseeds output and expand the area under oil palm cultivation. This will go a long way in increasing production of vegetable oils in the country to bridge the gap between demand and supply. I may add, Rice Bran oil potential is about 15 lakh tonnes against which current production is 9 lakh tonnes. Similarly, there is large untapped potential for non-traditional vegetable oils from Tree Borne Oilseeds (TBOs). If proper measures are taken to explore the full potential of Rice Bran Oil and Tree Borne Oilseeds, the country can produce additional 5.0 lakh tonnes of vegetable oils from these two sources. I would like to appeal to the Government to also focus on these sources to increase the availability of vegetable oils to bridge the gap between demand and supply and check the import to some extent as well as our dependence on imported oils.

(Courtesy : SEA NEWS CIRCULAR, VO.XVI, ISSUE 7, Oct., 2013).

A "DESIRE" changes Nothing,
A "DECISION" changes something
BUT A "DETERMINATION" changes everthing.

"EXCITING TIMES"

Vegetable Oil Consumer to Benefit from Ample Oilseed SUpplies

LARGE supplies of sunflower oil and other seed oils will become available in coming weeks, given big crop and favourable margins in the northen hemisphere. This has already brought vegetable oil prices under pressure in recent weeks, under the lead of sunflower oil. It will be a challenge for the market to absorb the near record production and exports of sunflowe oil, considering that there will be competition from soy oil and other oils & fats in 2013-14 than two years ago when sunflower oil supplies reached their latest peak. According to the first estimates, world output of 17 oils and fats is expected to increase by 7.6 Mn T. The improvement of oilseed supplies, primarily those with high oil content, will make a significant difference next season. World production of 10 major seed oils is forecast to increase by 3.7 Mn T, following a decline by roughly 1.3 MnT expected in Oct/Sept 2012/13. /the carry-in stock of seed oils will be lower than a year ago but there is still potential for a consumption increase of approximately 2.8 MnT, after a 0.2 MnT decline in the current season. 17 Oil & Fats:Consumption Change (in MnT).

	October / September		
	13/14F	**12/13**	**11/12**
EU-27	+0.05	+0.17	-0.33
USA	+0.35	+0.19	-1.19
Argentina	+0.38	-0.96	+0.53
Brazil	+0.40	+0.11	+0.14
China,PR	+1.10	+1..5	+1.03
India	+0.78	+0.93	+0.74
Indonesia	+0.84	+0.88	+0.91
Malaysia	+0.04	+0.23	-0.11
Others	+2.08	+1.79	+2.53
Total	**+6.03**	**+4.67**	**+6.64**

At the moment, prices of the major ols & fats are more or less sharply lower than a year ago, except coconut oil. This is favouring an accelera-

tion of consumption growth, which has slowed down to 4.7 MnT in 2012/13. In 2013/14 we consider it likely that world consumption of all oils & fats increases 6 MnT to reach 193.6 MnT. (Source : OIL WORLD Weekly dated 4th Oct'li Internet : www.oilworld.de)

(Courtesy : SEA NEWS CIRCULAR, VO.XVI, ISSUE 7, Oct., 2013).

"TIME UP"

Record Import of Vegetable oils during Oil Year 2012-13

THE gap between demand and supply of vegetable oils is increasing year by year. Country's total requirement of edible oils is about 175 to 180 lakh tonnes against which the local production is stagnant at around 75-80 lakh tonnes only. Considering the growth in population by about 20.0 million per annum and 3 percent per capita increase in consumption, we need atleast 7-8 lakh tonnes additional edible oils, equivalent to 25.0 lakh tonnes of oilseeds production per year to meet the growing demand. This year although acreage under kharif oilseeds had substantially increased the heavy rain in end-September and early October extensively damaged the soybean crop and reduced to just 100 - 105 lakh tonnes against earlier expectations of 120-125 lakh tonnes. To bridge the gap between demand and supply, the import of vegetable oils is rising year on year basis. Import of vegetable oils for the oil year 2012-13 ending October 2013 is reported at 106.8 lakh tonnes compared to 101.9 lakh tonnes for the same period of last year i.e. up by 4.7% and our dependence has gone up to nearly 60% on imported vegetable oils.

This is a serious cause of concern and challenge for the Government, Scientists and the Industry -how to raise the production and productivity of oilseeds to meet the growing demand and check the rising import of vegetable oils as well as import dependence.

(Courtesy : SEA NEWS CIRCULAR, VO.XVI, ISSUE 8, Nov., 2013)

"HIP HIP HURRY - R.B. OIL"

Rice Bran Oil Consumption Significantly Reduces LDL Cholesterol As Compared To Extra Virgin Olive Oil and Groundnut Oil

Press Release at the Press Conference for Generic Promotion of Rice Bran Oilat New Delhi on 25th Oct.'13.

- **Physically Refined Rice Bran Oil (RBO) Consumption substantially reduces LDL and Total Cholesterol and triglyceride levels**
- **Percent decrease in cholesterol level was maximum and significant in RBO group as compared to Extra virgin olive oil and Groundnut oil**
- **Physically refined RBO is more effective for lipid profile management**
- **Besides having an ideally balanced fat composition, RBO contains unique nutrients "Oryzanol", which is well known for cholesterol lowering properties**
- **According to Global Burden of Diseases (GBD), people suffering from coronary heart disease(CHD) in India is expected to be 61 million by 2015.**

(Courtesy : SEA NEWS CIRCULAR, VO.XVI, ISSUE 8, Nov., 2013)

India Is World's Diabetes Capital With 61 Million Diabetics, May Jump To 101 Million By 2030, According To IDF

Press Release at the Press Conference for Generic Promotion of Rice Bran Oil at Raipur on 13th Nov.'13

Diabetes can be controlled by greater use of Rice Bran Oil, say Experts

- **Tomorrow the November 14th is celebrated as World Diabetes Day**
- **India has 61 million diabetics between 20-79 years**
- **By 2030 diabetics may jump to 101 million, according to International Diabetes Federation**
- **Need for creating awareness about prevention**
- **Experts recommend use of "Healthy Rice Bran Oil" in daily cooking as prevention**
- **Rice Bran oil contains Lipoic Acid that stabilizes blood sugar level**
- **Rice Bran Oil (RBO) is affordable and help control lifestyle generated diseases**
- **Besides, latest clinical study points out that RBO consumption substantially reduce LDL and Total Cholesterol and triglyceride levels**

State-wise estimates of area and production of Soyabean during 2010-11 to 2012-13

State	Area ('000 Hectares)			Production ('000 Tonnes)		
	2010-11	2011-12	2012-13*	2010-11	2011-12	2012-13*
Andhra Pradesh	128.0	130.0	159.0	218.0	210.0	289.0
Chhattisgarh	106.3	100.4	106.3	124.4	75.6	128.1
Gujarat	84.0	42.0	47.0	68.0	33.0	47.0
Himachal Pradesh	0.6	0.6	0.6	0.8	1.0	0.9
Jharkhand	0.1	0.2	0.7	0.0	0.1	0.8
Karnataka	168.0	191.0	172.0	147.0	172.0	180.0
Madhya Pradesh	5559.9	5669.1	6031.7	6669.8	6280.6	7800.1
Maharashtra	2729.0	3010.0	3218.0	4316.0	3969.0	4669.0
Rajasthan	765.5	897.1	1039.8	1118.1	1385.2	1468.7
Uttar Pradesh	11.0	18.0	14.0	14.0	22.0	19.0
Uttarakhand	9.7	12.0	11.0	14.4	18.0	21.0
West Bengal	0.5	0.5	0.6	0.3	0.6	0.5
Others	38.1	38.1	41.6	45.6	46.5	55.1
All India	9601.0	10109.1	10842.6	12736.4	12213.5	14679.4

(Courtesy : SEA NEWS CIRCULAR, VO.XVI, ISSUE 8, Nov., 2013)

"GOOD NEWS"

KHARIF PULSES' production touches SEVEN LAKH tonnes

INDIA'S production of pulses in the kharif season went up in 2013-14 compared to what it was in 2012-13. Output of pulses for the year was recorded at seven lakh tonnes which was calculated at 5.9 lakh tonnes during 2012-13. Pulses had witnessed a rise in their area under cultivation from 8.8 million hectares to 10.2 million hectares, which finally led growers to enjoy the produce during the year. Besides good rains in different parts of the country combined with government which set a good Minimum Support Price (MSP) for pulses, led producers enjoy appropriate returns in the end, said report. With the pulses' crops of the year witnessing a jump, it opened their prospects for exports. Among them which had seen a good harvest during the year were Tur, Moongetc. Pulses' harvest of India for the Kharif 2013 season touched 7 million tonnes as compared to 5.9 million tonnes in 2012. The southwest monsoon had performed well with eight percent excess rainfall as on Sept 4th 2013. Out of 36 meteorological subdivisions, as many as 30 had received excess to normal rainfall. In particular, agriculturally important states of Uttar Pradesh (UP), Madhya Pradesh (MP), Punjab (PN), Haryana, Maharashtra, Gujarat, Andhra Pradesh and Karnataka, enjoyed more than normal rainfall.

(Courtesy : BUSINESS STAR, November, 2013)

"IDEA"

New facets of Food Packaging Industry

MODIFIED Atmosphere Packaging (MAP) and Controlled Atmosphere Packaging (CAP) are the revolutions which have come in the food packaging industry at present. MAP for that matter means modifying the atmosphere, space inside a food bag, packet etc. to increase the shelf life of the product packed inside them. Whereas, CAP denotes controlling the atmosphere inside the packaging bodies in a way that it helps food substances to say fresh for a long duration of time, says report. Under this segment, packaged food companies believe lessening the amount of oxygen present inside food packets, bags etc and replacing it with a lifeless gas nitrogen. Adding along with carbon dioxide to discourage growth of bacteria, the report says. On one hand if demands for MAP and CAP have reached a point of saturation in developed countries on the other hand they are on a rise in developing ones. These two are encouraged for sales of MAP and CAP products said to touch $10.8 USD in 2013. However, brands dealing with packed food products for customers' preference towards these two new innovative measures employed during packing eatables, are resorting to them on a considerable scale.

As what a report said customers across the globe asked for their food products in modified and controlled atmosphere packaging. Modified- and controlled-atmosphere packaging (MAP/CAP) involved altering the composition of the space inside a package to boost the shelf life. This typically included lowering the amount of oxygen and replacing with nitrogen, an inert gas and carbon dioxide which could inhibit bacterial growth. An interest in increased shelf life of packaged foods, pushed the increase for MAP and CAP products. Developed countries saw the slowest growth, as they had approached saturation. Emerging economies but experienced a growing demand in nearly all areas of the packaged goods market, saw the strongest rate of increased demand. A significant number of food brand owners, however, harnessed MAP and CAP in their packaging.

(Courtesy : BUSINESS STAR, November, 2013)

"FOOD AHOY"

Food processing Industry in India

INDIAN Food processing industry has been growing and changing at a phenomenal pace over the past few years, driven by changing trends in markets, consumer segments and regulations. No doubt, it is large sector that covers activities such as agriculture, horticulture, plantation, animal husbandry and widely used in sectors like food & bev-

erages, confectionery, bakery, ready to eat snacks, dairy and many other. The industry structure and ongoing transformation offers opportunities for organized players to invest and grow. As the Indian market matures and the consumers are becoming more quality and brand conscious, the organized sector is poised to surge and gain prominence. Moreover, India food brand and Fast Moving Consumer Goods (FMCGs) are now increasingly finding prime shelf space in the retail chains of US and Europe.

With most sought after destination, India is becoming hub of food investment. As the organized food retail market matures in India, there would be an increased need for players to differentiate through innovation. Employing cutting edge technology in retail could prove to be the source of competitive advantage for retailers. Government of India is also initiating in many ways to promote this sunrise food processing industry. The subsidies for high-end capital equipment can go up to 33% in the remote areas encouraging entrepreneurs to establish food processing companies across the country.

More and more people are going for processed and packaged food as they find it easy to shop and it saves them a lot of time. If processed food bought from a good place and of a reputed brand it can last for years and can be used in off season too. India with its large population, particularly the 350 millions strong middle class, is a favourite destination for processed and packaging industry. Any company which wants to grow will be keen to invest in India. Companies such as Coca Cola and Pepsi Cola have invested billions in India and are keen to invest more as they don't want to lose a lucrative market like India.

(Courtesy : BUSINESS STAR, November, 2013)

"RUB IT IN"

Rubber grown prganically overtakes traditional method in Kerala

ORGANIC cultivation of rubber was catching up among growers in Kerala. Rubber cultivated without the application of pesticides and other chemicals, as was the case with its traditional method of growing it, was successful in group rather than individual cultivators practicing it, said report. Grown organically, the rubber promised higher yield and lower input costs which otherwise went into cultivating the same through traditional method. In the case of organic rubber, cultivators experienced a growth in crop to the tune of 25 percent more than it was achieved in the state through the traditional way some time ago, said the report. Rubber grown organically in the southern state, gained traction as an alternative to traditional methods, which on the contrary used chemical fertilizers, said experts in this field. However, the spread of this method was much unorganized as individual^, rather than farmer groups, which implemented it driven by the long-term merits of the switchover.

(Courtesy : BUSINESS STAR, November, 2013)

"REALLY"

COOKING OIL to find itself included in the Food Security Scheme

THE scheme which promised a fixed supply of food grains, pulses even when one would not have to work for it, which observers said was government's tactic of luring votes towards it for the state and then the Lok Sabha elections, a report said might include oil in it. Addressing a conference that was attended by top functionaries of the UNWFP and food ., minister K V Thomas, department secretary Sudhir jiS _ Kumar said that items like food grains, pulses and cooking oil would be made available through the PDS. By enacting the law to provide food grain at a , very subsidized rate, an earlier practiced welfare measure was been made a right of people, the minister said. Seeking assistance of the UNWFP and other non-government bodies, Thomas said that there was a need to address issues such as food and vegetable items which were going waste and also huge wastage of prepared food items at social functions.

(Courtesy : BUSINESS STAR, November, 2013)

Technology

"S.O.S. ENERGY"

Energy conservation - future of tommorrow

Haresh Shah

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The Indian power sector is adversely affected by transmission and distribution losses and the quality of power supply, among others. This article reviews the ills of the power sector and offers possible solutions that could lead to more efficient use of energy and its conservation

THE Indian power sector scenario remains gloomy, surrounded by the dark clouds. Although power reforms started about a decade back, the achievements are only dismal. Financial health of most of the state electricity boards (SEBs) remains critical, mainly due to the uncontrolled use of low-efficiency, power-wasting equipment and appliances, back-breaking heavy subsidies for agricultural and some other sectors, and huge power thefts and pilferage resulting in heavy loss of revenue for the SEBs and other utilities.

The major problems faced by the power sector are due to the increasing gap in the demand and supply of power, high transmission and distribution (T&D) losses as well as power theft/pilferage and wastage of expensive and limited energy due to the use of low-efficiency equipment in various sectors. The prescription and implementation of energy conservation building codes has to be done in consultation and cooperation by central and state governments which will have the major powers.

Energy conservation

The Energy Conservation Bill 2001, proposed primarily to control the huge wastage of power, was passed by Parliament in August-2001 and was expected to clear the way to check energy wastage. The Bill, prepared by a group of expert committees following lengthy discussions and debates, paved the way for the setting up of the Bureau of Energy Efficiency (BEE) to be established and managed through a governing council. All the assets, liabilities and employees of the existing energy management centre were to be transferred to this bureau. The central government, through its Ministry of Power, the Bureau of Energy Efficiency and the state governments, would have a major role in achieving the desired objectives. The BEE has estimated a potential of more than 25 percent savings through energy conservation.

The Energy Conservation Bill 2001 was to be implemented through well-qualified and experienced energy managers with designated consumers and energy auditors to check and certify that every consumer complies with the provisions of this bill, thereby conserving energy, which, of course, would benefit the consumers themselves through reduction of their own energy bills and increasing their profitability through such savings.

The Bureau of Energy Efficiency plays a key role in the creation of professionally-qualified energy managers and auditors with expertise in energy management, project management, financing and implementation of energy efficiency projects as well as policy analysis. The BEE is expected to see that the clauses of the Bill are implemented in letter and spirit by firms to ensure energy conservation, thereby enhancing their

profitability; its mandate is not to control and monitor the energy consumption of industry.

Under the BEE's PAT (perform, achieve and trade) scheme for eight industrial sectors, it is mandatory to improve energy efficiency by adopting all available measures including replacement of old equipments with new and energy efficient equipment.

These sectors are:

- Aluminium
- Cement
- Chlor-alkali
- Fertilisers
- Iron and steel
- Pulp and paper
- Textile
- Thermal power plants

With the move towards deregulation within the power utility industry, customers are demanding superior power quality and reliability of supply. Many utilities have responded to the needs of their customers by establishing power quality divisions within their marketing departments. Some of the main objectives of energy management programmers are:

- Cultivating good communications on energy matters
- Improving energy efficiency and reducing energy use and thereby reducing cost of energy use
- Developing and maintaining effective monitoring, preparing reports and implementing steps for wise energy usage after analysis of the reports
- Finding new and better ways to increase returns from energy investment through research and development
- Developing interest in and dedication to the energy management programme among all employees
- Reducing the impact of curtailments, brownouts or any interruption in energy supplies.

Energy audit and accounting

Energy accounting gives the overall picture of energy availability and its use. Energy audit enables the analysis of data in a meaningful manner to evolve measures to introduce checks and balances in th/system to reduce leakages and losses and also to improve technical performances. Energy audit is carried out with the following objectives.

- Review of technical efficiency of system elements in T£D system
- Review of performance of equipment, meters, control panels, and distribution transformers and so on
- Analysis of the techniques for measuring j energy received, energy billed and revenue collection
- Review and upgradation of procedures for j energy accounting.
- Establishment of norms for checking the consumption of various categories of consumers and overall energy balance in the circle
- To clearly audit the segregation of technical and non-technical losses.

Energy loss depends on the pattern and nature of demand, load density and the capability and configuration of the system and equipment used; it varies for various system elements. However, a system where the total percentage loss lies beyond the stipulated levels should become a matter of serious concern. The target for reduction of techni-cal/non-technical loss should accordingly be fixed, measures identified and action taken to accomplish the target within the given time period.

All thedetailspertainingtoenergy accounting may be fed to the computerised billing system and the MIS report of each feeder may be generated through software packages. The MIS report in the desired format could be generated by the billing computer. The system may be made available at various levels, i.e. substation/subdivision/division/ circle.

It can thus be concluded that energy accounting and audit is essential for reducing T&D losses within optimum permissible limits, for which targets are to be fixed and concentrated efforts are to be made to plug the leakages in the T&D system so that revenue collection of state electricity boards as well as utilities increases. This, in turn, will

give a facelift to the organisations and improve their financial health.

However, it is obvious that to achieve the desired goals is an enormous task requiring complete cooperation of all stakeholders -the manufacturers and users of energy, as well as the central and the state governments.

Harmonics - a power quality problem

Power quality is defined by any problem manifested in voltage, current or frequency deviations that results in failure or malfunctioning of customer sites or equipment. For quality performance of various power system devices, it is necessary to first fully comprehend the problems due to harmonics and then to take further remedial measures for improvement and better performance.

Harmonics, voltage flicker, voltage regulation, voltage sag, voltage swell and transients usually characterise the quality of electric power. Harmonics is one of the major factors due to which none of these conditions are fulfilled in practice. The presence of harmon-icsdistorts the waveform shapeofvoltageand current, increases the current level and changes power factor of supply, which, in turn, creates several other disturbances.

Sources or causes of harmonics

Rapid use of energy conservation devices in both domestic sectors and industrial sectors such as electronics chokes for tube-lights, electronics energy controllers for motors and electronic fan regulators, etc inject harmonics substantially into a power system. Extended use of shunt capacitors to improve power factor and stability has significant influence on harmonic levels. Related to the supply system, converters and traction are major causes of generation of harmonics.

Power quality is defined by any problem manifested in voltage, current or frequency deviations that results in failure or malfunctioning of customer sites or equipment

Besides, increasing use of solid state power converters for industrial furnaces for mini-steel and non-ferrous metal plants, use of thryistors for locomotives, extensive use of single-phase electronics loads in domestic sectors are causes of harmonic generation. A growing power quality concern is harmonics distortion that is caused by the nonlinearity of customer loads.

Impacts of harmonics on various equipment

Transformers: The primary effect of power system harmonics on transformers is the additional heat generated by the losses caused by the harmonics content of the load current. Magnetic loss increases due to higher frequency level of harmonic current. Copper loss increases in winding due to third harmonic current present with load current. Also copper loss increases in the delta connected transformer windings due to extra circulating zero sequence currents.

Rotating machines: An increase in motor, generator or turbine operating temperature will cause reduction of the rotating machine's operating life. Extra audible noise is produced during the operation due to the difference between the time harmonic frequencies. Also harmonics causes variation of mechanical resonance speed of adjustable speed drives, which may do damage due to amplification of the pulsating torques.

Capacitor: The effect of the harmonic component is to cause extra power loss due to decrease of impedance by increasing frequency, which, in turn, increases the temperature level and shortens the life by early equipment failure. It also increases the dielectric stress inside the capacitors.

Circuit breakers: Harmonic distortion of current can affect the interruption capability of circuit breakers and thermal magnetic breakers. The extra heat due to losses for frequencies above the fundamental raises the temperature of the thermal device, which, in turn, may reduce the trip point of the circuit breaker.

Measuring meters: Wattmeter, watt-hour meter, electronic energy meter and so on display errors from the frequency characteristic of the voltage and current waves affected by harmonics. Linearity of the meters can be degraded when the power

factor is low or waveforms have large crest factor caused by harmonics. Absolute average responding meters calibrated in RMS and peak responding meters give erroneous results under the presence of harmonic distortion.

AC/DC drives: Voltage surges due to harmonics can damage the power diodes connected at the input of an AC variable frequency drive. Under sustained overvoltage and under-voltage conditions the equipment may shut down. Input voltage waveform containing harmonics may have multiple y.ero crossings, which may change the firing angle of the thyristors.

Conductors: There are two mechanisms by which harmonic currents can cause heating in conductors that is greater than the RMS value of the current. The first mechanism is due to current redistribution within the conductor and includes the skin effect and the proximity effect. The second mechanism causes abnormally high current that is due to excessive third harmonic current in the neutral conductor.

Cables: Harmonics cause extra heat ing which lead to degradation of dielectric production of cable jacket, both in its dielectric role and its mechanical protection role, reduction ot lifespan due to oxidation and a possible overall reduction of maximum operatingcapacity of the cable.

Computer networks, control room, SCADA: The presence of harmonics effects can cause nuisance tripping of sensitive loads. Some computer-controlled loads are sensitive to voltage distortion. Data acquisition through SCADA system may get effected due to power disturbance such as voltage sag, swell, transient events, and presence of harmonics.

Protective relays:
Waveform distortion does atfect the performance of protective relays and may cause relays to operate improperly, or not to operate when required as in ground relays due to zero sequence third harmonics and dual input relays by the phase relation-shipbetween the respective input harmonics. Changes of operating points, operating torque and time of static relays may happen due to distortion of waveform, which causes improper high-speed operation of difference relays.

Controls and remedies for harmonics

Limit harmonic current injection from nonlinear loads, transformer connections can be employed to reduce harmonics in three-phase system using parallel delta-delta and wye delta transformers to yield net 12-pulse operation or delta connected transformers to block triple harmonics.

The harmonic distortion in adjustable speed drives can be controlled within IEEE 519-1992 limits by drive design modification, switching from 6 pulses to higher pulses converters and connection of series reactor.

System frequency response could be modified to avoid adverse interaction with harmonic currents. This can be done by feeder sectionalising, adding or removing capacitor banks, adding shunt filters or adding reactors to detune the system away from harmful resonances.

Applying harmonics like filter harmonic current at the loads or on the system with shunt filters may block the harmonic currents produced by the loads. There are a number of devices for this. Their selection is largely dependent on the nature of the problems encountered. The solution can be as simple as an inline reactor (i.e. a choke) as in the PWM-based adjustable speed drive applications or complex as a designed active filter.

Monitoring problem manifested in V, I, H/. data acquisition is the primary step for both the situations. The requirement is the data on the current and voltage distortion both as it exists.

So tor quality performance of various power system devices it is necessary to understand the problems and requires further remedial measures for improvement and better performance. Data acquisition is the primary step for both the situations.

Planning and designing for harmonic suppression

With the move towards deregulation within the power utility industry, customers are demanding superior power quality and reliability of supply. Many utilities have responded to the needs of their customers by establishing power quality divisions within their marketing departments.

Analysing the spectra and knowing the size of systems that are planned, different solutions can be deduced and incorporated in the design that will lessen the disturbances or possibly eliminate them entirely.

Solutions to power quality problems

In providingsolutions to power quality problems, cosjs play a major role. Hence it is always necessary/to find cost-effective solutions to resolve/ power quality issues to minimise equipment downtime and loss of production by using handy and easy-to-use instruments for monitoring, measuring and recording all necessary values in three phases like TRU-RMS value, voltage, current, frequency, apparent and reactive power, energy, power factor, phase angle and above all harmonic analysis with transients events. The objectives of using such instruments are:

- to provide steady state harmonic limits that are reasonable to both electric utilities and the users.
- the power provider should limit harmonic voltage since they have control over the system impedance
- the users should limit harmonic currents, since they have control overloads
- both parties share the responsibilities for holding harmonic levels in check.

Among several other companies, Meco Instruments provides solutions to power quality problems. Its Power and harmonics analy/.er - Model 5850 is a state-of-the-art versatile instrument using micro-controller technology and having various functions that would be ideal for any energy auditor, engineer, inspector carrying out vigilance checks, surveys, energy audits and periodic visits for checking at the industrial units and consumers' end. The measurements can be done without disconnecting the live loads. It is able to do almost all the analysis for 1/3 phase power system and is capable of analysing IT standby power consumption to the maximum demand of a factory. It displays harmonics up to the 99th order and THD with waveform. The analyser has inbuilt memory of 512K for 17000 records and optical isolated RS-232 ~ USB interface with user-friendly software for easy downloading of recorded data.

The author has used examples or case studies taken from published material for the benefit of increasing awareness and knowledge of the readers. The author can be contacted at liarcn.shah@inecoinst.com and harenvshali@yalioo.coin

(Courtesy : INDIAN ENGINEERING EXPORTS, DECEMBER 2013).

Modern Cold storage units required to tackle post harvest losses

IN INDIA though production of fruits and vegetables is growing at a rate of five to six per cent annually, but their losses are to the tune of 30 percent. Majority of fruits and vegetables produced in the country goes waste at post harvest stage, due to inappropriate provisions of storing them and if at all cold storages are there for the purpose, are the ones which are outdated, says a industry body report. In addition to this, storing capacity of existing facilities, are for 300 lakh tonnes of fruits and vegetables, while, a further increase for 370 lakh tonnes of them are required. Resultant, the total wastage of fruits and vegetables which happens due to this is calculated at two lakh crore on a yearly basis, says the report. West Bengal tops the list of states where spoilage of fruits and vegetables is reported the most followed by Gujarat, Andhra Pradesh (AP) and others. However, another glitch in all these is that, most of the cold storage units are located near wholesale markets but a vast vacuum for them are felt in places nearby retail markets and in rural areas especially.

The southern state of Andhra Pradesh incurs post harvest fruit and vegetable loss of around Rs 5,600 crore annually, given the significant dearth of on farm processing facilities, says the apex industry body Associated Chambers of Commerce and Industry of India (Assocham) report. With about 9.6 percent.

share, the state is India's second major horticulture producing state with over 24,700 tonnes of fruits and vegetables produced across it annually, says a study on the horticulture sector in India conducted by Assocham.

While, West Bengal was India's leading horticulture producing state with over 27,000 tonnes of fruits and vegetables produced across it annually, accounting for over 10 per cent share across India, the states of AP, Uttar Pradesh (UP), Tamil Nadu (TN) and Maharashtra were the other states that topped in horticulture production, thereby accounting for a share between eight and nine percent. Despite this, West Bengal's post harvest losses of fruits and vegetables were worth over Rs 13,600 crore annually, highlighted the Assocham study. Gujarat ranked second with post harvest losses of fruits and vegetables fixed at about Rs 11,400 crore, followed by Bihar with over Rs 10,700 crore, UP Rs 10,300 crore and Maharashtra with Rs 10,100 crore. The magnitude of post harvest loss in fruits and vegetables could be minimised by proper cultural operations, harvesting, transportation, storage, pre and post harvest treatments and other such significant measures. Total storage capacity in India was for more than 250 lakh tonnes, with an additional requirement of cold storage for about 350 and some lakh^ tonnes of fruits and vegetables.

(Courtesy : BUSINESS STAR, January, 2014)

"GREAT"

150 CRORE iso crore cattle-feed plant by AMUL

IN order to secure animal feed supplies for the milk producers, Anand-based Kaira District Cooperative Milk Producers' Union Ltd or Amul Dairy is setting up a cattle feed factory with capacity to manufacture 1,000 tonnes a day. Amul Dairy has invested Rs 100-150 crore towards setting up the new plant near Kapadvanj in Kaira district in Gujarat. The plant is likely to be commissioned in a year's time. With the new plant, Amul is set to become Asia's largest cattle feed manufacturer with a total capacity of over 2,000 tpd. The dairy has an existing cattle feed making plant with capacity of 1,100 tpd near Anand at Kanajri. Amul Dairy makes range of dairy products, including cheese, paneer and chocolates, besides others at its plants at different locations in and outside Gujarat. The dairy, which procures 19 lakh litres of milk daily, is set to achieve a record Rs 3,100 crore-3,200 crore turnover during the current fiscal. Currently, the dairy manufactures Amuldan (Bypass Protein Feed), Calf Starter, Milk Replaced, Mineral Mixer, Medicated-"Feed,, Mineral Molasses Block.

(Courtesy : BUSINESS STAR, January, 2014)

Electromagnetic pollution

There is little general awareness or concern of the serious problem of electromagnetic pollution as it exists today. Till the 1950s and 60s, the world was in a much more balanced state with both hemispheres in harmony even after the atomic and nuclear blasts. However, today excessive electromagnetic pollution is fuelled by the rampant destruction of forests and the climate has changed to such a degree that even the nature of electric storms have altered.

The electromagnetic spectrum consists of electrical energy travelling in the form of waves of different wavelengths and is divided into two parts: the ionising portion which is radioactive and the non-ionising portion which consists of the visible spectrum and the longer wavelengths. At the lowest end are the extremely low-freguency waves which include power lines. Energy emitted throughout this spectrum should be regulated by every civilised government.TheWorld Health Organisation has published a report which classified extremely low-frequency fields as an environmental health problem in line with mercury and cadmium poisoning which makes it a toxic problem. But there are at present no regulations on low-level radiation produced by power lines and electrical currents.

Since all living organisms on earth are exposed to electromagnetic radiation, it is urgent to establish standards of acceptable exposure levels for various frequencies of electromagnetic radiation. Cancer, birth defects, decreased immunity to disease, even new sicknesses have been linked to extended exposure to electromagnetic fields of specific frequencies and intensities. The human body is a living antenna and can absorb strong fields like power lines or cellular disk antennas, video display terminals and then augment the intensity of the environment.

Mobile radiation is dangerous for human body

The speculative fears of mobile phones being a danger to health in the long run seem to be coming true. A latest government study talks about the harmful effects of not just using mobile phones but also the radiation from mobile phone towers.

According to a news report, radiation from mobile phones and towers poses serious health risks, including loss of memory, lack of concentration, disturbance in the digestive system and sleep disturbances, according to an inter-ministerial committee formed by the ministry of communications and information technology to study the hazards posed by mobile phones.

The report stated that the damages may not be lethal for humans, but they are worse for birds and insects. The committee attributed the disappearance of butterflies, bees, insects and sparrows to radiation effects. The government report recommends that mobile towers should not be installed near high-density residential areas, schools, playgrounds and hospitals. 'The localised SAR value as per the Indian guidelines standard is 2 watt per kg, averaged over a six-minute period and using a 10 gram average mass. With higher SAR values of mobile handsets the public could potentially receive much higher radiofrequency exposure. We have recommended that SAR levels to be lowered down to 1.6 watt/kg, as prescribed by the Federal Communication Commission of US,' said a member of the committe. The eight-member committee, which included representatives from the health ministry, department of biotechnology and member secretary, DoT, has recommended that mobile phones not adhering to standard levels of specific absorption rate (SAR) - a measure of the amount of radiofrequency energy absorbed by the body while using a phone - should be barred.

The member scientist said that compared to Europeans, Indian cellphone users are more at risk for adverse affect of radiation due the country's hot tropical climate, low body mass index, and low fat content. 'We have recommended amendment in the Indian Telegraph Act 1885 and rules so that only mobile handsets satisfying radiation standards should be permitted in the country.'
Another news report quoted a researcher studying the biological effects of mobile phone towers, as saying, 'All these women [afflicted with cancer] don't have any family history of cancer. Plus, all of them are within a certain radius of those mobile towers. All this is not a coincidence.'

The report suggests that calls on mobile should be kept short and wherever possible text messages should be used instead. This advice should be especially relevant keeping in mind children, adolescents and pregnant women. The advice should be printed in the user manual by handset manufacturers. Whenever possible, use cellphone when the signal quality is good. People having active medical implants should keep their cellphone at least 30 cm away from the implant,' the report stated.

Many a times we find ourselves complaining of bad network in certain areas. Mobile companies raise towers at every nook and corner to beat each other at network coverage. Are we compromising our health for better mobile connections? So how do we minimise the damage in view of such grave consequences? The objective of controlling electromagnetic pollution is very good but the road ahead is long, rough and tardy.

(Courtesy : INDIAN ENGINEERING EXPORTS, DECEMBER 2013).