

OIL TECHNOLOGISTS' ASSOCIATION OF INDIA

October - December 2010
January - March 2011

EASTERN REGION



FOR LIMITED CIRCULATION



65th Annual Convention & International Seminar Glimpses – New Delhi, Dec. 2010



Mr. Subodh Kant Sahay, Minister, Food Processing inaugurating the exhibition



Executive committee members with Mr. A. S. Khanna, recipient of Lifetime Award, OTAI.



Seated R to L Ms. Archana Sarma, D. G. Doordarshan, Mr. S. K. Roy, Mr. Alinda Das in a Technical Session



Conferring Lifetime award to Mr. P. P. Gupta & Dr. A. S. Khanna at the residence of Mr. P. P. Gupta, Dr. Khanra receives the award from S. K. Roy, President OTAI (E.R.) Calcutta



Receiving Memento from Mr. N. B. Godrej at the convention



Prof. R. P. Singh, President OTAI, claps while Mr. S. K. Roy presents the Memento to Dr. Munda



Mr. P. P. Gupta receives the Lifetime Award from President E.R.

EXECUTIVE COMMITTEE (2009-2011)
OIL TECHNOLOGISTS' ASSOCIATION OF INDIA (Eastern Zone)
3 Parasar Road, 1st Floor, Kolkata - 700 029

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Prof. R. P. Singh has taken over as President OTAI.

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Editor

S. K. Roy

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From the Editor's Desk

Increasing demand of Nutraceuticals globally has given an impetus and also a task to bridge the gap between the demand and supply of Indian Spices, a great source of Nutraceuticals. Non-traditional use of spices including nutraceuticals now accounts for nearly 15% of Spice production in the country estimated at 50 Lakh tonne a year. The new line of applications are growing at a rate of 10 to 12% according to Spices board officials.

"Our annual requirement of 40,000 tonne to 50,000 tonne of spices increasing at a rate of 20-22%. And since supply is dwindling in India, we are looking at other countries for import" says Managing Director of SAMI LABS based in Bangalore. The Pharma Industry is discovering the use of turmeric in Cancer medicine. "Earlier they used just 500 mg to 1 gm of of turmeric extract in such drugs. But now, researchers are suggesting up to even 12 gram to treat various types of Cancer. Sami Labs, Bangalore has reported to have developed a new product called white turmeric which finds application as skin lightener.

Apart from turmeric, which is the most sought after spice in the nutraceutical market, Black peeper, ginger, and cinnamon are the other spices that are in demand. "Recently the new drug developed from Capsicin extract for weight loss has been rage in the U.S." Geemon Korah, Chairman, Chairman of All India Spices Exporters Forum and C.E.O of Kancor Ingredients, said. For example, as spice like Fenugreek is understood to have anti-diabetic properties. Research is going on to develop products from the spices and from vegetable oils keeping in view the future demand of Nutraceuticals would be huge. The demand for nutraceutical products has gone up as more and more people are turning to natural products for treating lifestyle diseases. The nutraceutical sector is growing at 12-14% in the U.S., 8-10% in Europe, 14% in China and almost 9% in Japan, even though it is still in infancy in India.

According to the Spices Board, the country has imported 18000 tonne of pepper last year and around 4000 to 5000 tonne of turmeric and 4500 tonne of dry ginger. It is discovery of Anti-oxidant properties and presence of Nutraceuticals in spices and Veg oils that paved the way for more consumption by the Nutraceutical sector. The major consumption of Spices is the Ayurveda Industry. The increasing acceptance of Ayurvedic remedies the world over supported by the Govt. has led to a higher consumption of spices by the Industry. The time has come when the Scientific Community and Govt. should join hands to provide the information related to curative properties of these Nutraceuticals and antioxidants ,which are readily available in India,for the treatment of many diseases. Jadavpur University in Calcutta has played a very MAJOR ROLE in this endeavour. Nature's gift to India thus could be gainfully utilised.

SUBHO NABABARSHA TO ALL OF YOU !!

S. K. Roy
Editor

Ack :
E. T. March-2011

ABOUT OURSELVES

1. Labonya Prova Bose Trust, Kolkata and A.F.S.T. (India), Kolkata Chapter jointly with Dept. of Food Technology & Biochemical Engineering, Jadavpur University organised Prof. A. N. Bose. Memorial Function, 2010 in the New Seminar Hall of the Dept. of Food Technology and Biochemical Engineering, Jadavpur University on October 11-12, 2010.

Prof. Sunit Mukherjee was invited as the Chairman, Dr. S. K. Mukherjee, as Theme Speaker and Mr. S. K. Roy as Invited Speaker.

Professor A. N. Bose Memorial Lecture was delivered by Dr. Suwendu Bhattacharya, Dy. Director, C.F.T.R.I., Mysore.

The whole programme was conducted and co-ordinated by Prof. Utpal Roychoudhuri, Prof. (Ms.) Runu Chakraborty and Dr. (Ms.) Uma Ghosh.

2. 65th OTAI Annual Convention, International Seminar and Expo, was held in the Inter Continental, EROS Nehru Place, New Delhi from 3-5 December, 2010.

The seminar was attended by Mr. S.K. Roy, Dr. Santinath Ghosh, Dr. Mohua Ghosh, Dr. Ranjana Das, Mr. A. K. Bhardwaj from the Eastern Zone.

Two Research papers were presented by (1) Dr. Santinath Ghosh (2) Dr. Ranjana Das in the International Seminar.

Lifetime Achievement Award was conferred on Mr. P. P. Gupta and Dr. A. S. Khanna of Eastern Zone by OTAI in the International Conference in New Delhi in December, 2010.

3. The award was handed over to both of them by the President (E.Z.) Mr. S.K. Roy, Calcutta in a small ceremony at the residence of Mr. P. P. Gupta in the presence of executive committee members and family members of the recipients in February 2011. Both of them and family members were visibly happy on their recognition.

4. Deptt. of Food Technology & Biochemical Engineering, Jadavpur University organised a seminar on, "Frontiers of Biochemical Engineering and Biotechnology in value addition... with nutraceuticals" from March 15th to 17th, 2011.

Professor Sunit Mukherjee was invited as Chief Guest Mr. S. K. Roy, was invited as Guest of Honour cum Speaker, Prof. A. K. Guha & Dr. J. Chakraborty and Prof. D. C. Sen were also invited as speakers in the conference.

Prof. Utpal Roychowdhury was the convenor and Dr. Paramita Bhattacharya was responsible for the Floor co-ordination Dr. Uma Ghosh, Head FTBE, proposed vote of thanks.

5. 8th Dr. K. T. Achaya Memorial Award has been conferred on Professor D. K. Bhattacharyya, Adjunct Professor, Bengal Engineering & Science University, at a grand National Seminar held in I.I.C.T. Hyderabad on the 5th March 2011. Prof. Bhattacharyya delivered the memorial lecture.

IMPOSITION OF BELLIER TURBIDITY TEST FOR MUSTARD/RAPESEED OIL

Dr. I. A. Siddiqui, Former Chief Director
Ministry of Food & Consumer Affairs (Govt. of India)

During 1950's, the prices of Groundnut oil were very low as compared to mustard oil, which attracted unscrupulous traders resorting to adulteration of mustard oil with G.N. Oil. Consequently, the central committee for food standard (CCFS) added Bellier test in the specifications of mustard / rapeseed oil, so that adulteration with G. N. Oil is detected. It was fixed at maximum 26.5°C, however, subsequently raised to 27.5°C. The prescription of the test created problem even for genuine mustard oil producers of popular brands fearing prosecution under Food Adulteration Act 1954.

A seminar held in Hyderabad in 1960 dealt with "Food Adulteration". This provided an opportunity to Oil Millers Association of Bengal to raise the issue pertaining to the discrepancy in B.T.T. for the presence of G. N. Oil in Mustard Oil, resulting some prosecutions. Their plea was that if other values of mustard oil complied with the given standards, there should not be any prosecution on the failure in Bellier Test.

A literature survey of popular books on oil & fats indicated that except BOLTONS OILS, Fats and Fatty Foods P-56 stated that the test is used as a qualitative method for determining the presence of G.N. Oil in admixture of other vegetable oils. Codex specifications are void of Bellier test so is the case of popular book of Baily. It is the general opinion of authorities on the subject of oils and fat that qualitative test has no sanctity without its being confirmed quantitatively.

In view of the Hue & Cry by the oil millers, packing mustard oil, as also expert opinion about the unreliability of the BTT, the CCFS after long deliberations circulated a procedure of Ever's Test in addition to BTT for mustard/rapeseed oil to Public Analyst for their guidance. However, the CCFS suggestion did not materially change the situation, as Public Analyst concluded their findings on BTT only.

CCFS did not give any direction on the plea of Oil Millers through Bengal Oil Mills Association entrusted the BTT problem to two eminent Professors on the subject of oils and Fat viz. Prof. M.M. Chakraborty of Kolkata University and Professor J. G. Kane of University of Bombay. They were supplied same lots of mustard seeds for extraction of oil in their Laboratory for testing.

The analytical test carried out by the two Internationally reputed scientists gave strangely dissimilar results. While the Bellier point obtained by Prof. Chakraborty varied between 23°C and 25.5°C, however, that obtained by Prof. Kane was much higher and ranged between 26.9°C to 29.3°C as against the prescribed limit of 23°C to 26.5°C. The maximum limit was subsequently raised to 27.5°C. The results confirm the views that BTT differ from Lab to Lab and chemist to chemist as stated by Dr. Kane that there is personal factor in seeing the turbidity temperature and therefore very difficult to obtain reproducible results. Dr. Kane also stated that large variation which he and Dr. Chakraborty noticed in their common work not only surprised him but gave him a shock. Therefore, it is extremely difficult to rely on Bellier Values and equally unjust to prosecute.

Both the prominent scientists stated that there are a number of authorities who do not accept the Bellier point as the surest method of detection of groundnut oil in mustard oil without the results of other test (presumably they may have opined for quantitative test).

Quantitative test is essential because BTT depends on the presence of arachidic acid and other higher acids in groundnut oil which are contributing factor therefor. The presence of these acids depends on environmental factor and genetical changes in reducing fibre contents for higher yield and change of fatty acid composition.

Whole Sale Price of G. N. Oil and Mustard Oil (Per Quintal) in producing area

Year	G.N. Oil (Madras)	Rapes / Mustard Oil
1950	67 per mond	89 per mond
1960	68 per mond	76 per mond
1970	485	508.20
1980	1002	1235
1981	1390	1313
1990	3034.00	2134.00

Source : E & S Dte, Ministry of Agriculture

Even to day the mustard oil mills producing genuine mustard oil and are brand conscious run the risk of prosecution, if the BTT cross the limit of 27.5°C, while other values remain within the range. The prices of G. N. Oil since 1981 are showing a spiraling trend and rulling well higher than mustard oil. Consequently continuing BTT become infructuous.

Production and yield								
Ground Nut				Mustard / Rapeseed				
Year	Area	Production	Yield	Irrigated Area %	Area	Production	Yield	Irrigated Area %
1950-51	4.494	3.481	775	NA	2.07	0.76	368	NA
1960-61	6.463	4.812	745	3.0	2.88	1.35	467	12.1
1970-71	7.33	6.11	834	7.5	3.32	1.98	594	25.2
1980-81	6.80	5.01	736	13.3	4.11	2.30	560	43.7
1990-91	8.31	7.51	904	18.6	5.78	5.23	904	59.8
2000-01	6.56	6.41	977	17.6	4.48	4.19	935	66.1
2005-06	6.74	7.99	11.87	19.6	7.28	8.13	1117	72.1

Source : E & S Dte. Ministry of Agriculture

Area, Production

Area : Million Hectares

Production : Million Tonnes

Yield : Kg per Hectare

From the above numerical values, it will be observed that :

1. The researchers especially from Pusa Institute Delhi and Agriculture University Pantnagar have genetically produced a number of high yielding varieties of mustard/rapeseed. However, there is no breakthrough in the case of groundnut in spite of sowing imported seed which could not adapt well.
2. The present calculation of oil yield from mustard/rapeseed cumulative from expeller and solvent extraction is around 40% whereas in Groundnut it is 28%.
3. Total oil availability from mustard / rapeseed is about 33 lakh tones as compared to Groundnut which is 23 lakh tones.
4. The increased availability of mustard / rapeseed oil dipped the prices in comparison with groundnut oil. The price of groundnut oil are spiraling since 1981.
5. Encouraged by the higher production and yield and consequent better return the irrigated area of mustard / rapeseed is increasing.

ENVIRONMENTAL FACTOR OR TROPICALISATION PHENOMENA

It is a common knowledge that the fatty acid composition of the oils from the same seeds cultivated in colder climatic conditions will have more unsaturated acids as compared to those cultivated in hot climatic condition will have more saturated acids.

"The iodine values of the oil from American Varieties of Indian Cottonseed are only slightly more than those of the desi type seed and both oils are less unsaturated than the oil generally produced in the U.S.A. The tropical climate of India might be responsible for the more saturated nature of the oil" (P-39 cottonseed chemistry and technology by K.S. Murti and K.T. Achaya a publication of CSIR, Govt. of India).

"Specific varieties grown near the northern range of their area of adoption in USA have 1-2% more linolenic acid and 3-6% more linoleic acid than those grown at the southern range" (Handbook of soy oil processing and utilization by American Oil Chemistry Societies p-19).

A part of the abstract from the paper "Effect of temperature on soyabean constituents oil, protein, fatty acids, Amino acids and sugars by R.B. Wofl, J.F. Cavins, R. Kleiman and L. T. Black U.S. Deptt of Agriculture, PEORIA JAOCS Vol.59 May 1982 indicated that "It is generally thought that oilseed plants grown under a warmer climate produce seed containing less highly unsaturated fat than when growth under a colder environment. For example, Collins and Howell found in soyabean that linolenic and more strongly, linoleic acids are negatively correlated with temperature. Howell and Collins, using both location and greenhouse studies, confirmed these results. Collins and Sedgwick found that Soyabean Varieties grown at the Northern end of their range of produce 1-2 percentage higher linolenic acid and 3-6% higher in linoleic acid than when grown in the Southern range. Champar et al showed that soyabean grown at T. Flon, Georgia (with an average temperature of 37.5°C) have 2% lower linoleic and 20% lower linolenic acid content, with 11% higher oleic, than the same varieties grown at Bloirville, Georgia (with an average daily temperature of 18°C)".

It may be recalled that the Soyabean seeds imported from USA having around 9% linolenic acid were sown in MP. The results were encouraging, the per hectare yield was satisfactory showing they adapted well. The Directorate of Vanaspati; veg. oil & fats was asked to study refining and partial hydrogenation of the oil obtained from soyabean grown in M.P. so as to avoid flavour reversion causing fishy smell due to higher linolenic acid contents. However, to the great surprise of the Directorate, the linolenic acid contents were found around 7%. This was due to environmental factor of colder climate of USA and warm conditions of Madhya Pradesh.

BIOTECHNOLOGICAL AND GENETICAL CHANGES

1. During the last few decades innovative work has been done to reduce fibres contents and formation of bold seeds, thereby increasing oil yield. Indian Counsel of Agriculture research society in their 74th Annual General Meeting on 16th July 2003, in Delhi mentioned about new varieties of mustard / rapeseed possessing oil contents more than 41%.
2. A news item published in H.T. dated 19.03.2000 mentioned "New Varieties of Mustard to induce taste change". Much popular Makke-di-Roti-Sarson da Sag will taste quite different. New varieties of mustard have been introduced by the G.B. Pant University of Agriculture and Technology to enhance the yield. Taste buds may find it difficult accustoming themselves to relish the flavour of some new varieties introduced in recent years. Efforts are being made to popularize them as new varieties may be found richer in nutrients than the conventional varieties. Kiran a new variety of mustard (sarson-rai) is being popularized now to improve the yield and quality. It has been found resistant to the diseases prevalent in the conventional mustard crops. Asked whether it would taste better than the conventional variety of the sarson, Dr. M.P. Pandey, Head of the Genetic and Plant Breeding said tastes of people would change as they started using new variety. New seeds had been distributed in U.P. and Rajasthan to popularize its use by farmers. The farmers might have multiplied the seed for sowing thereafter.

The National Institute of Canada reduced percentage of erucic acid in mustard oil from 49 - 52% to one % only and substitutes it by oleic acid.

3. **TRANSGENIC MUSTARD SEED TO REACH FARMERS** Transgenic mustard seeds are expected in farmer field this year. The Research Committee for Genetic Modification (RCGM) has already cleared the controlled field trials and in the current rabi season large scale field trails are in progress under the supervision of the Genetic Engineering Approval Committee (GEAC), said Dr. Paresh Verma, Director Research Pro Agro Seeds. Mustard will hopefully be the second transgenic crops to be commercialized in the country after Bt cotton which is still awaiting the government's nod. The transgenic mustard seeds have 25 per cent higher yields. BT-cotton which was waiting the Govt. nod was cultivated by Andhra farmers. Encouraged by the higher yield the cultivation increased at a faster pace. China had earlier started its cultivation and created problems for Indian garments exporters, by marketing cheaper garments.

Dr. Verma told the media in Delhi that proprietary technology owned by Avantis Crop Sciences, Belgium was used to evolving transgenic mustard seeds. This technology is called Barnase Barstar technology and is used for introduction of gene. By dint of this technology a male sterile gene which ensures complete

sterility was introduced in the female parent and a restorer gene which ensures complete fertility was introduced in the male parent. This ensures complete fertility in the hybrid. He said that this is done because in natural mustard there is no scope for hybridization by conventional methods. The hybrid cross in natural mustard is not 100 per cent fertile due to inadequate restorer gene.

He further stated that mustard have now been successfully genetically engineered to develop male sterile lines using Barnase gene and restorer lines, the Barstar gene. A complete system for hybrid is now available and has been tested for stability over two years. A new series of synthetic B Juncea types have been produced by crossing productive B compestris and B nigra type and doubling the chromosomes of F1s. This could be a new gene pool for breeding. Therefore, transgenic plants expressing bacterial genes and plant derived insecticidal inhibitor gene would provide effective and ecologically sustainable option for insect control. Thus, it can be said that with transgenic techniques all most all problematic areas of mustard cultivation would be successfully solved.

At present Indian farmer is not able to produce above 1100 kg mustard per hectare. Therefore, it is necessary to break yield ceiling and this can successfully be achieved by introduction of transgenic mustard, he said, (Bookmark posted and updated Saturday January 12, 2002).

4. It is currently possible by genetic engineering to change the degree of unsaturation that is number of the carbon-carbon double bonds and modify the chain length of fatty acids in plants. A number of transgenic varieties of canola each producing a different modified oil have been created (Table below). Each transgenic variety contains one additional gene. For example the production of shortening, margarine and confectionary goods requires large amount of stearate. One variety of transgenic canola contains an antisense copy of Brassica stearate desaturase gene which inhibits the expression of the normal canola gene and leads to the accumulation of stearic acid rather than the desaturation of stearic acid to oleic acid. Progress on the production of transgenic canola varieties with modified seed oil properties has been both rapid and impressive.

TRANSGENIC CANOLA VARIETIES WITH MODIFIED SEED LIPID CONTENTS

Seed Product	Commercial Use (s)
40% Stearic	Margarine, cocoa butter
40% Lauric	Detergents
60% Lauric	Detergents
80% Oleic	Food, Lubricants, inks
Petroselinic	Polymers, detergents
"Jojoba" wax	Cosmetics, Lubricants
40% Myristate	Detergents, soaps, personal care items
90% Erucic	Polymers, cosmetics, inks, pharmaceuticals
Ricinoleic	Lubricants, plasticizers, cosmetics, pharmaceuticals

Adopted from Murphy, Trends Biotechnol, 14:206-2013-1996,
Book-Molecular Biotechnology by Bernade R. Glick and Jack J. Pasjernak.

CONCLUSION

1. In view of the higher prices of G. N. Oil than mustard oil, the imposition of Bellier Turbidity test become infructuous to continuous with.
2. Environment Factor / Tropicalisation phenomenon is contributor to the misuniformity of Arachidic acid higher acids. In view of this the BTT cannot be uniform for the oil from different region.
3. Genetical transformation of fatty acid composition of mustard oil to canola oil as also to reduce fiber contents etc. to increase oil yield has contributed to the change in specifications of oil.
4. Prof. M.M. Chakarborty in one of his lecture mentioned that genetical changes are so fast that a time will come when one will chew the seeds of Mustard and enjoy the taste of ground nut.

In view of the foregoing, it is not justified to continue the BTT in the specifications of rapeseed / mustard oil.

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WELCOME ADDRESS

65th OTAI Seminar, New Delhi

By Nadir Godrej

Distinguished guests, learned speakers,
OTAI colleagues, knowledge seekers,
Now on behalf on OTAI
I welcome Minister Sahai.
Food processing is his fief
And it is my firm belief
This Industry will surely grow.
Food waste will end and jobs will flow.
Our seminar and exhibition
Has a very worthy mission
To elucidate this complex field.
And I am sure that it will yield
Insights into many things,
Each of our many speakers brings
His special expertise to bear.
We are so glad that they can share
Their many learnings with us here.
For this I think we should all cheer.
In cereals we are self-sufficient.
In oilseeds we're not efficient.
As time goes on we import more
The tonnage soon will cross a Crore!
with such imports what surety
That we'll enjoy security?
But of course there is a way
Technology can save the day.
The exporters are represented
Their views will also be presented.
MPOC and ASA
Will of course have their say.
In agriculture no one's keener
Than soy producer Argentina
Represented here by no less
Than jovial Ambassador Alvarez.
Now every oil has it's charm
Of course the highest yielder's palm.
Here Indonesia's in the lead
And Ambassador Andi Ghalib
Can show us how they'll expand
Preserving forest and peat land.

Both countries are tried and tested
And the Godrej group has invested
In both of them recently
And more two way ties we'll surely see.
Biofuels are a question mark
The choice we have is very stark.
They surely help enhance our fuel
But it can lead to a fierce duel.
The rich secure their energy
But then of course the poor see
Inflation that can run away.
So how can we then save the day?
Now Biotech is one good way
It surely has a role to play.
We should not be too dogmatic.
Approval can't be automatic
But nor should policy be static.
We must be cautious but pragmatic.
With higher yields we can be fair.
Food and fuel can fairly share.
Every crop has residues.
The biomass that then ensues
Should in time be upgraded
Technologists should be aided
In this very noble task.
And that is all that we ask.
Can anyone here remember
A monsoon lasting till November.
The weather's in a broader range
There's evidence of climate change.
The world must get it's act together
Or tolerate peculiar weather.
Our sector will be in turmoil
With conflicting needs for our oil
And whether we can sustain
Present methods to obtain
Our oil and fat raw materials
Which share the land used for cereals.
A carbon price is a must
For competition fair and just.

Now mandates can cause distortion
And we must use them with much caution.
For fuel they are oft applied.
But chemicals are then denied.
The carbon benefits are same
But Oleochemicals play the game
On a rather bumpy field.
That is why we should wield
One steady global carbon price
I wish I could somehow entice
Each nation to impose a tax
That's uniform and rising but tracks
Our progress on the carbon front
This will surely help the hunt
For green tech and conservation.
It would be fair, for every nation
Would apply it but be free
To give relief fiscally
In VAT or even income tax.

But there would be no cracks
In the uniform attempt.
A wary world we could tempt
With a tax that's small but rising.
What I think will be surprising
Is that growth would hardly slow
Instead the economic flow
Would be strong but change direction
This should be welcome to every section.
Growth I'm sure will still be seen
But it will be much more green.
The response at first might be slow
But technology will make it grow.
Technology can save the day
And we can find the perfect way
To have both the poor rise
And the atmosphere decarbonise.
And on this journey, this Seminar
Will help to take us very far.

Oil Palm in India

By Nadir Godrej

The Oil Palm is a wondrous tree
Its yield is there for all to see.
It's best amongst commercial plants.
Yes, I'm aware of Algae's rants.
Some day of course we'll go that way.
Today we can but hope and pray!
Malaysia was the Oil Palm King
The Indonesia took a filing.
It was a long but steady slog
And now it finds that it's top dog!
Malaysia says it's out of land
Can Indonesia still expand ?
They could but for global warming
Environmentalists are swarming
Demanding deforestation bans
Upsetting Indonesia's plans.
There could be doubt on who should pay
But no thinking mind would every say
No to a deforestation ban
Or deny the dear orangutan
It's natural habitat.
And now that we've settled that
I'll justify India's case.
The Oil Palm like you and me
Came out of Africa, you see.
In South East Asia it found a home
And on that I could write a tome.
But for now I'd like to say
Imperial Britain got its way.
Producing rubber was the goal.
Brazilian Hevea seeds they stole
The seeds sojourned at first at kew
They quickly grew and before you knew
The Brazilian monopoly was lost
And Malaya at a lower cost
In due course took the rubber lead.
And you might wonder what's the need
To talk of rubber and not of oil.
But rubber plantations were fertile soil
For a stately ornamental tree.
That's how the Oil Palm came to be
In the lands where it would thrive.
The industry has shown much drive.
But still we have to understand
To grow, the industry needs land.
The world will not let forests go

Without a bruising fight and so
It's India's time to raise and shine.
It's true our climate isn't fine.
Malaysia has many months of rain,
If flooded, the soil will quickly drain.
The seasonal fluctuation's slight
The conditions seem to be just right.
In India monsoons bring the rain
The dry season is quite a pain.
And irrigation is a must.
Without water the crop goes bust.
The seasonal fluctuation's great.
This is bad news but just wait.
The insolation is very high
And when the farmers really try
The yields can match Indonesia.
And since we don't have amnesia
We have to recall the costs are high.
But no matter how hard we try
All other oils cost even more
This brings Palm Oil to the fore.
The potential here is rather high
A million hectares we could try.
But how did all of this begin?
When Rajiv Gandhi did come in
He took some critical decisions
And set up Technology Missions.
Every mission needs a goader
And Rajiv had his Sam Pitroda!
The Oilseed mission was very efficient
And soon we were self-sufficient.
Later on we lost our grip
As we let our focus slip.
But the newly formed DBT
(Department of Biotechnology)
Took up Oil Palm breeding
And ended up by seeding
An entirely new industry
The smallholder got to grow the tree
Experts were called and areas rated
Then enterprises were allocated
An area that they could command
Extension work created demand
Seeds were grown here or imported
Farmers everywhere were courted.
Andhra took an early lead.

But other states soon took heed,
Though Andhra has the lion's share.
Can it be grown everywhere?
You will get a simple answer
Right till the Tropic line of Cancer!
But farmers must be persuaded
At every stage they must be aided.
Now Palm Oil prices fluctuate
State governments make us wait
To get the seedling subsidy.
I don't see why it's hard to see
It's vital for food security.
We import nine million tons of oil.
The very thought makes my blood boil.
To rely on others should make us queasy
Since growing palms is rather easy.
Yes, Indonesia has much land
Where forests stood or still stand.
Is growing palm the ideal story
Or restoring lands to pristine glory ?
As China and India continue growing
Crores more tons will be flowing.
We should indeed be asking whether
In years, like this, of patchy weather,
Should we depend on other countries
Or ask our netas and our mantris
To help us grow the food we need
So that we can properly feed
The billion strong population
Of our rapidly emerging nation.
Everyone's support is sought
Our wish-list now is very short.
Release on time the subsidy
And introduce an MSP.
Though these suggestions have a cost
Large sums of money won't be lost.
But what I think is really great
We have a way to compensate.
Our next suggestion is a beauty
Reimpose the customs duty.
How much then is the question?
SEA has made a good suggestion-
10 per cent on crude, you'll find
Is fine and 17.5 on refined.
The money raised will help defray
The subsidy and help to pay
For intervention if it's needed.
You might ask why we have pleaded
For MSP if it's not needed.
So far with planting we've succeeded.
Though Palm Oil prices now are high
So's maize and sugar's reached the sky.
The farmers need a safety net.
For years and years they take a bet.

Most of the time the price is high
On this we surely can rely.
As China and India do emerge
We can predict a giant surge
In demand, And where can we then try
To augment the world' supply?
There is no land for us to till.
Except perhaps in Brazil.
Some more oilseeds could be sown
But cereals also must be grown.
Forest cutting will soon stop
We won't have land for any crop.
The weather's turning very fickle
And this could put us in a pickle,
If crops in other countries fail
And all suppliers then turn tail.
But if perchance the weather's fine
Oil prices then might well decline.
And that is why I think we ought
To have an MSP to support
The farmers in their hour of need.
With confidence they'll plant the seed.
For instance earlier this year.
All our farmers were filled with fear.
Palm Oil was low and sugar high
And sugar supporters sought to try
And attract the Oil Palm grower away
And some succumbed to their sway,
Large amounts were then encashed
For Oil Palms to be brutally slashed.
We can say this is benighted.
Farmers shouldn't be short sighted!
But once there is an MSP
The farmer can see clearly.
And if the import duty's granted
Oil Palms will be widely planted.
You shouldn't think that we're opposed
To imports, so we've proposed
A rebate of duty for those that show
A certificate of RSPO.
That only such oil should be bought
Is a cause all should support.
I think that I have made the case
That our wish-list should be put in place
And once all three points are granted
A million hectares can be planted.
Our teams will help with extension
Ensure expansion and retention
With farmer earnings best in class
Thanks to cover crops and biomass.
Our workers will go in the field
And ensure the highest yield!
So let's go out with blazing guns
And produce 5 million tons!

Integrated Scheme of Oilseeds, Pulses, Oilpalm & Maize (ISOPOM) A Minor Relief :

S. K. Roy, President, OTAI (Eastern Region) Calcutta

A country like India with an ever-growing population and increase in disposable income where per capita consumption of Vegetable oils have been 11.4 kg in 2007-'08, 12.86kg in 2008-09 and expected to reach 13.1 kg as per the views of Industry expert, we have to totally depend on the Import of Veg Oils to bridge the gap between demand and supply

Oilseed production remains static at 26-27 Million tonnes per year and the productivity at 950 kg approx per hectare which is half or less than half of world average in some oils. In the oil year 2008-09 the import was 8.6 Million tonnes at the cost of 27,000 crore. Our increasing dependence has reached a stage of more than 50% over the years. Industry gets affected due to non-utilisation of capacity reason being non-viability in crushing, imported oil being cheaper.

Our policy makers introduction of short-term inadequate measures may result in a long term damage to the Oilseed Production sector and farmers may shy away from the cultivation of oilseed. Among the measures which has been implemented by the Govt. of India, ISOPOM is one of the measures being implemented in 14 major oilseeds growing states from 1.4.2004. West Bengal is also included as one of the states. Very recently it has been published in a local daily that taking advantage of this scheme one Vegetable Oil processing Industry has initiated measures for increasing the production of White Sesame Seed. White Sesame Seed/Oil is in great demand.

What is ISOPOM ?

Integrated Scheme of Oilseeds, Pulses, Oilpalm & Maize (ISOPOM)

In order to provide flexibility to the States in implementation based on regionally differentiated approach, to promote crop diversification and to provide focused approach to the programmes, the four erstwhile schemes of OPP, OPDP, NPDP and AMDP have been merged into one Centrally Sponsored Integrated Scheme of Oilseeds, Pulses, Oilpalm and Maize (ISOPOM) being implemented from 1.4.2004.

The salient features of ISOPOM are as under :-

1. Flexibility to the states to utilize the funds for the scheme/crop of their choice.
2. Annual action plan to be formulated by the State Governments for consideration and approval of the Government of India.
3. Flexibility to the states for introducing innovative measures or any special component to the extent of 10% of financial allocation.
4. Involvement of private sector by the State Governments in the implementation of the programme with a financial cap of 15%.
5. Flexibility for inter component diversion of funds up to 20% for non-seed components only.

-
6. Diversion of funds from seed components to non-seed components with the prior approval of the Department of Agriculture & Cooperation.
 7. Increase under staff & contingency not permitted except by revision of pay scale and increase in rate of Dearness Allowance with the prior approval of the Department of Agriculture & Cooperation.

1.1 Oilseed Development Programme

Under ISOPOM the programmes for development of oilseeds are implemented in 14 potential states viz. Andhra Pradesh, Bihar, Chhatisgarh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. The programme pre-dominantly benefits small and marginal farmers as the majority of the farmers involved in the cultivation of oilseed crops belong to these categories. Under the Scheme, assistance is provided for purchase of breeder seed, production of foundation seed, production and distribution of certified seed, distribution of seed minikits, distribution of plant protection chemicals, plant protection equipments, weedicides, supply of rhizobium culture/phosphate solubilising bacteria, distribution of gypsum/pyrite/liming/dolomite, distribution of sprinkler sets and water carrying pipes, publicity etc. to encourage farmers to grow oilseeds. In order to disseminate information on improved production technologies amongst the farmers, block demonstrations and Integrated Pest Management (IPM) demonstrations are organized through State Department of Agriculture and Front Line Demonstrations through ICAR.

Thrust Areas for Oilseeds Production

The thrust areas identified for increasing production of oilseeds during Tenth Plan are special production programme in areas at the tail end of the command irrigation system, diversification programme of rice - wheat system into oilseed, convergence of oilseeds production programme with watershed development programme, inter cropping of oilseed with other crops and extension of the oilseed crops in selected regions of the various States for production. Besides, thrust will be given to increase the seed replacement rate (SRR), promotion of proper and balanced mix of NPK and use of sulphur, use of bio fertilizers, popularization of IPM technologies and promotion of sprinkler sets.

1.2 Pulses Development Programme

For increasing the production and productivity of pulses in the country, pulses production programmes are being implemented under ISOPOM in 14 states viz. Andhra Pradesh, Bihar, Chhatisgarh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, U.P. & West Bengal. Under the scheme, financial assistance is provided for the production and distribution of certified seeds, distribution of seed minikits, distribution of sprinkler sets, rhizobium culture and Phosphate Solubilising Bacteria (PSB), gypsum/pyrite, supply of plant protection chemicals/weedicides/bio-pesticides and plant protection equipment, distribution of bio-fertilizers and gypsum etc. In order to disseminate the production technology amongst the farmers, frontline demonstrations are organised by the ICAR. Block and Integrated Post Management (IPM) demonstrations are organised through Stat

Department of Agriculture on large scale. Provision for crash programme for quality seed production of pulses has also been made in the scheme in order to meet the shortage of quality seeds.

Thrust Areas for Pulses Production

The thrust areas identified for increasing production of pulses during Tenth Plan are special production programme in areas at the tail end of the command irrigation system, diversification programme of rice-wheat system, convergence of pulses production programme with watershed development programme, inter cropping of pulses with other crops and extension of these crops in selected regions of the various states for production. Besides above, thrust will be given to increase the seed replacement rate (SRR), promotion of proper and balanced fertilization including macro & micro nutrients, use of bio fertilizers like rhizobium culture & PSB, popularization of IPM technologies and promotion of sprinkler sets. Involvement of private sectors for extension support, production of seeds, supplying inputs will also be promoted. Increasing availability of seeds by under taking programme for production of certified/quality seed will also include in the crash programme for quality seed production of pulses.

1.3 Oil Palm Development Programme

In view of its importance and significance, oil palm cultivation was included under the Technology Mission on Oilseeds & Pulses in 1991-92. The Oil Palm Development Programme 80,000 ha in the identified states during Eighth Plan (1992-97). OPDP continued during IX Plan to bring an additional area of 80,000 ha under oil palm with an outlay of Rs. 179.65 crores including central outlay of Rs. 134.74 crores. For 10th Five Year Plan scheme is approved to cover additional 50,000 ha with an allocation of Rs. 50.00 Crores. The basic objective of giving assistance to farmers for Oil Palm cultivation is the need to induce them to take up Oil Palm cultivation, which is capital intensive and has long gestation period.

The programme is being implemented in the States of Andhra Pradesh, Karnataka, Tamil Nadu, Gujarat, Goa, Orissa, Kerala, Tripura, Assam & Mizoram.

Pattern of Assistance

Assistance is being provided under OPDP for the following components :-

1. Planting Material;
2. Cultivation;
3. Drip Irrigation;
4. Training;
5. Extension & Publicity;
6. Establishment including Staff;
7. Seed Gardens;
8. Testing of Oil Palm Genotypes; and
9. Leaf Analysis Laboratories;
10. Diesel Pumpset;

-
11. Demonstration;
 12. Development of Wasteland.

Thrust Areas for Oil Palm Production

- ❖ Rationalization of duty structure on imports of edible oils.
- ❖ Ensure availability of credit to farmers for cultivation of oil palm.
- ❖ Establishment of adequate processing facilities in the States.
- ❖ Enactment of Oil Palm Act by the states to provide assured marketing of FFBs.
- ❖ Establish seed gardens for availability of adequate seed/sprouts.
- ❖ Financial assistance for R&D to undertake experiments for reducing gestation period of the crop, developing dwarf and water-resistant varieties, development of new hybrids, intercrop and mix cropping systems and tissue culture, conduct of Genotype X Environment experiments for establishing suitable eco-systems etc.
- ❖ Development of appropriate harvesting tools/techniques.
- ❖ Emphasis on inland and abroad trainings of staff/farmers.
- ❖ Increase in number of demonstration plots for popularization of oil palm crop.

1.4 Accelerated Maize Development Programme (AMDP)

Maize is cultivated over an area of 74.22 lakh hectares with a grain production of 147.17 lakh tonnes (2003-2004) annually in India. About 90 per cent of cultivated maize is Kharif rainfed. Maize cultivated mainly for food, fodder, feed and industrial use. More than 3500 value added products of daily application are derived from maize.

2. Under ISOPOM, Maize Development Programmes are being implemented in 15 States viz. Andhra Pradesh, Bihar, Chhatisgarh, Gujarat, J&K, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, U.P. & West Bengal. The main emphasis had given for transfer of modern crop production technology to the farmers' fields through front line demonstrations, field, IPM & seed minikit demonstrations, officers and farmers trainings, conference/seminars/workshops on Maize Development, use of improved implements etc.

Component-wise Allocation during X Plan

The financial allocation of the scheme is as follows :

Year	Central Share Released (Rs. in '000)
2004-05	2624847
2005-06	1381854 (till 7.11.2005)

Under this scheme, Block demonstrations and Integrated Post Management Demonstrations are Organized through State department : Agriculture and ICAR. Budget Expenditure of Rs. 320 Crores has been kept for 2009-10 for ISOPOM Scheme.

India has not achieved self sufficiency in the production of edible oils as the availability of edible oils in the country from all domestic sources is less than the demand. The deficit is being met by imports. During the year 2008-09 (Nov' to Oct) net domestic availability of edible oils/and demand is at 84.6 lakh tons and 166.4 lakh tons respectively, Imports : 81.8 lakh tons.

Industry, more specifically, SEAI desired to restore import duty in the Budget 2010-11, and declare Palm Oil as Plantation Crop as one of the important measures for higher oilseed production. In the Budget 2010, Finance Minister has made a provision for Rs. 300 to organize 60,000 Pulse and Oilseed villages in rain fed areas for 2010-11. It will provide an integrated intervention for water harvesting, watershed management and soil health.

In order to bring the self-sufficiency in vegetable oil production in a country like India with a huge potential of 25 permitted vegetable oils what is required is sincerity in targeted approach for a long term approach for a SURPLUS. Some of the suggestions for increased production are

1. Develop a Medium/Long term plan to increase production and productivity of Oilseeds.
2. Exploit T.B.O. Potential: 0.5 Million Ton to 3.5 Million Ton.
3. R.B.O. : 7.5 Lakh Ton to 12 Lakh Ton.
4. Increase area on Oil Palm and Production of C.P.O. : Presently about 60,000 M.T.C.P.O.

Ack. : Ministry of Agriculture, Govt. of India.

PARLIAMENT NEWS

Rajya Sabha Unstarred Question No. 529 Answered on 12th November 2010

SUBSIDY ON EDIBLE OIL AND PULSES

Shri Rudra Narayan Pany (OIH)

Will the Minister of Consumer Affairs, Food And Public Distribution be pleased to state:

(a) Whether subsidy is given to keep under control, the prices of pulses and edible oils, keeping in view welfare of common people of the country.

(b) if so, the details thereof;

(c) whether there is any provision for fixed quota for subsidized pulses and edible oils for States and UTs;

(d) if so, the quantum of quota fixed for Orissa;

(e) whether Government of Orissa has failed to procure its fixed quota; and

(f) if so, the reasons therefor ?

Answer

The Minister of State in the Ministry of Agriculture and the Minister of State in the Ministry of Consumer Affairs, Food and Public Distribution.

(Prof. K. V. Thomas)

(a) & (b) : Yes Sir, Government encourages import of pulses under the 2 schemes namely (i) scheme for import of pulses by PSUs against reimbursement of losses upto 15% of landed cost and services charge of 1.2% of CIF value (ii) Supply of imported pulses by PSUs to state Governments for distribution through PDS, @ 1 kg per family per month at a subsidy of Rs. 10 per kg. Similarly for edible oils, there is a scheme of supply of imported edible oils to States/UTs for distribution to ration card holders @ 1 litre per month at a subsidy @ Rs. 15/kg.

(c) : No Sir.

(d) : Does not arise

(e) : No State-specific quota has been fixed. 2005 tonnes of yellow peas pulses have been supplied during 2010-11 (as on 4.11.2010) under the Scheme for Supply of imported pulses by PSUs to state Governments for distribution through PDS at a subsidy of Rs. 10 per kg. As regards edible oils a 97070 tonnes have been supplied so far during 2008-09 and 2010-11 (up to October, 2010) under the scheme of supply of imported edible oils to States/UTs for distribution at a subsidy @ Rs. 15/kg.

(f) : In view of the (e) above does not arise.

Lok Sabha Unstarred Question No. 189 Answered on 9th Nov. 2010

PRICE OF EDIBLE OIL

Shri Jagdish Thakor

Will the Minister of Consumer Affairs, Food and Public Distribution be pleased to state;

(a) whether the price of edible oils has registered a steep rise during the last three months of the current financial year due to increased demand / consumption :

- (b) if so, whether any estimate of increase in consumption of edible oils has been made in the country for the last three years and the current year;
- (c) if so, the details and the outcome thereof;
- (d) whether the production and supply gap of edible oil has widened in the domestic and international market;
- (e) if so, the details thereof indicating the annual requirement of edible oils in lakh tonnes in the country; and
- (f) the steps being taken by the Government to make adequate quantity of edible oils available in the country ?

Answer

Minister of State in the Ministry of Agriculture and Minister of State in the Ministry of Consumer Affairs, Food & Public Distribution (Prof. K. V. Thomas).

(a) : Wholesale prices of three major edible oils, namely, mustard oil, soyabean oil and RBD palmolein in the domestic market have increased by 2.8%, 4% and 10.5% during last three months of the current financial year. However, the wholesale price of groundnut oil has decreased by 16.5% during this period.

(b) to (e) Estimates of total consumption, domestic availability and imports of edible oils in the Country for last three years and current oil-year (Nov. to Oct.) are as under.

<i>(Quantity in lakh tonnes)</i> Year (Nov. to Oct.)		
Details	2006-07	2007-08
Total demand/ consumption	120.9	142.6
Domestic availability	73.7	86.5
Imports	47.2	56.1

<i>(Quantity in lakh tonnes)</i> Year (Nov. to Oct.)		
Details	2008-09	2009-10
Total demand/ consumption	166.4	169.3
Domestic availability	84.6	79.3
Imports	81.6	90.0

The gap between domestic supply and demand of edible oils has been widening and is met through imports. As per available information, there is not much gap between global demand and supply of edible oils.

(f) Government has taken a number of steps to augment availability of edible oils in the country. The steps taken include :-

-
- ✿ The import duty on crude and refined edible oils reduced to Nil and 7.5% respectively w.e.f. 1.4.2008.
 - ✿ Export of edible oils have been banned w.e.f. 17.3.2008 upto 30-9-2011 with certain relaxations.
 - ✿ State Governments has been allowed to impose stock limits on edible oils and oilseeds w.e.f. 7.4.2008.
 - ✿ A scheme for distribution of subsidized imported edible oils has been implemented since 2008-09 through State Governments/UTs @ 1 litre per ration card per month with a Central subsidy of Rs. 15/- per kg.

Lok Sabha Unstarred Question No. 222 Answered on 9th Nov. 2010.

OIL PALM CULTIVATION

Shri Nama Nageswara Rao

Will the Minister of Agriculture be pleased to state :

- (a) whether the government has any scheme/programme to promote cultivation of oil palm in the country;
- (b) if so, the details thereof;
- (c) the incentives given to the farmers of encouraging cultivation of oil palm in the country;
- (d) whether the Government is aware that certain States including Andhra Pradesh are levying tax on the oil palm produce at 4% from the farmers causing financial burden to them; and
- (e) If so, the steps proposed to be taken to dissuade the States from levying such tax?

Answer

Minister of State in the Ministry of Agriculture and Minister of State in the Ministry of Consumer Affairs, Food and Public Distribution

(Prof. K. V. Thomas)

(a) & (b) Yes, Madam, The Government provides assistance for oilpalm under the Centrally Sponsored Scheme of 'Integrated Scheme for Oilseeds, Pulses, Oil Palm & Maize' (ISOPOM). 12 States viz; Andhra Pradesh, Karnataka, Tamil Nadu, Gujarat, Goa, Orissa, Kerala, Mizoram, Assam, Maharashtra, West Bengal and Tripura are covered under ISOPOM. For States viz. Assam, Maharashtra, West Bengal and Tripura are not implementing the Oil Palm Development Programme. Besides ISOPOM, assistance can also be available by the States under Rashtriya Krishi Vikas Yojana (RKVY).

(c) Assistance is provided for cost of planting material, maintenance of plantation for 4 years, cultivation inputs, installation of drip irrigation system, diesel pump sets, training, development of waste-land, extension and publicity, establishment & staff, demonstrations, leaf-nutrients analysis laboratories and testing of genotypes under various environmental conditions, and innovative interventions etc.

(d) & (e) No Tax/VAT is being levied on Oil Palm Fresh Fruit Bunches (FFBs) procured from farmers in the State of Andhra Pradesh.

Lok Sabha Unstarred Question No. 2766 Answered on 26th Nov. 2010.

TRANS FAT IN EDIBLE OIL

Shri S. S. Ramasubbu

Will the **MINISTER OF HEALTH AND FAMILY WELFARE** be pleased to state :

- (a) whether presence of trans fat beyond its permissible limit has been detected in edible oil and other food items in the recent past across the country;
- (b) if so, the details thereof;
- (c) whether the Government has constituted any committee to review the limits of trans fatty acids (TFAs) in edible oil and food items; and
- (d) if so, the details thereof ?

Answer

The Minister of State for Health & Family Welfare
(Shri Dinesh Trivedi)

(a) & (d) : At present, the Prevention of Food Adulteration Rules, 1955 do not prescribe any limits of Trans Fatty Acids (TFAs) in edible oils and fats.

(c) & (d) : Do not arise.

Lok Sabha Unstarred Question No. 1908 Answered on 22nd Nov. 2010.

EXPORT OF SOYABEAN

Shri Lal Chand Kataria.

Will the Minister of **COMMERCE AND INDUSTRY** be pleased to state :

- (a) the quantum of soyabean exported by the Government during the last three years;
- (b) whether soyabean export of the country was reduced by 30 percent during the current year ending in September;
- (c) is so, the details thereof;
- (d) whether the farmers have hoarded soyabean in anticipation of getting good returns;
- (e) if so, the details thereof;
- (f) whether due to high price of soyabean in the domestic markets, its export has been adversely affected; and
- (g) if so, the details thereof and the corrective steps being taken by the Government in this regard ?

Answer

The Minister of State in the Ministry of Commerce and Industry.
(Shri Jyotiraditya M. Scindia)

(a) Madam, the Quantum of export of soyabean during the last three years is tabulated below :

Year	Quantity (in thousand tons)	Value (in Lakh)
2007-08	7.46	12.02
2008-09	44.84	90.62
2009-10	24.70	57.65

(b) and (c) : The export of soyabean has fallen from 44.84 thousand tons in the last year to 24.70 thousand tons in the current year.

(d), (e) and (f) According to the trade estimates farmers/traders seem to have withheld soybean due to unreasonably higher quote in the futures market. Also anticipating better returns due to high price of soybean meal in the domestic market, industry focussed its attention on domestic sales. Further, due to higher global production our rates were not competitive in international markets which led to the decline in exports.

(g) A benefit of 2% FOB value of exports under Focus Products Scheme (FPS) has been given by the government, to encourage exporters of soyabean.

Lok Sabha Unstarred Question No. 2079 Answered on 23rd Nov. 2010.

EXPORT OF EDIBLE OIL

Shri Kachhadia Naranbhai.

Will the Minister of Consumer Affairs, Food and Public Distribution be pleased to state:

- whether export of vegetable oils have been made free and ban on groundnut oil has also been lifted;
- if so, the details of quantity of various vegetable oils exported during 2009-2010; and
- the impact of export on production and price of vegetable oils in the domestic market ?

Answer

Minister of State in the Ministry of Agriculture and Minister of State in The Ministry of Consumer Affairs, Food & Public Distribution (Prof. K. V. Thomas)

(a) No, Madam. There is ban on export of edible oils including groundnut oil with effect from 17.3.2008 upto 30.9.2011. However, exports of coconut oil (through Cochin Port), certain oils produced from minor forest produce and upto 10,000 tons of edible oils in branded consumer packs of up to 5 kgs in a year have been exempted from the ban.

(b) Details of exports of edible oils exempted from the ban are annexed.

(c) The quantity of edible oils exempted from ban on export is very small. Hence their exports do not have significant impact on the production and prices of vegetable oils in the domestic market.

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 2079
DUE FOR ANSWER ON 23.11.2010 IN LOK SABHA.

**DETAILS OF EXPORT OF EDIBLE OILS DURING 2009-10
(APRIL TO MARCH)**

ITEM DESCRIPTION	QUANTITY (TONS)
Soya Bean Crude Oil W/N Degummed	7.335
Soya Bean Oil of Edible Grade	206.843
Ground Nut Oil Crude	2.465
Deodorized (Salad Oil)	0.386
Refined Groundnut Oil of Edible Grade	2.328
Other Groundnut Oil	59.881
Olive Oil & Its Fractions of Edible Grade	0.550
Other Olive Oil & its Fractions (Exclude Vergin)	5.153
Other Crude Oil Obtained Iron Olives	0.943
Crude Palm Oil & its Fractions	9.000
RBD Palmolein	2.000
Other Refined Palm Oil	3.865
Sunflower Seed Oil Crude	19.191
Sunflower Seed Oil (Kardi Seed Crude Oil)	16.000
Sunflower Oil Edible Grade	838.344
Edible Grade Saffola Oil	44.130
Other Sunflower & Safflower Oil	50.050
Coconut (Copra) Crude Oil & Fractions	14.128
Coconut (Copra) Refined Oil & Fractions	5066.847
Crude Palm Kernal Oil	0.112
Refined Palm Kernel Oil & its Fractions	60.500
Other Refined Palm Kernel/Babasu Oils	24,969
Crude Rape Oil	9.874
Other Crude Low Erucic Acid Rape Colza Oil	536.050
Refined Rapeseed oil of Edible Grade	1.201
Other Low Erucic Acid Rape Oil other than Crude	44.848
Crude Colza Oil	5.000
Curde Mustard Oil	1416.127
Crude Rape Seed Oil	45.002

ITEM DESCRIPTION	QUANTITY (TONS)
Refined Colza Oil Edible Grade	0.800
Refined Mustard Oil Edible Grade	98.506
Other Rape Colza/Mustard Oils Excluding Crude	230.465
Crude Linseed Oil & its Fractions	34.244
Other Linseed Oil of Edible Grade	3.382
Crude Maize (Com) Oil & its Fractions	2.010
Crude Sesame Oil & its Fractions	318.324
Sesame Oil & its Fractions other than Crude of Edible Grade	1647.790
Fixed Veg. Oils of Edible Grade viz Mango Kernel, Mahua, Rice Bran Oil	925.931
Other Fixed Veg. Oils of Edible Grade	4352.278
Other Fixed Veg. Fats & Oil & their Fractions	4579.673
Cotton Seed Oil of Edible Grade	0.438
Ground Nut Oil of Edible Grade	459.430
Other Veg. Fats & Oils & their Fractions of Edible Grade	15.294
Other Veg. Fats & Oils & their Fractions	428.839
Margarine Excluding Liquid Margarine of Animal Origin	4.060
Margarine of Veg. Origin of Edible Grade	23.190
Linseed Oil of Edible Grade	1.791
Other Vegetable Oil & its Fractions of Edible Grade	40.813
Total	21660.380

Source : Directorate General of Commercial Intelligence & Statistics (DGCIS), Kolkata.

BOOK REVIEW

A book entitled "**Perfumery Materials, Production and Applications**" has been authored by an very eminent **Professor (Dr) D. K. Bhattacharyya, Emeritus Fellow (AICTE)**, Adjunct Professor Bengal Engineering and Science University, former President, O.T.A.I and a Scientist of National and International repute.

The book speaks for itself about his mastery and competence in the discipline of "Perfumery Materials".

"The book demonstrates the scopes of certain specific reactions and raw materials in producing new synthetics. The enormous scopes of biotechnology involving bio-conversion processes', with isolated enzymes and by fermentation biotechnology involving selective microorganisms has been indicated in making synthetics. The applications of natural aromatic oils in aromatherapy, food, cosmetics/toiletries, imitation perfumery and allied sector have been included.

Standardisation and evaluation of natural aromatic (essential oils and incidence of their adulteration have been elaborated in order to ascertain their quality and authenticity for sustaining the business in the industry" says Prof (Dr) R.N. Mukherjee, Former, Professor and Head, Deptt of Chemical Engg, University of Jadavpur. The book will fulfill a long felt want in the discipline of Essential Oils and will cater to the various categories of Scholars, Scientists and Technologists. The book has already been well appreciated in India and abroad, though published by the Stadium Press L.L.C., USA.

Those interested to procure a copy of this Valued book on Essential Oils may contact Professor D. K. Bhattacharyya at Phone No (033) 2461 9662.

(S. K. Roy)
Editor

BOOK REVIEW

A book entitled “**Advances in Fish Processing Technology**” has been authored by Dr. D. P. Sen, an executive committee member of the OTAI (EZ), Calcutta. He is highly qualified with National and International recognition.

The contents of the book are ● Resources, Their Utilisation - Emerging Trends ● Chemical Composition and Their Technological Significance ● Fish Odours and Flavours ● Fresh Fish Handling and Chill Storage ● Modified Atmosphere Packaging of Seafoods ● Assessment of Freshness Quality ● Traditional Salted and Dried Fish Products ● Proteolysed Fish Products ● Minced Fish Technology ● Retort Pouch Processing Technology ● Surimi and Surimi-Based Products ● Irradiation in Fish Processing ● Antarctic Krill and its Processing ● Microwave in Fish Handling and Processing ● Fish Food Products ● Advance in Freezing Technology ● Shrimp Culture, Shrimp Feed, Melanosis and Moulting ● Selected By-products from sea ● W-3 Fatty Acids, Fish Oil and Fish in Health and Nutrition ● Fishborne Pathogens and Depuration ● Toxins, Pollutants and Contaminants ● Quality Management.

The book should be useful to a wide range of readers including ichthyologists and researchers involved with the fish industry. The book has already been well appreciated among the scientific community.

**Publisher : Allied Publisher Pvt. Ltd.
New Delhi ; Price : Rs. 1800/-**

Offer by the Author on Book entitled

Advances in Fish Processing Technology
Each copy will cost Rs. 900/- (Rupees Nine Hundred only)
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**Author’s Address : Dr. D. P. Sen, E13/3 Karunamoyee
Salt Lake City, Kolkata 700 091 West Bengal**

The Author in his name will issue the receipt

Limited number of copies are available

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A REVIEW

The book entitled "A treatise on Analysis of Food, Fats and Oils" is an example of unique competence and contribution of the authors, S. K. Roy, N. K. Pramanik and A. R. Sen.

The book is the first of its kind in India. It covers the traditional and modern analytical methods for the characterization and quality of fats, oils as well as other food items.

The authors are well reputed and qualified and they have applied their collective wisdom and expertise in including and presenting more appropriately and meticulously the analytical methods.

The book can also be viewed as a rarer type as it deals with the statutory and industrial aspects of fats, oils and their products, and pollution control in vegetable oil industry.

In fact these aspects are of extreme use and importance to those concerned with these issues.

The book is already well received by the readers and users in the academic and industrial circles throughout India because of the highly relevant and beneficial methodologies and basic-cum technological information. The book will be recognised in due course of time as one of the top quality analytical books in the area of food, fats and oils.

Prof. D. K. Bhattacharyya

21-6-2003

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