

Regulations on Blended Edible Vegetable Oils

- Dr. Prabodh Halde
Head, Technical Regulatory Affairs
Marico

Content

- Introduction
- Statutory Framework
- Global regulations
- Benefits of Blending
- Statistics with reference to total oil market
- Indian Edible oil Problem : Loose oil/Adulteration/Mixing

Introduction

- Blended Edible Vegetable oils Permitted by Ministry of Health & family welfare through GSR 457 (E) dated **23rd April 1990**
- From 1990 Many companies are in business of Blended Edible vegetable oil in India.

Statutory Framework

Blended Edible Oil is a highly regulated product in India

- Compliance Requirements as per FSS Regulations in line with FSSA, 2006
- Agricultural Produce (Grading and Marking) Act (AGMARK)
- Declaration of the name and nature of oils on the front & back of pack
- Blending requires AGMARK certification for the manufacturing facilities

FSSAI Definition

- **Blended edible vegetable oil** means an admixture of any two edible vegetable oils where the proportion by weight of any edible vegetable oil used in the admixture is not less than 20 per cent. The individual oils in the blend shall conform to the respective standards prescribed by these regulations. The blend shall be clear, free from rancidity, suspended or insoluble matter or any other foreign matter, separated water, added colouring matter, flavouring substances, mineral oil, or any other animal and non-edible oils, or fats, argemone oils, hydrocyanic acid, castor oil and tricresyl phosphate. It shall also conform to the following standards

Its Accepted Globally

- ❖ Blended Edible Vegetable Oil is regulated internationally
- ❖ **European Union, UK, Canada, USA, Russia and Pakistan**
- ❖ Canada Regulation : Marking of Blended Edible Oil as “Vegetable Oil”
- ❖ Pakistan Regulation : Blending of edible vegetable oils are termed as “Cooking Oil”

International Regulation

Regulation	Vertical Standard Present	Fatty Acid Ratio Defined	Remarks
Kenya	Yes	No	Standards define the quality parameters and labelling requirements wherein the dominant oil shall appear first in the label
Canada	Yes	No	Definition is provided, that allows blend of oils as Multi-Source Vegetable Oils
Russia	Yes	No	Definition & labelling requirements provided that indicates that blended edible vegetable oil is allowed to be manufactured in different ratios
Pakistan	Yes	No	Defined under cooking oil which means blending of vegetable oils of permissible edible grades of vegetable origin

International Regulation

Regulation	Vertical Standard	Fatty Acid Ratio Defined	Remarks
UK	No	No	Standards for blended edible vegetable oil are not defined under the regulation and blending is nowhere prohibited with no fatty acid ratio requirements
Japan	No	No	No specific standards for oils & fats under Japan regulations, however defined labelling requirements for mixed oil (blended edible oil). No fatty ratio defined.
USFDA	No	No	Neither specific standards nor any prohibitions imposed for blended edible vegetable oil, hence it is inferred that blended edible vegetable oil is allowed to make with no restrictions on fatty acid ratios.
FSANZ	No	No	Blended edible oil is neither separately defined nor prohibited, hence no fatty acid ratio defined for blended edible oil
European Commission	No	No	Only labelling requirements are defined to declare all vegetable oils in descending order under ingredient list and no prohibitions imposed on blend of oil, hence it is interpreted that no fatty acid ratio requirements defined for blended edible vegetable oil

Blending- Genesis & Benefits

- All 3 Fatty Acids are needed in the body



Product

- Nutrition of 2 oils
- Better balance of saturated to unsaturated fatty acids than single oil.
- Benefits of minor components

Consumer

- Scientific solution to oil rotation
- Convenient alternative to oil rotation
- Improved sensorial/culinary attributes (taste, aroma)
- Better Frying medium
- Improved shelf life

Health

- Maintain Biomarkers (Dyslipidemia, Inflammation, Stress, Glucose, Obesity, etc.)

Benefits of Blending

- **NIN recommends** avoid excess intake of any one group of fatty acids & to obtain right amount of different fatty acids in the diet
- **However, single oils** have their own set of unique non-glyceride component (ex: rice bran oil has oryzanol and olive oils have polyphenols)
- Hence, blend of 2 or more vegetable oils is recommended in order to get all the fatty acids in a balance & synergy of minor non glycoside component



Blending is allowed in other foods too

- Even we have seen other sectors wherein mixing/Blending is done and no restriction for mixing/blending of one component with reference to ratio and also no agmark requirements.
- Viz 1) Mix fruit Juices 2) Mix fruit jams 3) Multi grain atta 4) Blending of tea Powder



No restriction to this category or double control

Indian Market : Blended Edible Oil

Blended Edible Vegetable Oils constitutes only 2% of the total oil consumption in India

Particular	Qty In Lakhs MT	Percentage of Total
Total Consumption	225	100
Industry use -B2B (HORECA & Food Industry)	50	22
Consumer Packs - As Single Oil -	100	44
Loose Oil	60	27
Vanaspati	10	4
Legitimate Blended Oils – AGMARK/ FSSAI Licensed	4	2
Other Usage	1	0.4

Acc. to the 2016-17 report, almost 60 lakh MT is sold in loose form

Some Challenges

Issue # 1

- Adulteration in Edible oil (Mixing) is mistaken as blending
- Real issue is Mixing of oil which is different than Blending
 - Blending is legitimate process based on science and for consumer benefit
 - Mixing is illegal process and done for profit

Mixing process compromise the safety of product, its illegal, its cheating & should be stopped

Issue # 1

Two types of Mixing (adulteration)

Oil A is added with Low cost oil B and being sold as Oil A

- 1) At Manufacturing level : Mixing in single oil :
Adulteration
- 2) At Retailer : Low cost oil Mixing in loose form :
Adulteration

Mixing and Blending are two different things.

Problem #1: Loose oil Sale

- Despite prohibition as per FSSAI, significant share of edible oil is sold in loose form
- Engaged in large scale mixing of oils through unregulated methods
- Study conducted by Consumer Voice of 1015 loose oil samples
- Quality & Safety is not regulated



Loose oil leads to risk of cancer, paralysis, liver damage & cardiac arrest

Problem #1: Loose oil Sale

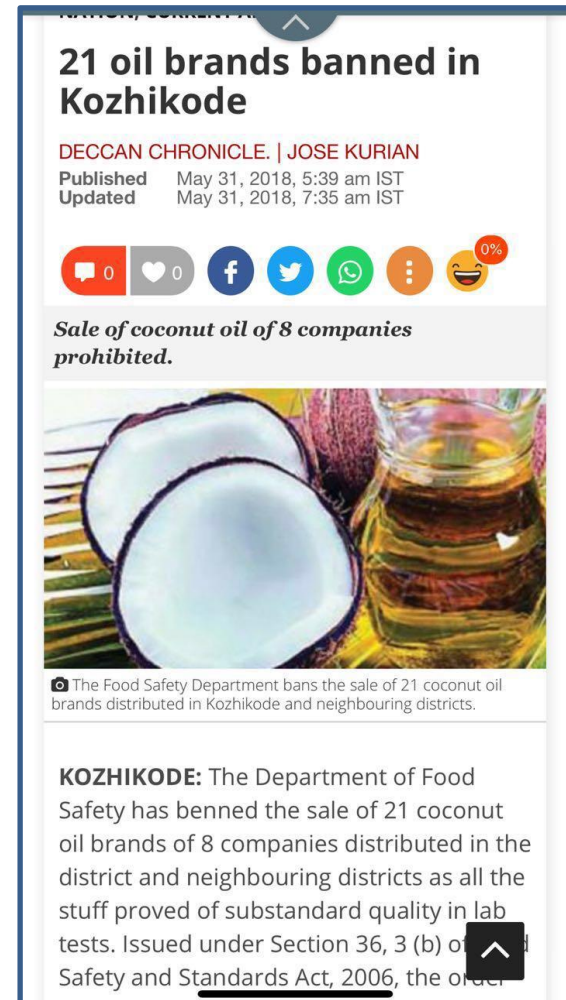
- 85% coconut oil, 74.1% of cotton seed oil, 72% of mustard oil failed to comply with specified standards
- Loose edible oil is prone to adulteration
- Mixing of cheap oil is also considered as Blending and thus legitimate blending is been targeted.



Cheap oil mixing is not a Blending

Problem #2: Mixing in Named oil

- Refined oils can be mixed by mere physical addition.
- Some people mix (adulterate) Low cost oil in costlier oil and sale in named of costlier oil
- General adulterations
 - Refine Palm in coconut /Ground nut/Mustard
 - Low quality Refined Soy/Rice bran/Cotton seed in ground nut/mustard



Mixing Vs Blending

Sr No	Mixing or Adulteration	Legalised Blending
1	Mixing of two or more oils & selling without informing the consumer is adulteration.	Mixing of not more than two oils & selling by informing the consumer as per "AGMARK" regulations is blending
2	Estimated to be around 30% of India consumption	Estimated to be about 2% of India's consumption.
3	Illegal as per FSSAI law.	Legal as per FSSAI law.
4	Objective is to make only profit compromising nutrition/quality/safety	The blending decision is based on improving the nutritional profile /Taste/Frying quality of oil
5	Sold mostly in loose form (though it is illegal as per FSSAI law) which makes prosecution of manufacturer difficult.	Can be sold only in packaged form thus manufacturer can be held liable very easily.

Mixing is Illegal and Blending is legitimate activity

Solution to Arrest adulteration/Mixing

- Increase the surveillance and monitoring on loose and named oil & Blending for purity
- Quality Testing of loose oil and Named oil
 - Quick testing at market using Oak scanner
 - Sending samples to government lab
- Enforcement on loose oil
- Fatty acid Signature of each oil & blend to be checked.
- Consumer awareness

Quick Testing through Raman Spectroscopy

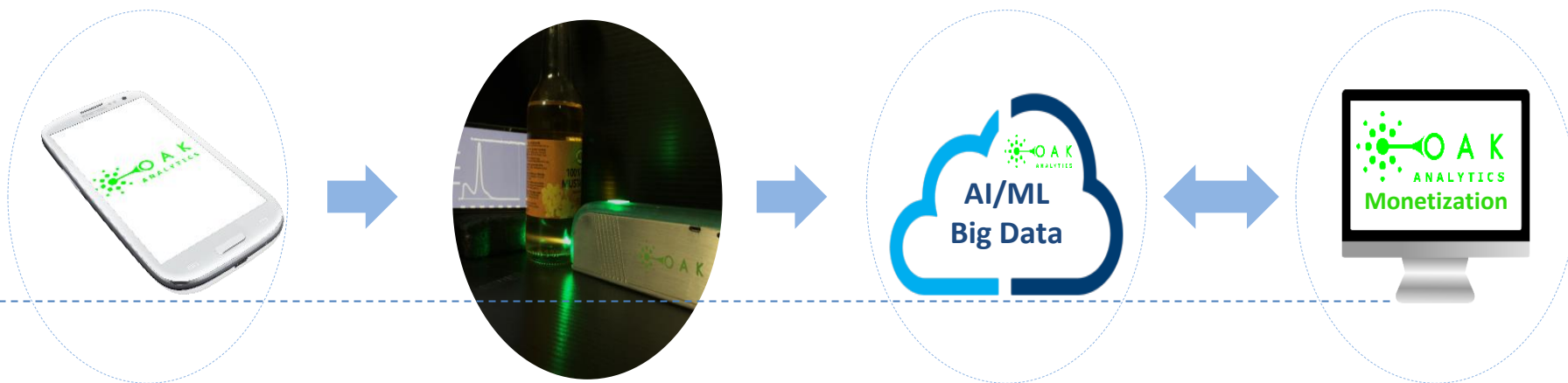
Big data and machine learning to provide instant results

1. Scan barcode to determine product details.

2. Scan product through the bottle/container.

3. Molecular Signature Authentication

4. Monetization of Spectral signatures



Spectral signature
databases of products

M-L based
decision algorithms

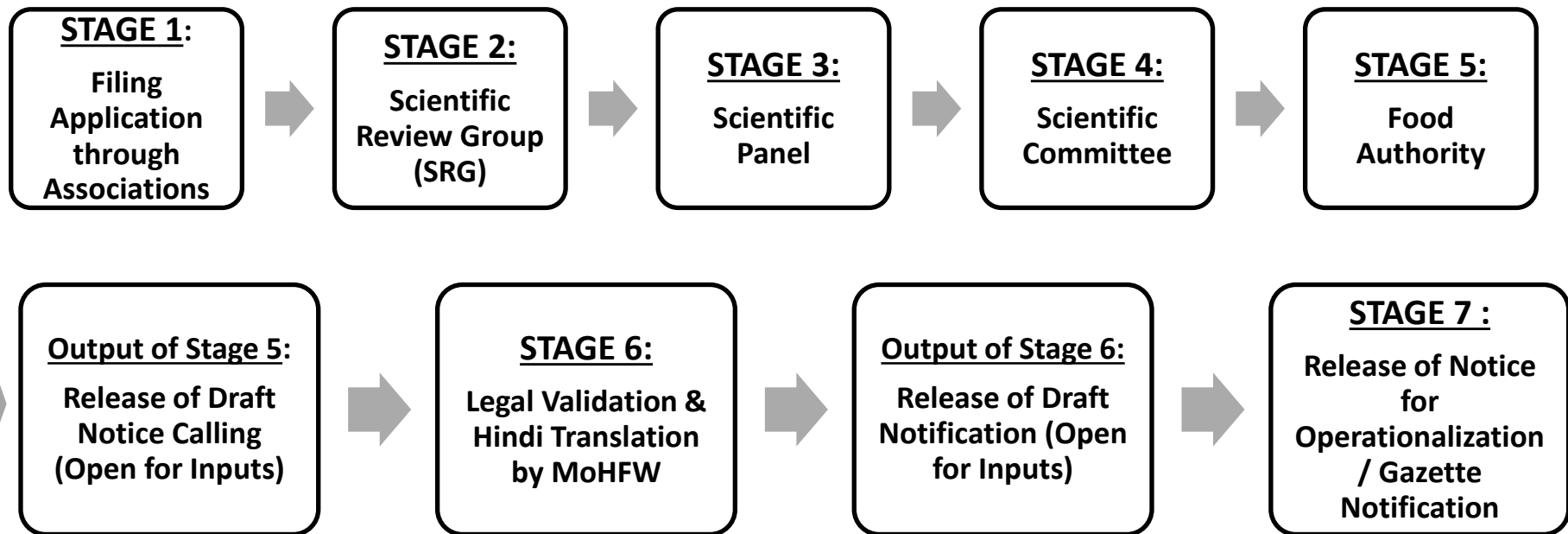
User data:
Who/What/Where/When

REGULATORY PROCESS - FLOW

Flow of Regulatory Process at FSSAI

8 step process at different levels of Authority once application is filed

Timeline required for any regulatory process : Any thing from 1 year to 4 years



How we handled?

FSSA Act Reference

18. General principles to be followed in Administration of Act.

- The Central Government, the State Governments, the Food Authority and other agencies, as the case may be, while implementing the provisions of this Act shall be guided by the following principles namely:-
 - d) the measures adopted on the basis of clause (c) shall be proportionate and no more restrictive of trade than is required to achieve appropriate level of health protection, regard being had to technical and economic feasibility and other factors regarded as reasonable and proper in the matter under consideration;

Our approach

- We took all association in confidence
- Thanks to PFNDAl specially Dr Pai sir and Dr Lewis Sir.
 - PFNDAl/FICCI/CII/AIFPA/SEA
- Technical note
- Met FSSAI officers and presented the case
- Got opportunity to present case at scientific panel
- We convinced the panel and changed the regulation

Case study #1

Refined Oil as Category was attacked



Our Approach

- We prepared (SEA) detailed Technical note
- We represented at all government bodies and FSSAI
- We prepared two videos taking interview of 9 Technical experts and doctors (English and Hindi)
- We conducted regional workshop



Film+1+Story+of+Refining.mp4

Our Response



<https://www.youtube.com/watch?v=Gt7H2LFuICE&t=9s>

Thank You

