

Indian Herbals – Global opportunities

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Time : 16.00 pm to 17.30 pm

Venue: Hotel Marriot, Hyderabad

WORLD HERBAL MARKET

***Global herbal market - 62 billion USD/year**

The Planning Commission of India targets that export of medicinal plant based products to be

Rs. 2.5 billion by 2010

Ref: *Gautam V, et al, Exporting Indian healthcare, (2002), Export-Import Bank of India.
^Times of India September 30, 2002

Contribution of Herbals to Nutraceutical Market

Herbal Dietary supplements	12.53%
Herbal Cosmetics	5.37%
F&B with herbal contents	6.12%
Vitamins and micronutrients	75.98%

The Big Markets of Today

U.S.A	60%
Japan	10%
Australia	10%
Selected parts of Europe	10%
Rest of the world	10%

The scenario is changing with emerging markets like Latin America

Why Indian Herbals ?

- **Strong traditional support- mainly from Ayurveda**
- **Plants used for centuries – safety margin very high**
- **Availability of herbs for variety of indications like sugar/ weight management, cholesterol/ lipid lowering, Energy boosters etc..**
- **Rich Indian biodiversity**
- **Positive government policies towards herbal sector**
- **Herbal Industry in India is increasingly becoming research based**

GLOBAL RECOGNITION FOR INDIAN PLANTS

Scientific publications on many Indian plants are on an upward trend

Researchers in the west are now working on Indian plants

Nutraceutical segment is growing worldwide and people are looking for newer options everyday.

Monographs on Indian herbs are being published in the west

Eg: Monograph on *Withania somnifera* by American Herbal Pharmacopoeia

Knowledge of Ayurveda is being spread due to globalization

International Market of Indian Medicinal Plants

- As crude drugs/raw herbs
- **As standardized extracts**
- As finished formulations (generally polyherbal)
- As phytochemicals / pure isolates

Standardized Herbal Extracts

- **Herbal extracts containing known amounts of active / markers constituents**
- **Expected to ensure consistency in biological activity**
- **Considered as ready raw materials for incorporation in herbal products (nutraceuticals, medicine, cosmetics), food/ beverages etc.**
- **Lower incorporation as compared to crude herbs**
- **Comply to safety tests like pesticides, solvent residues, microbial burden etc. as per international requirements**
- **Supplied in bulk quantities**
- **Ideal for Nutraceutical segment**

Standardized herbal extracts- A view point

Present strenghts

Manufacturing facilities
(GMP compliant)

Safety related QC
Microbial counts
Aflatoxins
Pesticide residues

Animal efficacy studies-
increasing evidence
(Bitter gourd : > 25 publications)

Opportunities

Linking bioactivity of
herbs to its
constituents
(Bitter gourd : active
constituents unknown)

Clinical trials - RCTs

Thorn in the flesh : Regulatory requirements vary from country to country

Case studies : Knowledge of Active constituents

3 Categories

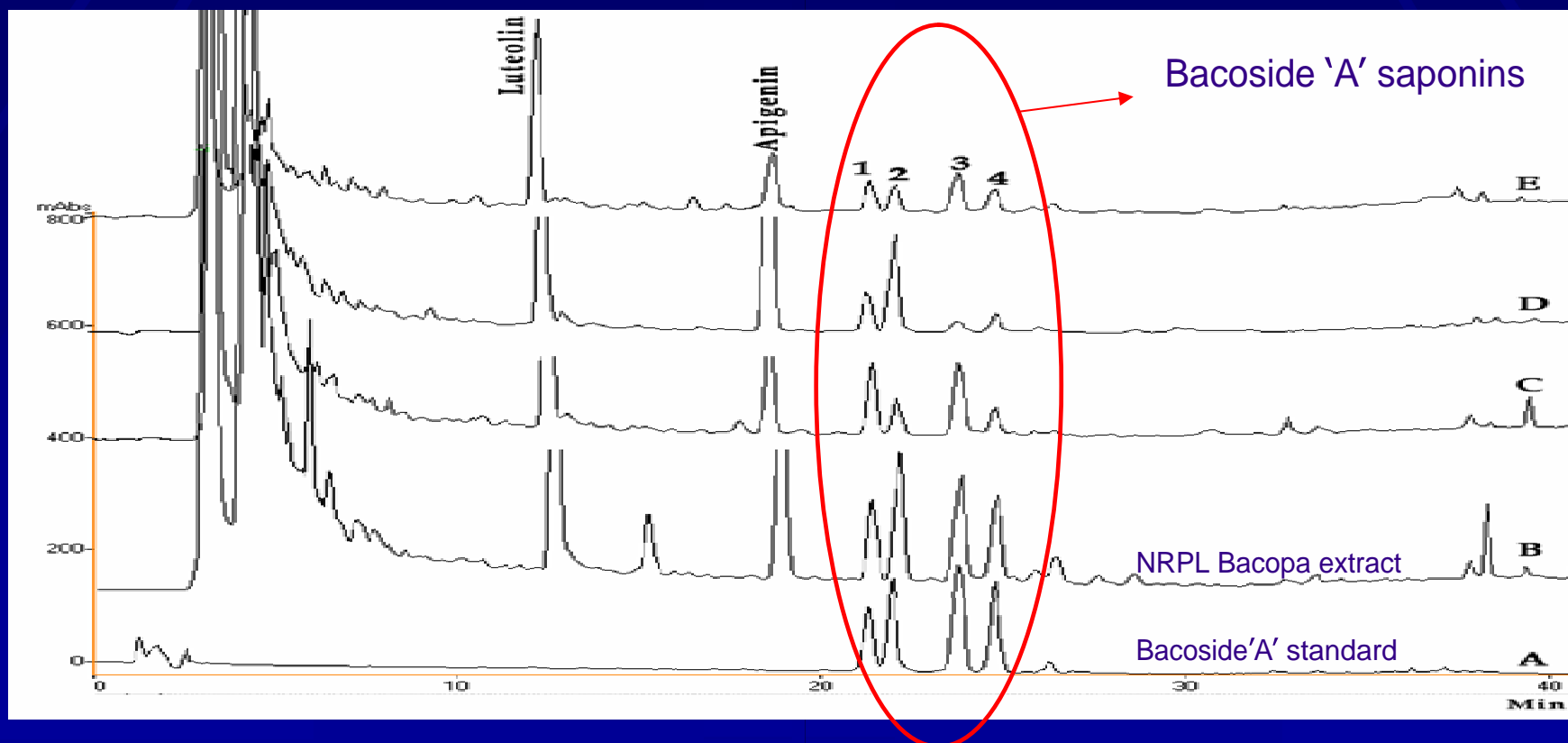
	Typical Example	Main use(s)	Bio-active constituent(s)	Remarks
1	Andrographis paniculata (Kalmeg)	Hepatoprotective	Andrographolid e	Well known & accepted
2	Bacopa monnieri (Brahmi)	Learning & Memory	Bacoside A	Confusion in chemical identification & hence in QC NRPL - Original work
3.	Tribulus terrestris (Gokhru)	Aphrodisiac..... Antirolithiatic..... Anti-inflammatory... Expectorant..... Anthelmintic.....? }? }? }? } Tribulosin →	Bioactive constituents unknown NRPL- Bioactivity guided fractionation

Development of a branded standardised extract of *Bacopa monnieri*

- **Ambiguities in 'bacoside A' structure in the literature**
- **At NRPL 'bacoside A' was found to be a mixture of four saponins**
- **Efficient HPLC method developed.**
- **Geographic variations studied**
- **Unique extraction method for consistent composition.**

HPLC of 'Bacoside A' Saponins in *Bacopa monnieri*

Example of geographic variation



Overview of publications by NRPL on *Bacopa monnieri*

■ Efficacy studies

- Journal of Natural Remedies, 7(1), 166-173
- Journal of Science and Healing (Submitted, under review)

■ Safety studies

- Phytomedicine, 14, 301-308
- Food and Chemical Toxicology (In Press).
- Biomedical and Environmental Sciences (In Press)

Chemistry / Analytical studies

- Phytomedicine, 11, 264-268 (2004)
Phytochemical analysis, 16(1), 24-29 (2005)

Overall, more than 20 research articles have been published by NRPL on various aspects related to *Bacopa monnieri*

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End result :

BacoMind- A standardized extract of Bacopa monnieri

- Backed with **original work** done on
 - Chemistry and quality control
 - Efficacy studies in animals and humans
 - Safety studies in animals and humans
 - Mechanism studies – in vitro
- Patent pending
- **We are able to create a distinction between BacoMind and other unbranded extracts of Bacopa in the market**

Opportunities created for BacoMind

Nutraceuticals

Tea

BacoMind

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graph TD; BacoMind((BacoMind)) --> Nutraceuticals[Nutraceuticals]; BacoMind --> Tea[Tea]; BacoMind --> HerbalMedicine[Herbal medicine]; BacoMind --> FoodUse[Food use  
GRAS status being explored];
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Herbal medicine

Food use
GRAS status being explored

GLOBAL OPPORTUNITIES FOR INDIAN HERBALS

Animal Healthcare segment

In India, herbal animal healthcare market is growing at a faster rate

Herbal products are preferred in many areas due to safety and cost reasons

NRPL is one of the market leaders

Important segments

Poultry

Cattle

Piggery

SOME ESTABLISHED HERBAL PRODUCTS FOR ANIMAL HEALTHCARE

POULTRY :

Product Name	Main use
Zigbir	Natural Performance Enhancer
Natchol	Natural Alternative to synthetic choline chloride
NaturaLiv	Liver tonic and productivity booster
Zist	Complete stress manager
Gout-Ease	Complete solution for prevention and treatment of gout

SOME ESTABLISHED HERBAL PRODUCTS FOR ANIMAL HEALTHCARE

CATTLE :

Product Name	Main use
BucoFert	Oestrus inducer with power of Phytoestrogens
Bucomin- E	Source of trace minerals- enriched with Vitamin E
Topicure Spray	To treat deep seated and maggotted wounds
Involon	Uterine tonic and ecbolic

SOME ESTABLISHED HERBAL PRODUCTS FOR ANIMAL HEALTHCARE

PIGGERY :

Product Name	Main use
Hygestin	Growth promoter
Piggelo	Prevents weaning diarrhea
Topicure	Total topical cure
Zist	For pregnant sows

What more can be done to augment growth of Indian herbal products

- Every country generally has a positive list of plants which can be used.
- Many important Indian plants are not listed in the positive lists... Thus path for entry is blocked.

Other constraints for exporting Indian herbal products

**Need for sufficient scientific information on many plants
(Scientific efforts are required)**

**Need for RCTs
(Clinical trials should be encouraged)**

**Need for standardization and quality control protocols
(Knowledge of active constituents is required)**

**Patent hurdles
(Commodities will get into difficulty)**

**Need for understanding of regulatory requirements of
different countries
(Government help is needed)**

CONCLUSIONS

- Global opportunities for Indian Herbals are on the rise
- Generation of scientific information can help in increasing global opportunities
- Indian companies are investing more in research to en-cash on the global opportunities
- Indian Government to play active part to get Indian medicinal plants approved in various countries



THANK YOU