Specialty Ingredients for Personal Care

Realities of trying to play in a billion dollar industry
What I would like to share with you:

- Introduction
  - CHSNC
  - Bio-Industrial Opportunities Section & AFDP/SCI Initiative
- Global C&PC Markets and Trends
- Botanical Ingredients/Raw Materials - opportunities/challenges
- Overview of Industry Certifications/Standards
- Overview of Regulatory – Health Canada
- Examples of NTFP cosmetic ingredients
- Industry Events/Resources/Key Contacts
CHSNC – Technical Team

- CHSNC -- Canadian Herb, Specialty Ag and Natural Health Products Coalition
  - Alberta Lead on the Technical Team from near the beginning
  - Developed tools, training and compliance
  - Assist with industry/regulatory/policy ongoing support and advice
The Bio-Industrial Opportunities Section of Alberta Agriculture & Forestry plays a significant role in developing Alberta’s bio-economy. The Branch is a unique, integrated team of highly dedicated professionals providing business development & technical services for the bioeconomy.
The three focus areas that frame our Section activities are:

- **New Opportunities** for Agriculture/Forestry processing & production wastes/by-products
- **Maximize value** through fractionation for ingredients & intermediates
- **Facilitate commercialization & market access**

By advancing in these areas, Alberta’s agricultural/forestry economy can increase the value of what it grows, energize rural economic activity & contribute to sustainable development.
Extraction & Fractionation Program
Bio-Industrial Opportunities Section

- Business Development Assistance
- Laboratory to Pilot Scale Process/Product Development
- Analytical Services Support
SCI – Specialty/Renewable Chemical & Ingredients Initiative

Specialty/Renewable Chemical & Ingredients Initiative (SCI) for cosmetic & personal care industry

- New uses for traditional & non-traditional crops, biomass, side/waste streams
- Growth of high value-added bio-based chemical industries
 Alberta Biochemicals Opportunities

**Specialty Chemical/High Value Ingredients**
- Cosmetic and Personal Care Functions
  - Anti-microbial/Anti-inflammatory/Anti-irritant/Anti-oxidant/Anti-aging/Pollution
  - Preservative
  - Solvents
  - Emulsions/surfactants
  - SPF Boosters
  - Thickeners
  - Silicone replacements/styling resins
- Biorefining sidestreams
  - As intermediates for other ingredients
- Industrial and Household Cleaning
  - Surfactants/detergents
- Perfume/Fragrance
- Pharmaceutical/Nutraceutical
- Food and Feed

**Industrial Bio-Based Chemicals**
- Renewable Chemicals for the Oil Patch
  - Drilling muds
  - Surfactants
  - Solvents
  - De-icers
  - Rust inhibitors
- Industrial Chemicals
  - Solvents
  - Coatings
  - Building Materials
Global C&PC Markets

- Estimated global sales of **$675 Billion** (USD) by 2020, market estimated at **$460 billion** (USD) in 2014 - 6.4% CAGR (compound annual growth rate) between 2012-2020
  

- Natural market estimated at $32 billion in 2014

- Natural and organic market fastest growing with the US (~30%), EU and Asia-Pacific leading the growth

- Canadian market for natural personal care products was US $369 million in 2009, Organic Monitor projects market revenues to surpass $600 million in 2016 (7.2 % CAGR)

- Organic market **nearing $11 billion** in 2016 and estimated to grow to about **$22 billion** (USD) in 2024 – CAGR >9% per year

What the Market Wants

• The consumer is KING
• Sustainable and ethical sourcing, zero-waste, green chemistry
• Traceability, direct sourcing and story telling
• **Good Agriculture and Collection Practices (GACPs),** SOPs and other standards
• Consistent supply (quantity, quality and timeliness) and shorter supply chains
• Botanicals – lot-to-lot variation is a major issue, may be result of:
  • Lack of correct botanical identification and authentication
  • Lack of a sustainable, ecologically responsible and economically viable supply chain
  • Lack of knowledge regarding harvesting and growing conditions
• renewable ingredients sourced from sustainable harvesting to prevent the plant species from becoming endangered due to unregulated over harvesting - Convention on International Trade in Endangered Species of Fauna and Flora at [www.cites.org](http://www.cites.org)
Opportunities

• market opportunity for naturally derived ingredients is directly related to increasing global demand for renewable ingredients and biobased chemicals that are green, environmentally safe and sustainably produced – Social Licence
• new, novel multi-functional actives
• Multi-functional ingredients and multiple markets for ingredients
• Some companies enter the high value/small volume C&PC market to provide cash flow while they continue to develop other parts of their portfolio with longer time frames/regulatory to market such as foods, NHPs, pharma or other
• science-based research is paramount
• Social media, beauty blogs, transparency
Opportunities

- Natural plant-based ingredients are highly sought after (premium price is possible, sustainability, environmental factors, safety, ethical reasons, company philosophy)
- Botanical extracts are widely used, mainly as ‘active’ ingredients. Essential oils have a place, but caution of allergens (EU list of 26 special labelling), formulation issues, color, odor, pH
- Global marketplace has made ingredients more international – so important to learn about ingredients that are hot in other parts of the world
- Sustainable packaging and use of recycled materials in packaging
Natural Market Challenges

• Definition of Natural – no legal definition and difficulty in proving a product is natural
• Formulation issues – eg. consistency, color, odor, stability
• Performance key -- Consumers will not sacrifice performance quality for more natural formulations – must be as good or better than standard products
• Product safety/quality – one of biggest issues microbial contamination
• Cost of formulation – natural/organic botanicals often expensive
• Compliance and claims substantiation
• Ingredient suppliers need to demonstrate and prove to their customers the functional uses and benefits of ingredients/extracts and how they perform in formulation - global suppliers need to be aware of how regulations vary across regions and countries.
Challenges

• C&PC formulators and product developers expect ‘raw materials’ to be ‘transformed’ from the raw botanical into a finished ingredient ready to use in the format they need for their formulation.

• Require formulator expertise in natural/organics.

• Limited capacity and capability for ingredient/actives ‘transformation’ – slowly changing.
What the Ingredient Buyer Wants

• A relationship-based industry, something like farming – a personal introduction and handshake goes a long ways
• Also a ‘touch and feel’ industry – somewhat like ginseng – buyers want to touch and feel a sample as the first screen
• Then if they like it – will require the science, safety, efficacy and other details
• Chicken and egg – buyers want to know you are past the pilot/concept stage and are able to provide commercial volumes and constant supply before they will commit
• But new businesses (and often funders) want to know if anyone will buy it before they can commit to production – but buyers won’t commit to purchase unless they are confident of a ready supply and a price they can afford to pay
Tips From Industry

Start-up Finished Product Company:

• Advice – walk before you run, good to start with craft shows, womens shows, farmers markets, etc. to find out more about customers
• Market focus – define target market, determine objectives, determine what you want to achieve and what you can afford
• Experience - started with 1 great skincare product, BUT reality can not do anything with 1 product commercially – need minimum 10 sku’s and a line of products to get into most natural health stores, drug stores, other outlets
• Need good formulator familiar with natural products and contract manufacturer
• Need to work with distributor/retailer
• NPA (Natural Products Association) Certification required in US by natural health stores, Whole Foods, and many others
• Need $1 million and more than 1 product, or don’t start
• Shipping is big cost and challenge
• Often takes at least one year in Canada to get into new market
Tips From Industry

Established Cosmetic Ingredients and Food Company:

• Need in house R&D team to support the sales and marketing effort; in particular R&D formulation - how to use the ingredients in the potential customers’ product lines or develop a new line; at no cost to the customers; find the right technical sales person or sales team who will have the technical skills (for your ingredients).

• Long selling cycle for cosmetic or specialty chemical ingredients:
  • Invisible ingredient replacement 6 – 12 months
  • New product, existing brand 12 – 18 months
  • New brand 18 – 36 months

• New natural preservative(s) for your ingredients; customers might want a different type of preservative and thus need further R&D and formulation work; longer time and more money need to be spent before the 1st order.
Industry Certification/Accreditation

- **Private certification most important decision – before regulations.**

- Lots of confusion about green/natural/organic/ethical certification, seals

- What certification does your buyer want you to have? Are you selling locally, North America, Europe, Asia, globally – that may impact whether you select one or two or more certifications. All have a cost attached!

- Ingredient suppliers/formulators need to be clear about what certification(s) they are trying to meet - there are various natural and organic standards around the world, each with their own accepted inputs, processes and practices.

- Ingredient suppliers/companies who are considering becoming certified may want to manufacture ingredients/products following guidelines from a selected standard to become better prepared if asked for by buyers and/or when the time comes to formalize the certification process.
Certification/Standards for Natural & Organic examples

- **Cradle to Cradle** [www.c2ccertified.org/](http://www.c2ccertified.org/)
- **NPA (Natural Products Association)** [www.npainfo.org](http://www.npainfo.org) represents over 300 products from about 30 brands, has certified more than 1100 products and ingredients since 2008
- **NSF ANSI 305** [www.nsf.org](http://www.nsf.org) companies certified to NSF/ANSI 305 in the U.S. – equivalency with NaTrue for example
- **USDA NOP organic standard** [www.ams.usda.gov/AM Sv1.0/nop](http://www.ams.usda.gov/AM Sv1.0/nop) widely accepted in spite of it being designed for organic agriculture food products - limit certain types of "green chemistry" posing significant challenges for those seeking to create certified organic products.
  - NOTE: food regulations don’t cover many areas of chemistry used in cosmetic ingredient production
- **OASIS "Organic and Sustainable Industry Standards”** [www.oasisseal.org](http://www.oasisseal.org) certified organic content (95%) made with organic minimum of 70%
Certification/Standards for Natural & Organic examples

- **Ecocert**  [www.ecocertcanada.com](http://www.ecocertcanada.com)
  - Raw ingredients and finished products. The validation of the raw material is a main step of the natural and organic certification process according to the Ecocert standard or to the COSMOS standard.

- **Cosmos-standard AISBL**  [www.cosmos-standard.org](http://www.cosmos-standard.org)
  - Internationally recognized standard for organic and natural cosmetics, founded by BDIH (Germany), Cosmebio (Franc), Ecocert Greenlife (France), ICEA (Italy) and Soil Association (UK)


- **Ecolabels** - [www.ecolabelindex.com/ecolabels](http://www.ecolabelindex.com/ecolabels)
Definition of Cosmetic:
• Includes any substance or mixture of substances manufactured, sold or represented for use in cleansing, improving or altering the complexion, skin, hair or teeth, and includes deodorants and perfumes.

• Cosmetic products are subject to the provisions of the [Food and Drugs Act](#) and its [Cosmetic Regulations](#) regarding composition, safety, labelling and advertising. Additionally they are subject to the provisions of the [Consumer Packaging and Labelling Act](#) and [Regulations](#).
3 Mandatory Components

• The three most significant features of the Canadian cosmetic regulatory system are:
  1. Mandatory notification of all cosmetic products
     - A fully completed Cosmetic Notification Form (CNF) must be submitted to Health Canada within the first 10 days that a cosmetic is available for sale.
  2. Product labelling
     - Cosmetic products are required to have mandatory ingredient labelling as per the Cosmetic Regulations.
     - Uses the International Nomenclature of Cosmetic Ingredients (INCI) system of ingredient labelling. INCI names are the names recognized for ingredient labeling purposes in the United States, the European Union, and many other countries.
INCI for Botanicals

- Must apply for INCI through Personal Care Products Council in US
- [http://www.personalcarecouncil.org/sites/default/files/INCIFAQs_0.pdf](http://www.personalcarecouncil.org/sites/default/files/INCIFAQs_0.pdf)
- **Botanicals (Plant-Derived Ingredients)** - For ingredients derived from a botanical source provide:
  
  1. Common name of plant.
  2. Plant part from which the material is derived.
  3. Latin binomial (genus and species) of the plant.
  4. Type of preparation, eg, extract, juice, oil, wax, gum, resin. For extracts, please include the extracting solvent.
  5. Any solvents or diluents present in the material as sold for use in a finished product.
  6. For specific compounds isolated from a botanical source, method of isolation must be provided along with % of purity of the isolated compounds.
INCI Examples

• UL Prospector
  www.ulprospector.com/en/na/PersonalCare

• INCI Name – examples of NTFP
  • Populus Tremuloides Bark Extract
  • Salix Nigra (Willow) Bark Extract
  • Myrica Gale Flower/Fruit/Leaf/Twig Extract
  • Myrica Gale Leaf Water

• CAS No. - Chemical Abstracts System numbers
• Unique numerical identifiers for chemical elements, compounds, polymers, biological sequences, mixtures and alloys
• EINECS – European Inventory of Existing Commercial Substances
3rd Mandatory Component

3. Safety of ingredients and products – GMPs

• GMPs are manufacturing guidelines which are used to ensure product quality control and an effective approach to risk management. These guidelines set out standards for product manufacturing, testing, storage, handling and distribution, to ensure that each step of manufacturing is acceptable for quality and safety of the product.

• GMPs do not provide specifics on how products are to be manufactured. Instead they outline the expected outcome of the processes. Each manufacturer, large or small, may have a unique means of achieving these outcomes.

Cosmetic-Drug Interface

- These products share the characteristics of both cosmetics and drugs as defined in the Food and Drug Act, making them more difficult to classify. Such products may include for example acne therapy, anti-perspirants, dandruff products, medicated skin products, diaper rash products, sunburn protectants, skin and teeth whiteners.

- In Canada, a product at the cosmetic-drug interface (PCDI) can be regulated by one of three sets of regulations under the Food and Drug Act depending on their ingredients and on the claims they make.
  - Cosmetic Regulation
  - Food and Drug Regulation
  - Natural Health Product Regulation
Information for Industry and Professionals: Cosmetics and Personal Care Products

• Health Canada works closely with industry and professionals to regulate and promote the safe use of cosmetics and personal care products that are made for distribution and for retail in Canada.

Cosmetic Ingredient Hotlist

• an official list of prohibited and restricted cosmetic ingredients by HC
• EU list of prohibited substances 1328

Subscribe to Cosmetics @ Health Canada

• Subscribers receive updates when new information, consumer advisories and warnings, product recalls, and consultation documents regarding cosmetics and personal care products are posted on the Health Canada Web site.
Consulting Canadians on the Regulation of Self-Care Products in Canada

• Health Canada is proposing a new regulatory system that is ‘risk-based’ and is expected to streamline the cosmetics, NHPs and OTC regs. HC Consultation closes on October 24, 2016

• PLEASE take the opportunity to provide comments. Go to:
  
Contact Health Canada

Contact the closest regional Product Safety Program Office:

Health Canada, Suite 16251505 Barrington Street, Halifax, Nova Scotia  B3J 3Y6
E-mail: Atlantic.Prodsafe@hc-sc.gc.ca
Email: Cosmetic@hc-sc.gc.ca
Phone: 1-866-662-0666

www.hc-sc.gc.ca/cps-spc/cosmet-person
RULE of THUMB

• Whether imported, exported or made within the country, cosmetics **MUST** be in compliance with the provisions of the regulations of the country of sales, and may also need to be in compliance with the regulations with the country of manufacture.
Few NTFP Botanical Examples

Various Tree Bark residuals, others (Bio ForeXtra)

Epilobium Angustifolium

Gaultheria Procumbens (Wintergreen), others
http://www.activeorganics.com/products/actiphytes/
Industry Events

- **in-cosmetics Global** - Leading global business platform for personal care ingredients – April 4-6, 2017 London UK (~10,000; +700 exhibitors; + 130 countries  
  (www.in-cosmetics.com)
- **The New York Society of Cosmetic Chemists (NYSCC) Suppliers Day** – May 2-3, 2017 Javits Convention Centre NY  
  (www.nyscc.org/index.html) is the biggest tradeshow of its kind in North America in the cosmetic specialty chemical/green chemistry/ingredient space.
- **California SCC Suppliers Day** - October 25 & 26, 2017 Long Beach (every 2 years)
- **Organic Monitor** (www.organicmonitor.com) - research/consulting/events
- **Sustainable Cosmetics Summit** – North America, Europe, Latin America, Asia-Pacific
Selected Cosmetics and Personal Care Industry Resources

Health Canada – Cosmetics and Personal Care
U.S. Food and Drug Administration - Cosmetics
EU – Cosmetics - COSING
Society of Cosmetic Chemists – Quebec & Ontario Chapter
Canadian Cosmetics, Toiletry and Fragrance Association
Personal Care Products Council
*Organic Monitor
*Cosmetics & Toiletries - International Magazine of Cosmetic Technology
*HAPPI - Household and Personal Products Industry Magazine
Global Cosmetic Industry
Nutrition Business Journal
Breaking news on cosmetics formulation and packaging in Europe
Breaking news on cosmetics formulation and packaging in North America
Inside Cosmeceuticals - A source for market trends, research and innovative cosmetic and personal care formulations and applications
Thank You!

www.agriculture.alberta.ca/bio-industrial

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