

PLANT STEROLS AND STANOLS IN FOOD AND PHARMACEUTICALS

STRATEGIES TO GROW YOUR BUSINESS

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In this case study, CPL Business Consultants examined the markets for plant sterols (phytosterols) and stanols for a global ingredients company. Given CPL's experience in this market, the client gained authentic insights and accurate information which was otherwise not available in published reports.

Plant sterols (phytosterols) are naturally occurring substances present in diets largely as minor components of vegetables. Conversely, plant stanols (phytostanols) are hydrogenation compounds of plant sterols and occur in nature at a lower level. The plasma cholesterol-lowering properties of plant sterols have been known since the 1950s. Therefore the markets for plant sterols and stanols include food ingredients for heart health (cholesterol-lowering) and also intermediates in pharmaceutical production.

Objective & Scope

This study assisted a client in understanding the commercial demand for plant sterols and stanols derived from wood and vegetable oils.

Method

CPL used a combination of desk based-research and interviews by telephone, face-to-face meetings, and meetings at trade shows. The contacts included key market participants across the value chain, including purified sterols manufacturers, ingredient manufacturers, and also end users. This, therefore, provided additional perspectives about the current market supply and demand conditions – and their likely developments over the next five years.

In particular, CPL obtained specific insights about the requirements/demand for plant sterols for use in pharmaceuticals and food applications – and the market dynamics for the supply of purified sterols.

A summary of the report is provided below.

PLANT STEROLS AND STANOLS IN FOOD AND PHARMACEUTICALS

The detailed report on phytosterols and phytostanols was 155 pages long and contained the following sections:

Executive Summary

- Objective
- Method
- Principal Findings
 - Sterol and Stanol Industry Structure
 - Market Supply Analysis for Plant Sterols and Stanols
 - Market Demand Analysis
 - Pharmaceutical Applications
 - Food Applications
- Conclusions
- Recommendations

Introduction

- Sterols and Stanols
 - Properties of Plant Sterols, Stanols and their Esters
 - Production of Plant Sterols
 - Production of Plant Stanols from Plant Sterols
 - Production of Plant Sterol and Plant Stanol Esters
 - Plant Sterols and Stanols Regulations
- Plant Sterols Industry Structure
 - Sterol Manufacturers
 - Ingredient Manufacturers
 - End-Users

Markets for Sterols and Stanols

- Supply of Purified Sterols
 - Pure Plant Sterol Market Supply Estimates
- Demand for Sterols/Stanols and Their Esters
 - Food Ingredients
 - Pharmaceuticals

Market Applications for Sterols and Stanols

- Current Food Applications
 - Penetration Rate of Phytosterols in Food Products
 - Water Dispersible and Encapsulated Sterols
 - Further Reasons for Consuming Phytosterols
- Dietary Supplements
- Cosmetics and Personal Care Applications
- Pharmaceuticals

- Security of Sourcing and Alternative Potential Sources of Phytosterols
- Major Hormone API Classes from Intermediates and their Synthesis
- Future Prospects if Considering Supplying into Pharmaceuticals

Sterol and Stanol Players and Products

- Suppliers of Pure Sterols
 - 8 Manufacturers
- Selected Food Ingredient Manufacturers
 - 6 Manufacturers

Contacts

- Summary
 - Market & Key Success Factors
 - Players, Products & Strategy
 - Raw Material Sources, Prices, Applications & Buying Criteria for Sterols
- Reports
 - 16 Contacts

News

- Summary
 - Phytosterol and Phytostanol Market
 - Players & Products
 - Regulatory & Health Claims
- Articles
 - 28 Articles

Appendix

- CPL Q&A

Tables

- COMPOSITION OF CRUDE AND REFINED VEGETABLE OILS
- GLOBAL PURIFIED PLANT STEROL MARKET SUPPLY ESTIMATES
- GLOBAL PURIFIED PLANT STEROL MARKET DEMAND ESTIMATE – FOOD
- GLOBAL PURIFIED PLANT STEROL MARKET DEMAND ESTIMATE – PHARMACEUTICALS
- SUMMARY OF KEY PLAYERS IN PHYTOSTEROLS
- MARKET SIZE AND CAGR FOR FUNCTIONAL FOODS MARKET, BY COUNTRY
- HOUSEHOLDS PURCHASING FOOD PRODUCTS WITH ADDED PHYTOSTEROLS BY COUNTRY
- FREQUENCY OF PURCHASE AND INTAKE OF PHYTOSTEROLS IN WESTERN EUROPE

- TOTAL AMOUNT AND %PHYTOSTEROLS PURCHASED PER FOOD CATEGORY BY COUNTRY
- EXAMPLES OF STEROID DRUGS AVAILABLE ON THE MARKET (GLOBAL)
- XXX GROSS REVENUE BY DIVISION
- XXX OPERATING PROFIT BY DIVISION
- CHARACTERISTICS AND SPECIFICATIONS OF STEROLS FROM XXX
- SALES BREAKDOWN WITHIN THE PERFORMANCE PRODUCTS SEGMENT
- NUTRITION & HEALTH – SALES BY REGION
- SPECIFICATIONS FOR XXX'S STEROL PRODUCT
- FORMATS OF XXX PRODUCTS, WITH SPECIFICATIONS AND APPLICATIONS
- XXX NUTRITIONAL INFORMATION
- XXX NUTRITIONAL INFORMATION
- EVALUATION OF THE EU REQUIREMENTS FOR XXX VS XXX'S SPECIFICATIONS
- PHYSICOCHEMICAL CHARACTERISTICS
- PLANT STEROL PROFILE (BASED ON 100% STEROLS)
- NUTRITIONAL INFORMATION
- COMMERCIAL CONDITIONS AND EX-WORKS VALUE (USD) FOR XXX's PRODUCTS

Figures

- STRUCTURE OF COMMON PLANT STEROLS, CHOLESTEROL AND A PLANT STANOL
- CHEMICAL STRUCTURE OF PLANT STANOLS AND PLANT STEROLS
- PINE CHEMICALS BIO-REFINERY PROCESS
- TYPICAL PROPORTIONS OF CTO DISTILLATION PRODUCTS
- STEROLS IN CHOLESTEROL REDUCTION
- PLANT STEROL INDUSTRY VALUE CHAIN
- PURIFIED PLANT STEROL KEY SUPPLIER MARKET SHARE ESTIMATE
- GLOBAL PURIFIED PLANT STEROL SUPPLY VOLUME ESTIMATE
- GLOBAL PURIFIED PLANT STEROL SUPPLY VOLUME ESTIMATE
- DEMAND FOR API'S
- TOTAL ANNUAL GLOBAL SALES STEROID DRUGS
- ANNUAL GLOBAL STEROID DRUG SALES GROWTH RATES (%)
- PHYTOSTEROL RAW MATERIAL SOURCING (GLOBAL)
- STEROID SYNTHESIS ROUTE FROM OIL AND WOOD PHYTOSTEROLS FOR API PRODUCTION
- STEROID SYNTHESIS ROUTE FROM DIOSGENIN
- XXX'S ENRICHED OMEGA-3 EGGS
- XXX'S PHYTOSTEROL-CONTAINING SPREAD (AUSTRALIA)
- XXX'S SPREAD AND FLAVOUR VARIANTS
- XXX'S OATMEAL SQUARES, INCORPORATING XXX PLANT STEROLS
- FULL RANGE OF APPLICATIONS INCORPORATING XXX'S PHYTOSTEROL
- XXX OMEGA PLUS XXX
- XXX'S XXX WITH ADDED PHYTOSTEROLS
- XXX'S XXX UHT MILK WITH PHYTOSTEROLS AND OMEGA 3 FROM XXX
- EXAMPLE DIETARY SUPPLEMENT PRODUCT CONTAINING PHYTOSTEROLS
- XXX CARDIO FORMULA WITH PHYTOSTEROLS

- FXXX INGREDIENT CONTAINING STEROL ESTERS
- PHARMACEUTICAL API PRODUCTION: CONVERSION FOR ANNUAL DEMAND
- TESTOSTERONE ANABOLIC STEROID; XXX
- DIOSGENIN (CAS NO 512-04-9)
- IMPORTANT STEROIDAL HORMONES
- SCHEMATIC REPRESENTATION OF THE BIOGENESIS CASCADE OF STEROIDAL HORMONES
- IN VIVO CONVERSION OF ANDROST-4-ENE-3,17-DIONE (AD, 11) TO ESTRADIOL
- DIAGRAMMATIC SUMMARY OF STEROID INTERMEDIATES OBTAINED FROM STEROLS
- MAJOR PATHWAYS FOR MICROBIAL HORMONAL STEROID PRODUCTION
- COMPLEXITY OF THE PRODUCTION PROCESS OF PHARMACEUTICAL INTERMEDIATES AND API'S
- FEATURES, FORMATS & APPLICATIONS OF XXX RANGE
- NUTRITION & HEALTH – SALES BY REGION
- XXX SALES BY DESTINATION

ADDITIONAL PROJECTS

In addition to this project on plant sterols and stanols in food and pharmaceuticals, CPL has worked on e.g. an updated [report on phytosterols](#), a similar [project in food ingredients](#) and on a [market growth outlook](#). Have a look at our [PowerPoint Introduction](#) and Brochure describing deliverables, differentiators and case studies. You can also review [eight case studies](#).