

GLOBAL HEMP MARKETS

Ministry for Primary Industries
Manatū Ahu Matua

Economic Intelligence Unit



Ministry for Primary Industries
Manatū Ahu Matua



DISCLAIMER

While care has been used in compiling this document, the Ministry for Primary Industries do not give any prediction, warranty or assurance in relation to the accuracy of or fitness for any particular purpose, use or application of any information contained in this document. To the full extent permitted by law, Ministry for Primary Industries nor any of its employees, shall not be liable for any cost (including legal costs), claim, liability, loss, damage, injury or the like, which may be suffered or incurred as a direct or indirect result of the reliance by any person on any information contained in this document.

AIMS & METHODOLOGY



Aim

- The aim of this report is to identify potential market opportunities for New Zealand producers of hemp and hemp products.

Approach

To understand the opportunities for New Zealand hemp producers we undertook the following approach:

1. **Identification of markets:** Utilising a range of tools, we assessed consumer search interest, market activity for hemp products, and investment in cannabis firms to identify the range of markets for hemp products. Market identification enables the targeting of markets where consumers are responsive to hemp products.
2. **Identification of product categories:** We examined what hemp related products were launched across a range of markets. This allows New Zealand producers to reduce product development risk by targeting product categories and product types where the proof of concept has been demonstrated. Further analysis of launched products identified categories and markets where there is a significant activity.
3. **Deep dives in selected markets and products:** We examined selected markets and product categories in detail to determine future growth prospects, identify relevant market factors, and determine potential sales distribution. This will support market selection and highlights avenues for potential partnerships with final product producers or distribution channels.

SOURCES



Investment

- Investment data was gathered through Crunchbase, an external investment service that tracks firms receiving venture capital investment.
- Firms tracked were those containing the keyword cannabis, either in name, description, or categorisation. This provided a greater sample size over other keywords.
- Firms were classed according to their industry category. The cannabis category was excluded from this, as the vast majority of firms were in this category. Firms could class themselves as more than one category.

Search Interest

- Search interest was determined using Google Search analytics tools. This allows the tracking of specific topics of consumer interest.

Category Data

- Category data was gathered through Euromonitor, an external economic service that collects global economic data.

Literature Review

- Background information was collected through an open source literature review examining news articles, academic journals and business information.

Product Launches

- Product launch data was gathered through Mintel, an external service that tracks firms' new product launches.
- Products tracked were those containing the keyword "Hemp" as an ingredient.
- This allows the tracking of brand and market sizes, trends in claims and product formats, and pricing.

KEY FINDINGS



- 1. The United States is the most active market for hemp products.** The United States (US) should be a target market for New Zealand hemp producers. The US has the largest number of firms active in the hemp space (75%), and has received the second largest share of venture capital funding. The US shows strong consumer engagement in search prevalence for hemp related products. In addition to this, the US had the most releases of hemp products, and a disproportionately large share of hemp products (26.90% of new hemp products launched 2012-2017, compared to 8.9% of all retail products).
- 2. Skincare is the dominant product category for hemp products.** This is followed by bath & shower products, other beverages (mostly protein supplements), and hair products as the categories with the most hemp activity in the US. Of these, skin care is the ideal first target, having the greatest total US value (18.4 Billion USD), and the highest forecast growth (4.8% compound annual growth rate (CAGR)).
- 3. Products emphasise different attributes in their marketing strategies.** While skincare leads its marketing with flavour, hair care and beverages (protein supplements) focus on function. Bath & shower products use a combination of the methods.
- 4. Body skincare, bath & shower products, and protein supplements are high activity sub-categories.** The protein supplements category alone has a forecast CAGR of 8.6% for 2017-2022 in the US, and would be an ideal first food and beverage target.
- 5. Healthcare & biotechnology firms are receiving significant investment.** This reflects the drive towards medicinal use of cannabis. Investment is also flowing to software for business management and marketing for hemp producers. Investment now indicates that there is likely to be substantial commercial activity in this space in the future.
- 6. The US and Canada dominate consumer interest searches for general hemp products.** But interest in hemp fibre is led by Asia and interest in cannabidiol (CBD) pharmaceutical products is led by a number of small, high-income countries, for example, the United Arab Emirates (UAE).

CONTENTS



MARKET ANALYSIS

08 GLOBAL INVESTMENT

09 INVESTMENT BREAKDOWN

10 PRODUCT LAUNCHES

MARKET SELECTION

12 PRODUCT MARKETS

13 MARKET INVESTMENT

14 CONSUMER AWARENESS

PRODUCT ANALYSIS

16 PRODUCT CLAIMS

17 PRODUCT CATEGORIES

19 BEAUTY AND PERSONAL CARE

22 NUTRITIONAL SUPPLEMENTS

CASE STUDIES

25 CANOPY GROWTH

26 HEMPZ

27 OTHER CASE STUDIES

MARKET ANALYSIS



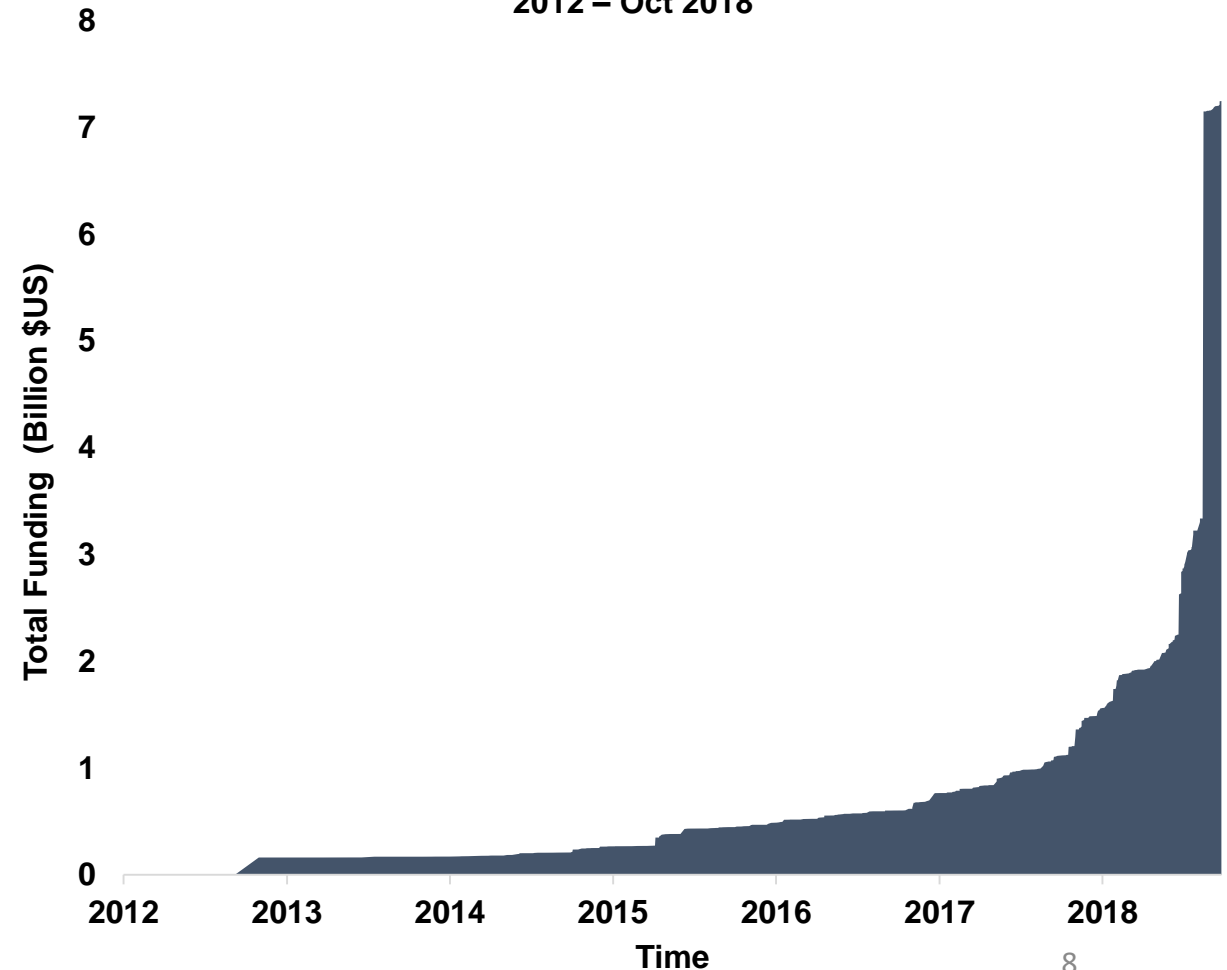
GLOBAL INVESTMENT

Venture Capital investment in cannabis is growing

- Visible venture capital funding of companies in the cannabis industry is growing rapidly, reaching over \$7 Billion United States dollars (USD) in September 2018. A large part of this was driven by a single, \$3.8 Billion USD funding round in August 2018 for Canopy Growth (see page 25).
- From 2013 to 2017, annual investment has grown every year, with a compound annual growth rate (CAGR) of 209%. This is driven by a higher number of larger funding rounds. With each investor making on average 2.3 investments in cannabis firms and 33% of firms receiving multiple rounds of investment, there is significant investor confidence in the market.
- In 2013 there were 10 rounds of venture funding for companies in the cannabis industry, compared to 136 in 2017. Average investment size has increased from approximately \$1.4 Million USD in 2013 to 7.3 Million USD in 2017. The average size of a sample of 1000 investments in this period was approximately \$61 Million USD, indicating that funding size will likely continue to grow. New Zealand firms operating in the industry will likely require investments of scale to be competitive in the market.

Total Funding for Cannabis Companies

2012 – Oct 2018



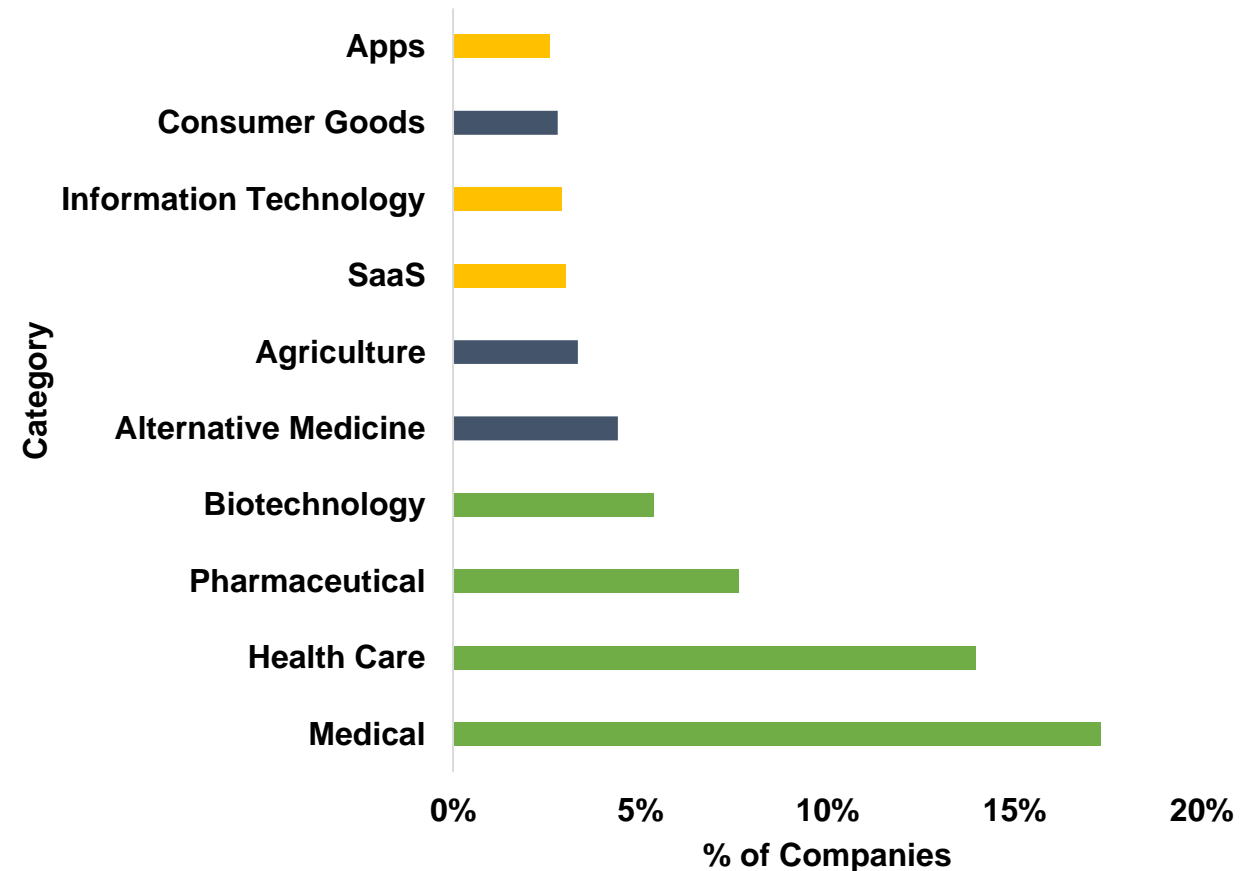
Source: Crunchbase

INVESTMENT BREAKDOWN

There is significant activity in healthcare

- Categorisation of cannabis firms shows that there is significant activity in the medical field by cannabis firms. The top four categories for firms receiving investment were all biology based, health-related categories. This reflects a global interest in therapeutic compounds that can be extracted from cannabis, and indicates that firms are able to demonstrate enough viability for these products to attract investment.
- After this, the most common categories were software and technology based, aimed at supporting cannabis firms. This indicates that the emerging hemp industry is not gradually developing like established industries have over time, but rather incorporating current disruptive trends (e.g., E-commerce, Internet of Things (IoT)) from the outset.

Biology and Software are Key Firm Categories
Oct 2018

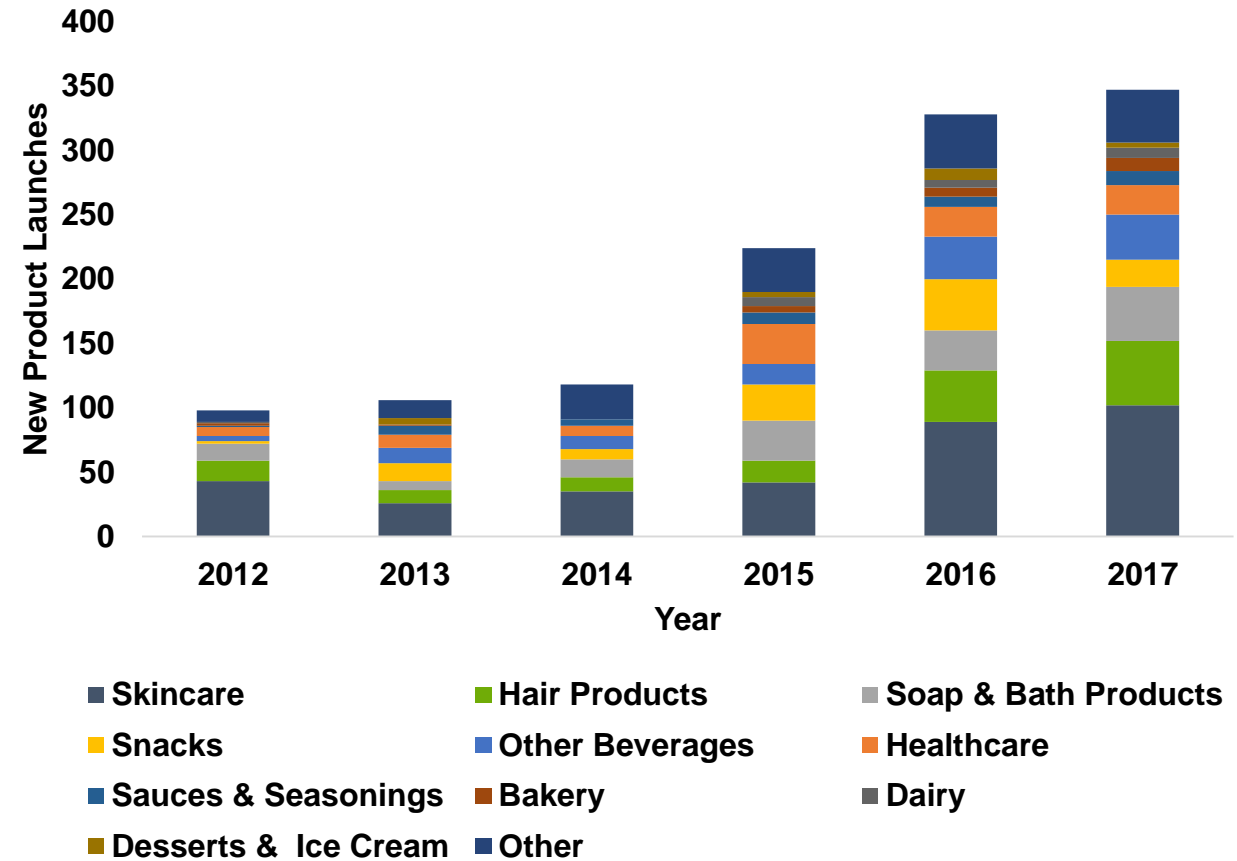


PRODUCT LAUNCHES

Product launches show Hemp category growth

- The number of new hemp retail products launched globally has increased consistently from 2012, with 347 new products being launched globally in 2017.
- The rate of new hemp product launches has grown at a CAGR of 29% over this period. This is compared to a CAGR of 7.5% for new products in global retail markets as a whole, demonstrating that the hemp industry is showing genuine growth, rather than just matching global growth from growing economies and populations.
- Beauty and personal care products are the largest group of products launched with skincare being the dominant product launch category over the last six years. Food and beverage products are the next largest group of product categories.

Global Hemp Products Launched By Year
2012 - 2017



Source: Mintel

MARKET SELECTION

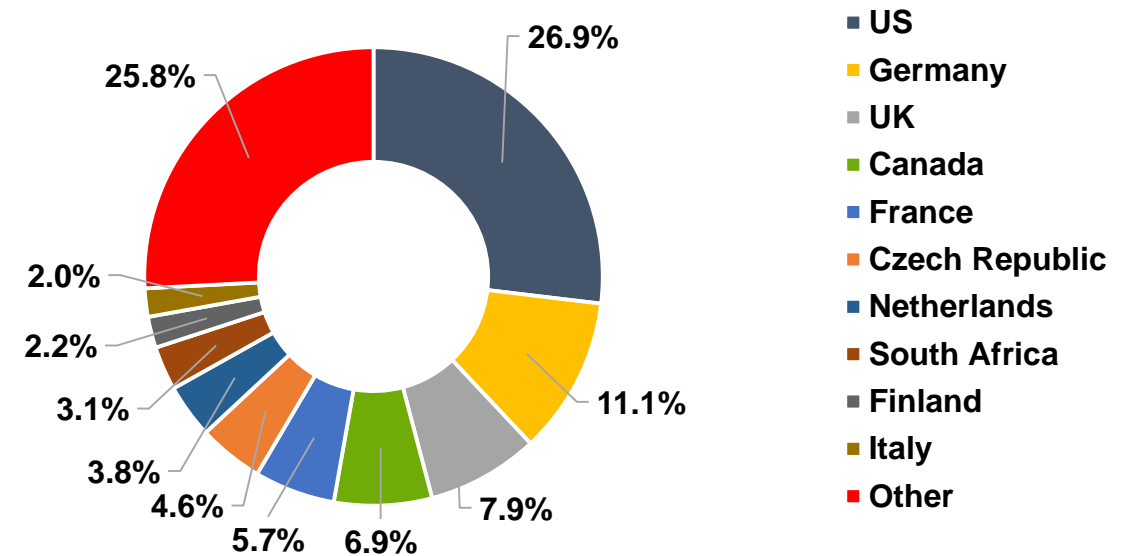


PRODUCT MARKETS

The US is the key product launch market

- The US is a key market for hemp products, and is where 27% of new hemp products were launched over the period of 2012-2017. High-income, industrialised Western countries, including Germany, Canada, and the United Kingdom, round out the other significant active markets for hemp products.
- The US is the market with the greatest activity with the largest number of hemp products entering the market and a disproportionately large amount of new hemp products being released. The geographic proximity of the US to Canada, another active market, suggests a North American regional business approach may be a viable option.
- Product launches follow trends around the relaxation of regulation surrounding hemp/cannabis products. The five largest retail markets are all countries that have legal hemp cultivation. This suggests that local markets are a common first target for hemp cultivators, and results in a high proportion of hemp products in these markets, relative to other products, as countries that legalise products first are able to develop their market first.

New Hemp Product Launches by Country
2012-2017



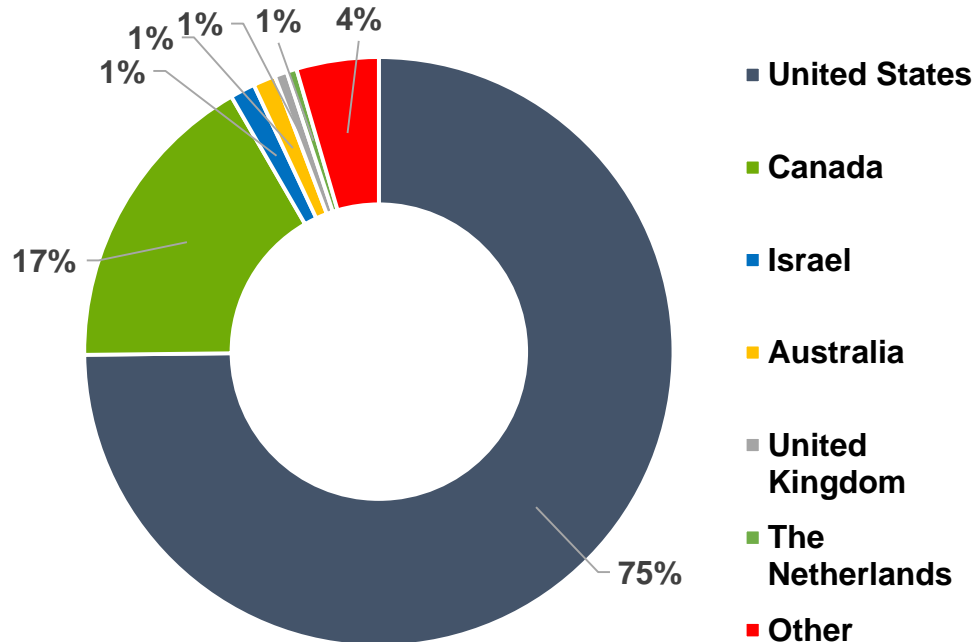
Country	US	Germany	Canada	UK	France
Proportion of hemp product launches	26.90%	11.1%	6.9%	7.9%	5.7%
Proportion of all product launches	8.90%	6.10%	3.60%	5.80%	5.60%
Ratio of hemp proportion to all products proportion	302%	182%	192%	136%	102%

MARKET INVESTMENT

Firms are concentrated in North America

- Firms operating in the cannabis market are concentrated in North America, representing approximately 92% of firms in the industry. This largely matches the distribution of cannabis legalisation, an adjacent sector, which allows greater scale for firms growing plants of the cannabis species.

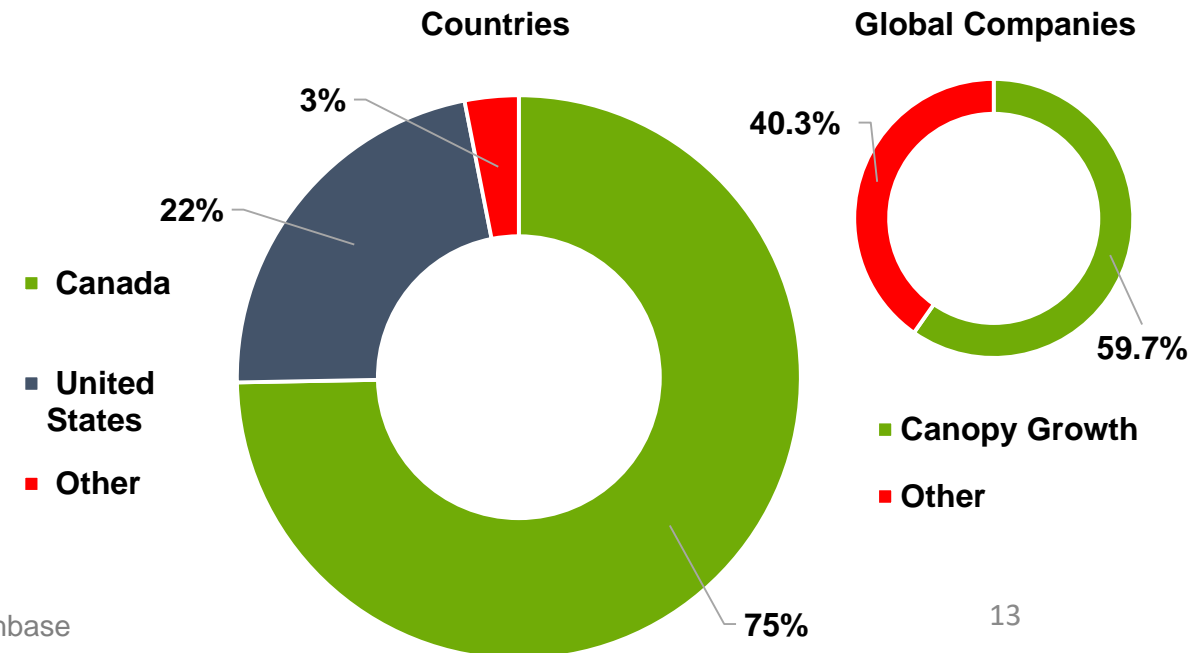
Cannabis Firms by Country



Venture funding is concentrated among Canadian firms

- Despite having 17% of the firm count, Canada received 75% of the venture capital funding of cannabis firms. This is distorted by Canopy Growth, a firm based in Canada, which has received 59.7% of global investment in cannabis firms. Aside from Canopy Growth, Canadian firms are slightly better funded than US firms, potentially as a result of recent legalisation.

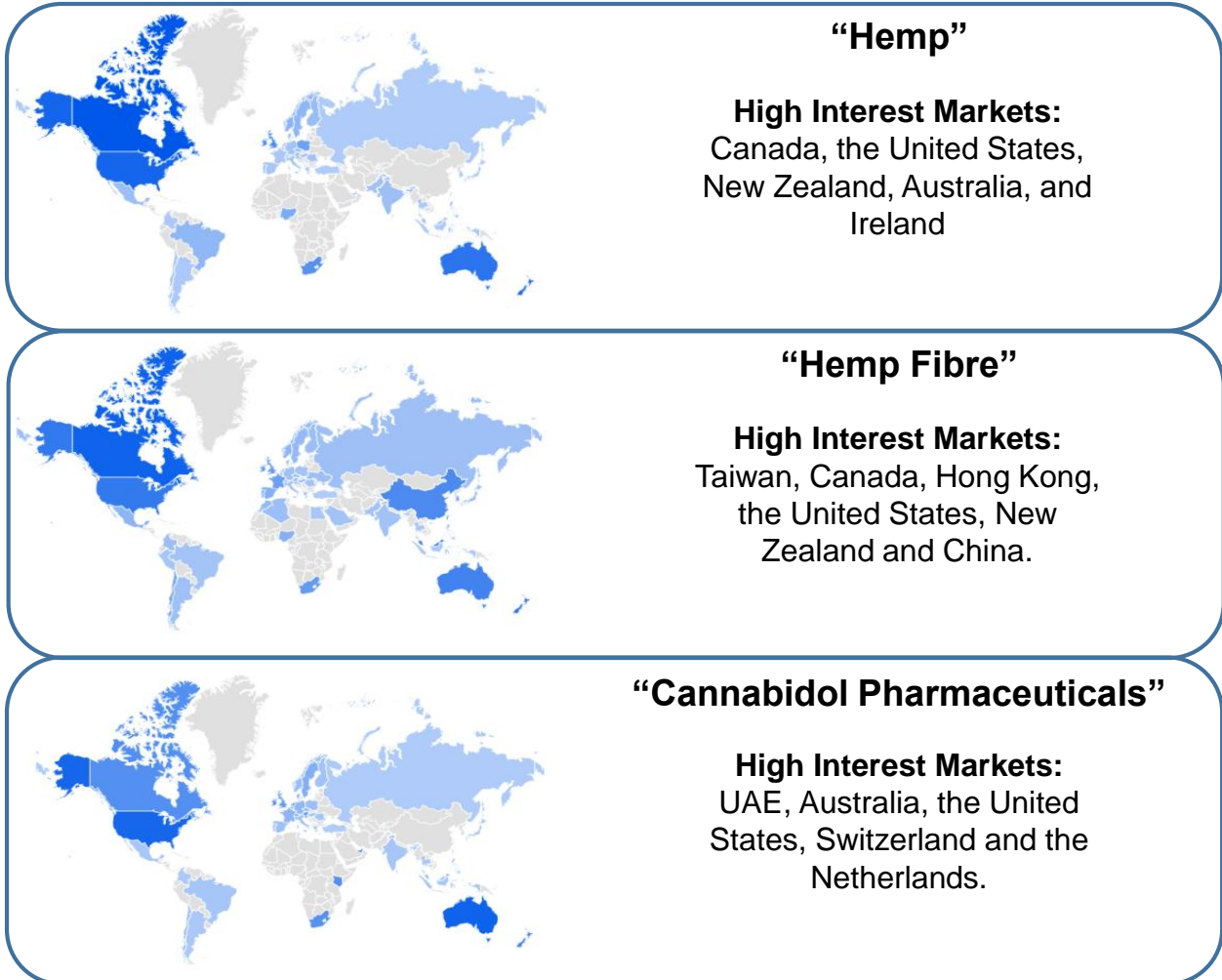
Global Venture Funding by Country and Company



Source: Crunchbase

CONSUMER AWARENESS

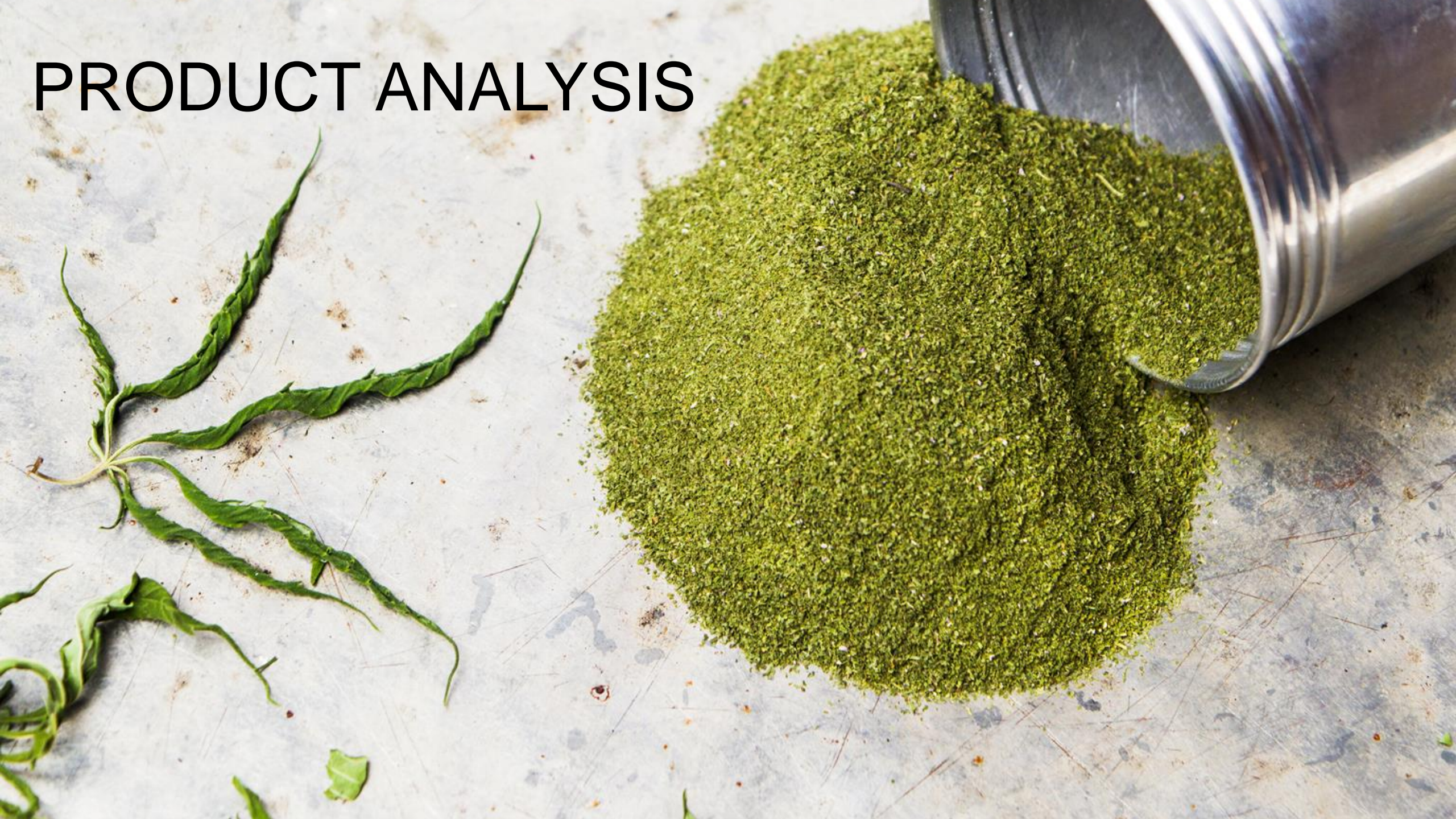
Relative search interest by market



Search interest in hemp identifies key markets

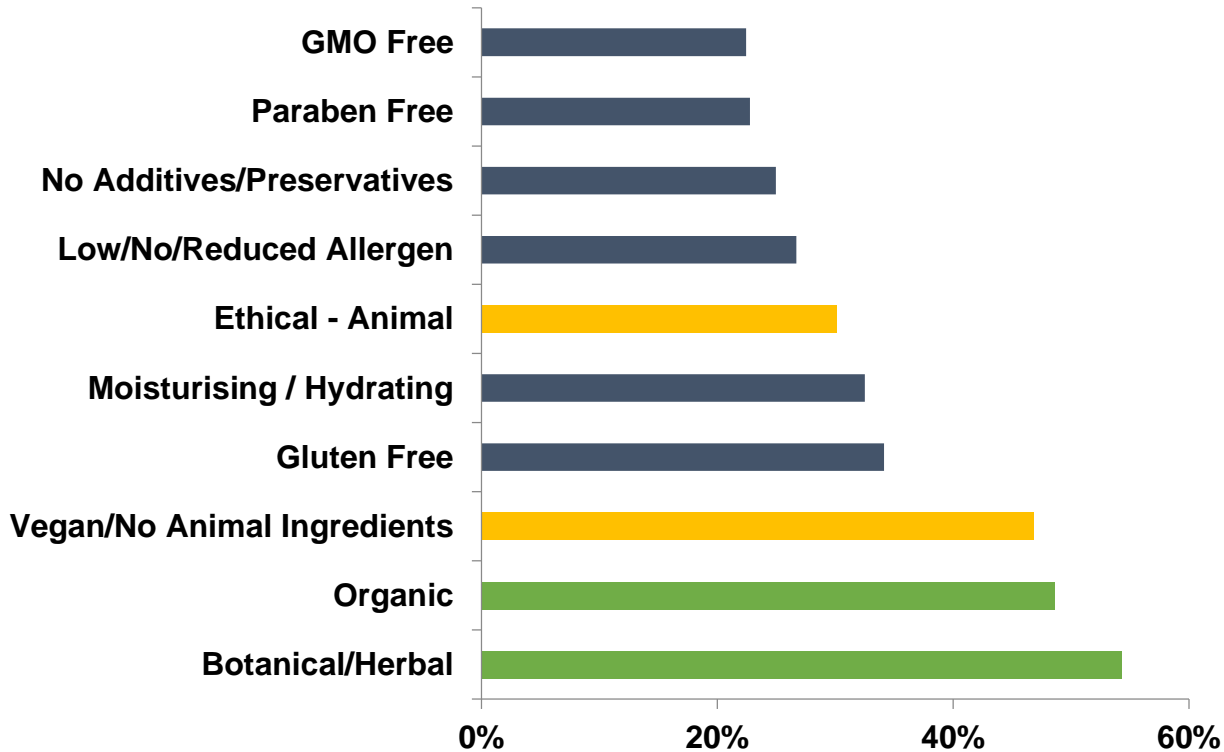
- Search analytics identified developed Western markets as ideal target markets for hemp products. Canada and the United States rate highly in terms of search proportions per person across hemp, fibre, and cannabidol pharmaceuticals. This indicates these markets are suitable targets for a broad range of hemp products, and that a hemp producer could find customers for their entire production output, rather than having to enter multiple markets to do so.
- Hemp fibre presents specific opportunities in Asian markets. In these markets, it is primarily used as a textile and as an industrial input. Strong population growth and building activity in these markets means that construction materials that use hemp as an input, e.g. hempcrete, a form of concrete, may be viable products.
- There is strong consumer search interest in cannabidol pharmaceutical products in several high-income countries. Consumer interest combined with the likely high unit cost of extract products suggest high-income consumers in countries like the Netherlands would be ideal targets for these products.

PRODUCT ANALYSIS



PRODUCT CLAIMS

Frequency of Claims in New Products
2012 - 2017



Source: Mintel

Ethical and natural claims are common

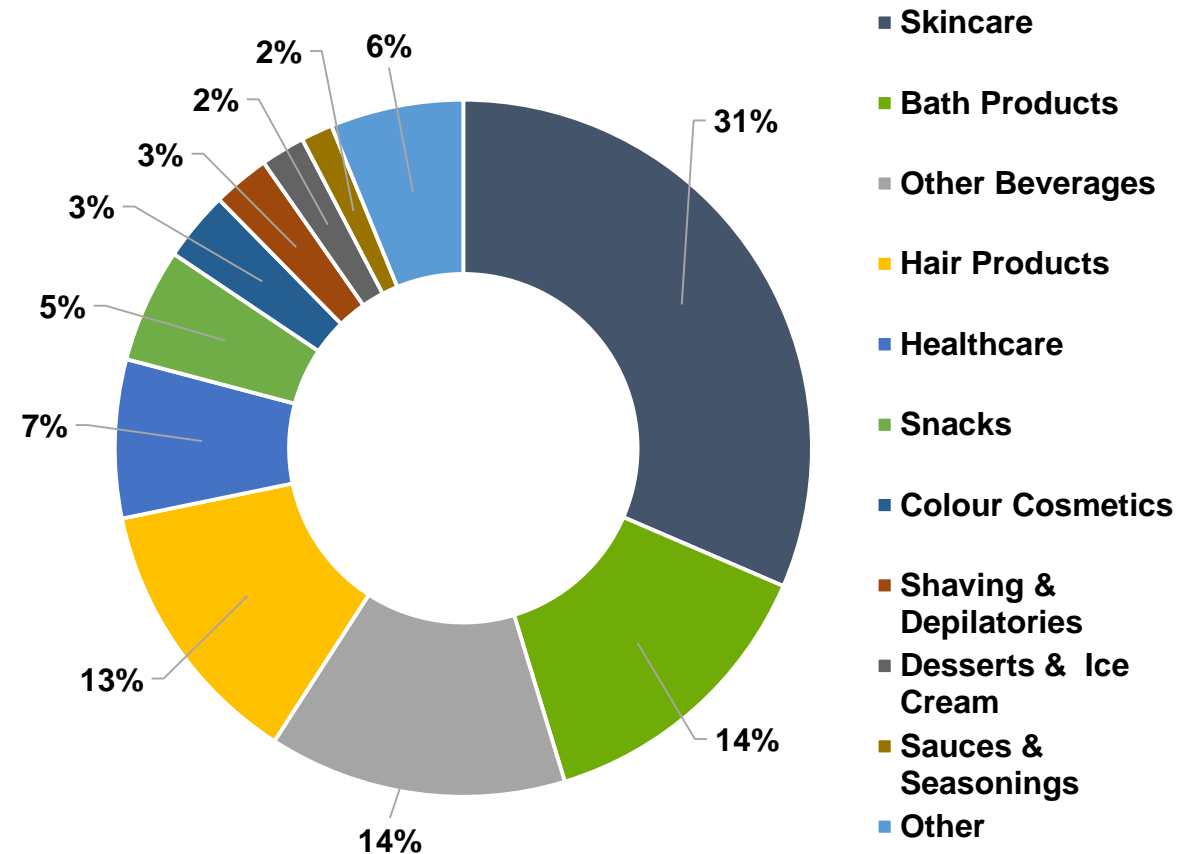
- New hemp products launched in 2012–2017 make significant use of animal ethics claims (vegan, ethical – animal), and naturalness claims (organic, botanical). These claims are becoming increasingly important in more established products, e.g. meat, but this demonstrates that hemp products are responding faster to changing consumer drivers than more established product categories.
- Hemp consumers will have an expectation of new products meeting these emerging trends and claims. Products that do not meet these drivers will have a disadvantage in terms of consumer perception.

PRODUCT CATEGORIES

Skincare dominates product launches

- From 2012–2017, four retail product categories made up 71% of new hemp products launched in the United States, and could be targeted for hemp products. These products fall into two broad groups: beauty and personal care and food and beverages.
- The beauty and personal care group consists of skincare, bath & shower products, and hair Products. With 57% of new products in this group, there is demonstrated consumer interest in this space.
- Food and beverage market consists of the other beverages category. In terms of products, this category is almost entirely comprised of nutritional supplements.
- Of the four categories, other beverages is growing the fastest, with a CAGR of 61.5% for new product launches. This is followed by bath & shower products with a CAGR of 36.1%, skincare with a CAGR of 19.1%, and hair products with a CAGR of 7.6%. It should be noted that at this level the sample size for assessment is small.

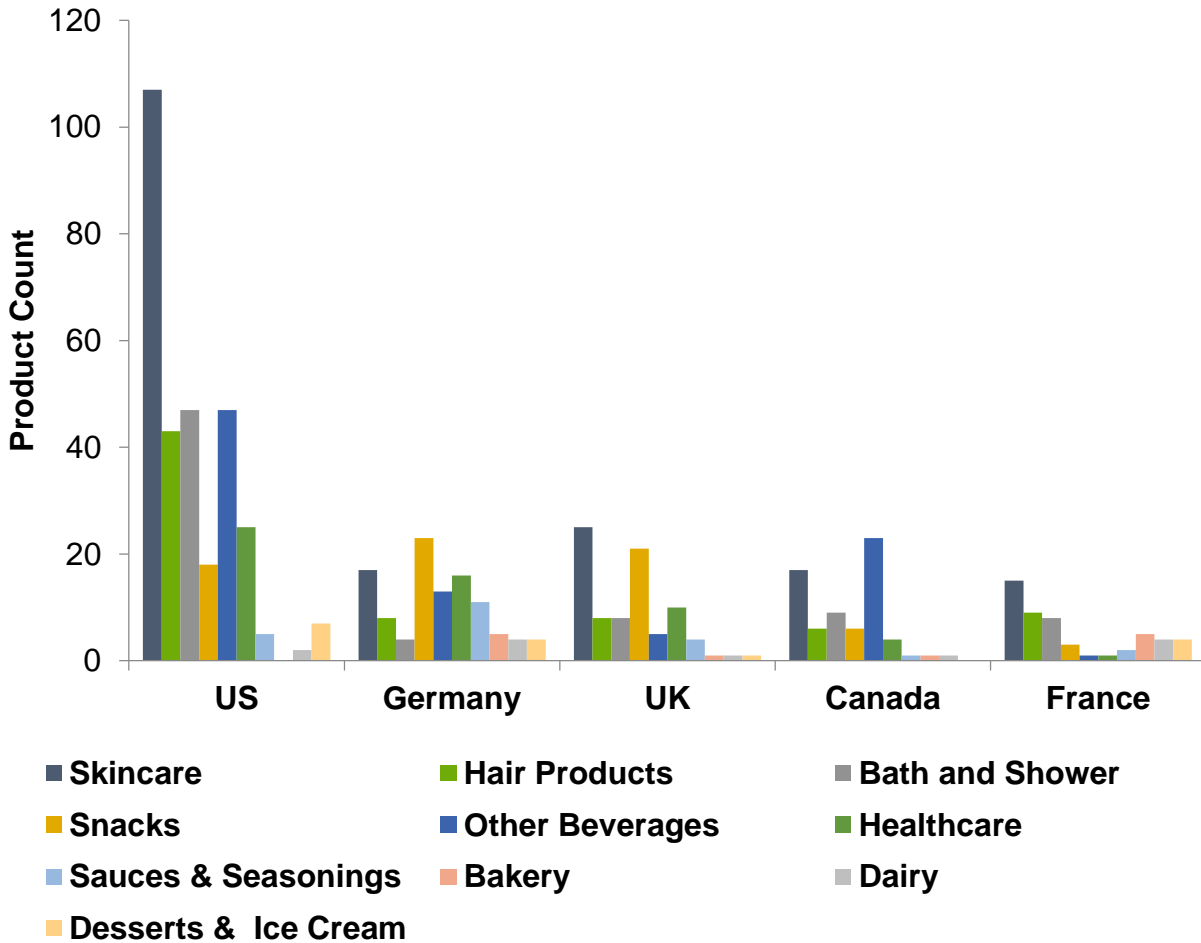
US Hemp Product Category Breakdown
Products launched 2012 - 2017



Source: Mintel

COUNTRY BREAKDOWN

Country vs Category



Source: Mintel

Countries have unique product distributions

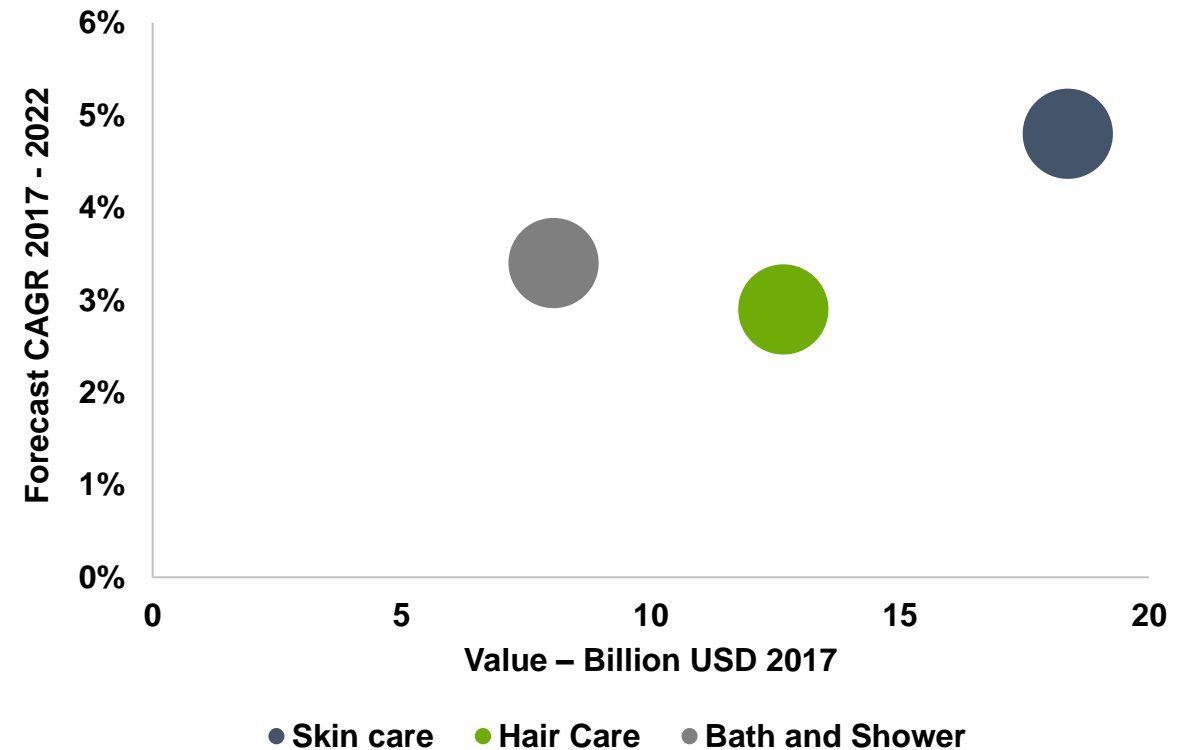
- The pattern of product distribution found in the US is not shared across other countries. Skincare, the largest category in the US, is one of the main categories across the other top five countries for hemp products. As a result of this, skincare products could likely be targeted at other markets once a brand has been established in the US.
- A category that is absent in the US relative to other countries is the snacks category. This category is the largest category for hemp products in Germany, and the second largest in the UK. This may indicate there is unrealised potential for hemp snack products in the US market.

BEAUTY AND PERSONAL CARE

Beauty and Personal Care

- The largest category of hemp products, skincare, is also the product category with the greatest total US value (\$18.4 billion USD), and has the highest forecast growth (4.8% CAGR). The category has the highest concentration of hemp products on the market (2.8% of products since 2012), but higher future growth should accommodate this. This would be an ideal first beauty and personal care category to target.
- The bath & shower and hair care categories are more varied in entry conditions. The bath & shower category has a higher forecast growth rate (3.4% CAGR) and lower concentration of hemp products already on the market (2% of products launched since 2012), but less total value (\$8 billion USD).
- Hair care in the US has greater overall value (\$12.6 billion USD) than the bath & shower category but a lower forecast growth rate in the next 5 years (2.9% CAGR), and a higher concentration of hemp products already on the market (2.2% of products launched since 2012).

Retail Value and Predicted Growth of Product Categories in the US



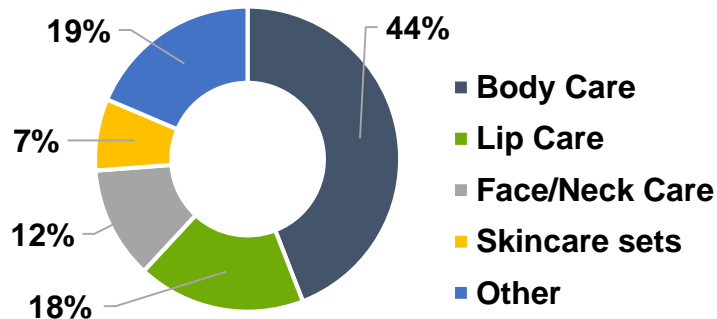
Source: Euromonitor

BEAUTY AND PERSONAL CARE

Skincare

- Hemp skincare in the US has two components. At the product level, hemp is used as a functional ingredient, and not heavily pushed, instead focussing on flavour. When hemp is marketed in skincare products, it is usually at the brand level. An example of this is 'sugar body scrub', under the brand name Hempz (see page 26).
- A large part of this is driven by two firms, Hempz and Hemp technologies, which released 22.4% and 9.3% of new hemp skincare products in the US between 2012 and 2017.

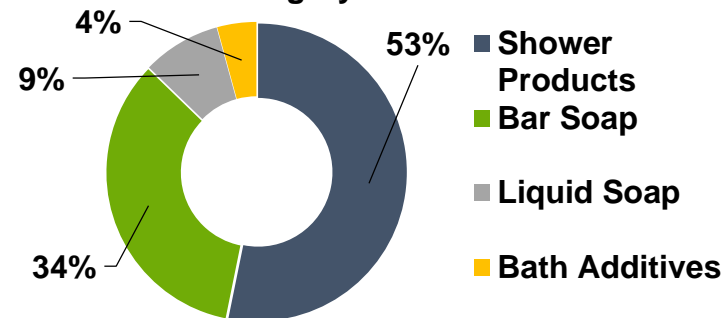
Category Breakdown



Bath & Shower

- Marketing of bath & shower hemp products in the US is mixed, with focus spread between function, flavour and ingredients. This means that marketing techniques focussed on any of these aspects could be used.
- As this category is less sensitive to the marketing strategy used, firms should instead focus on either skincare or hair care, and then bringing that same approach to bath & shower products.

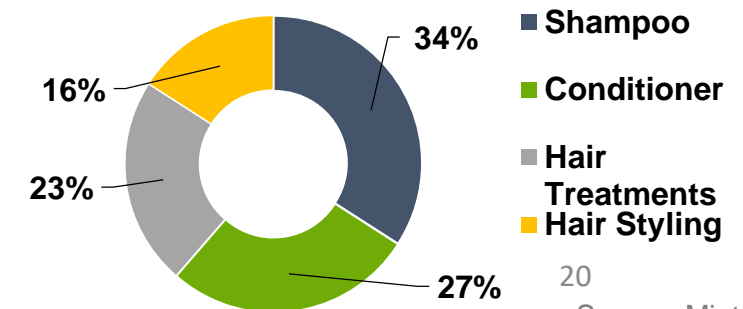
Category Breakdown



Hair Care

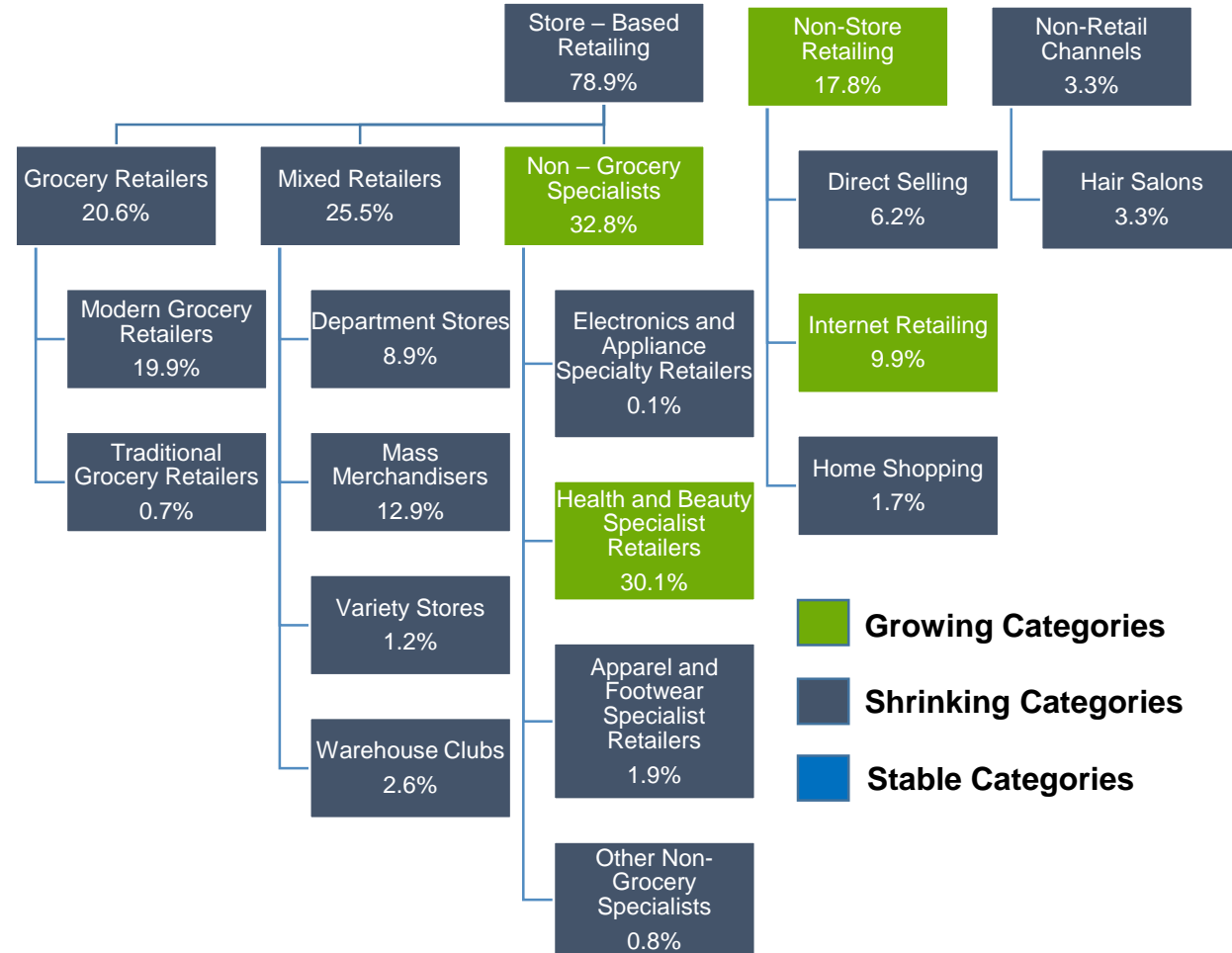
- The marketing of hemp hair care products in the US has a focus on function, with descriptions being based around ingredients helping deliver an outcome, e.g. "hemp seed to replenish moisture for increased elasticity and shine".
- Because of this, functionality should be pushed as the product value proposition, and with hemp being used to either support this, or as an overall brand, similar to skin care products.

Category Breakdown



BEAUTY AND PERSONAL CARE

US Beauty and Personal Care Sales Distribution 2017



Source: Euromonitor

Distribution approach

- The distribution of sales in the US for beauty and personal care products is currently experiencing a shift away from traditional, store-based retailing in favour of specialty stores and e-commerce. This is reflective of an overall shift in this direction across all products.
- Hemp producers can take advantage of this by targeting new products directly at fast growing distribution channels. Ideal targets are Internet retailing and specialist beauty retailers, which are currently growing.
- This will likely be effective for hemp products. As identified in product claims, hemp consumers have a greater than normal expectation that their products will meet emerging trends, and will be more responsive than other consumers to these new distribution channels.

NUTRITIONAL SUPPLEMENTS ANALYSIS

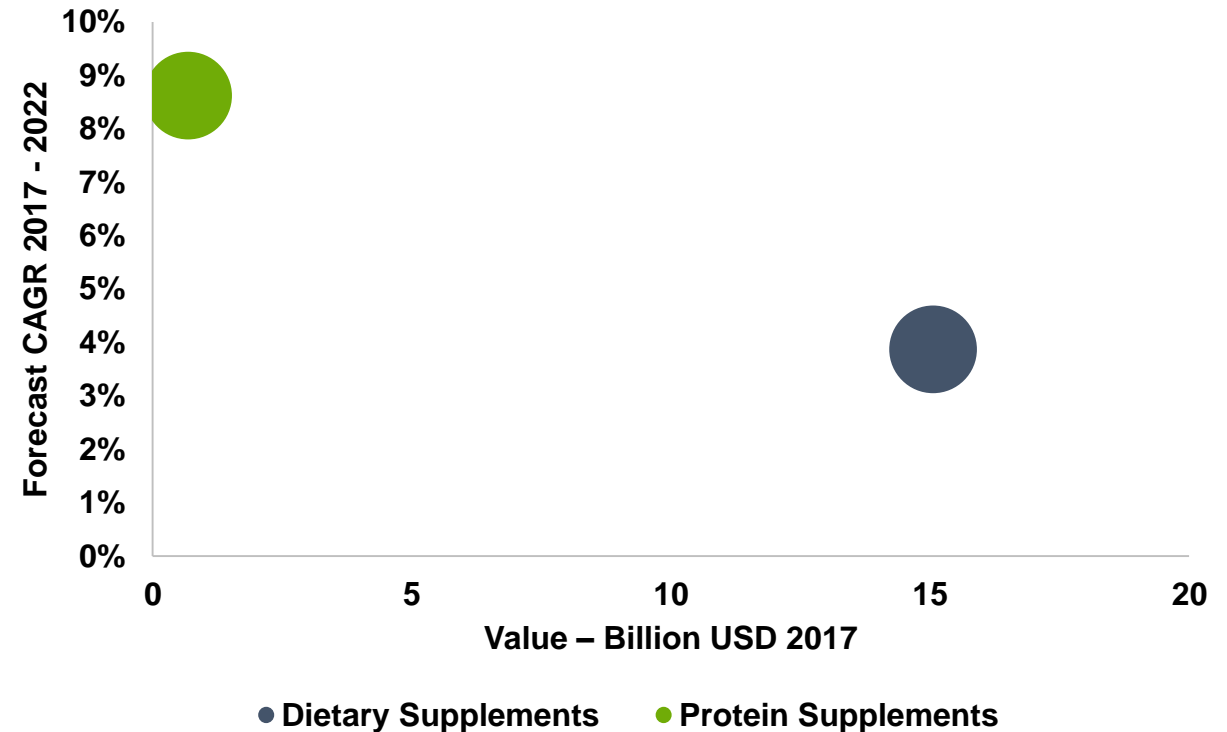
Nutritional Supplements in the US

- The dietary supplements market in the US is large (\$15 billion USD) and predicted to grow (CAGR of 3.9% 2017-2022).
- Protein supplements, the most prevalent hemp product in this category, is currently small but has a very high predicted growth rate (CAGR of 8% 2017-2022). This makes it an ideal target for new hemp products.

Global Market

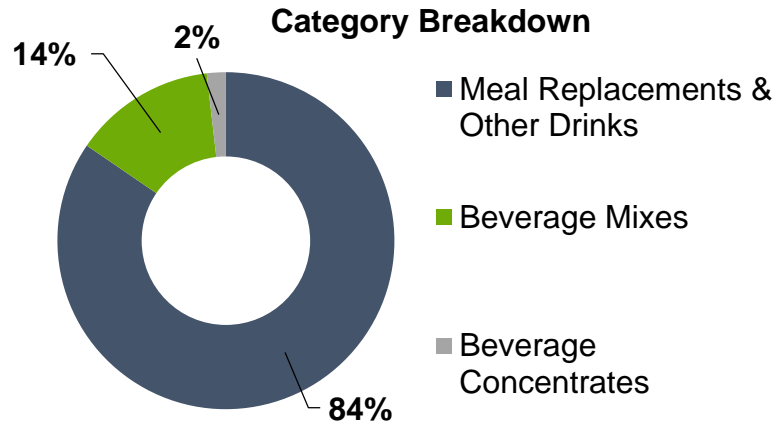
- The global market for dietary supplements as a whole is predicted to grow faster globally than in the US (5.8% CAGR globally vs 3.9% CAGR for the US) from 2017- 2022. The protein supplement sub-category, while forecast to experience strong growth globally (6.44% CAGR), is expected to grow slower than the US.
- Because of this, firms would likely be able to market nutritional supplement products in markets outside the US as well.

Retail Value and Predicted Growth of Product Categories in the US



Source: Euromonitor

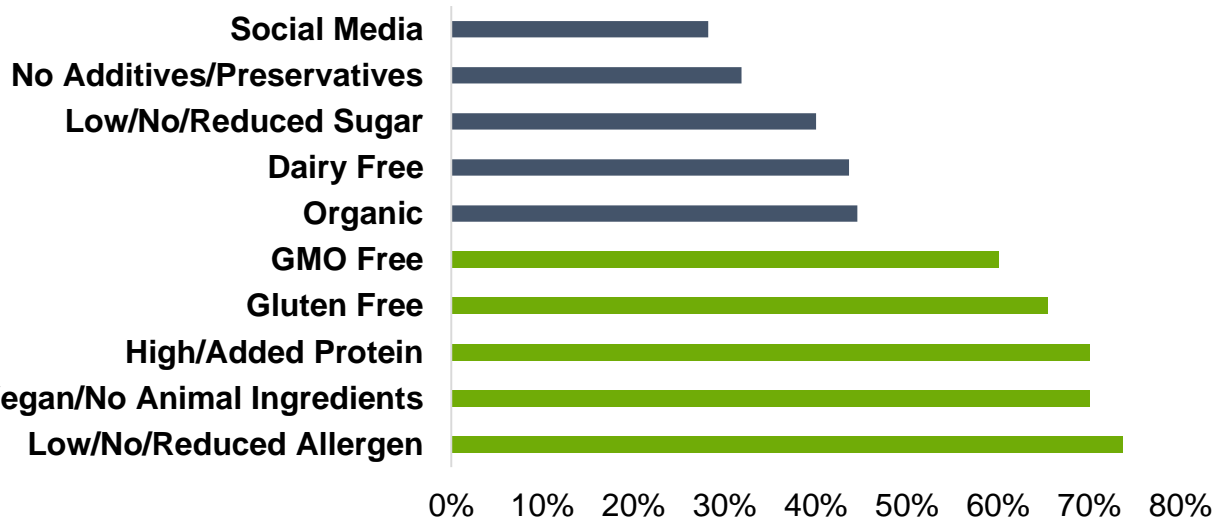
NUTRITIONAL SUPPLEMENTS ANALYSIS



Other beverages is dominated by meal replacements and nutrition products

- The majority of the hemp products in this category are meal replacement and nutrition products. This is predominately nutritional smoothies, protein shakes, and protein powders.
- The selling point of these products are almost exclusively that they are a source of natural, plant-based proteins. As a result of this, the category had a significantly higher proportion of product claims than hemp products as a whole.
- Over 60% of products made claimed to be low allergen, vegan, high / added protein, gluten free, and GMO free. Across all hemp products only one claim, herbal, had over 50% of products making it. This indicates that these claims are of greater importance in nutritional supplements than other hemp products, and should be considered as 'must haves' rather than 'nice to haves' for New Zealand firms considering product design.

Frequency of Product Claims 2012 - 2017



Source: Mintel

CASE STUDIES



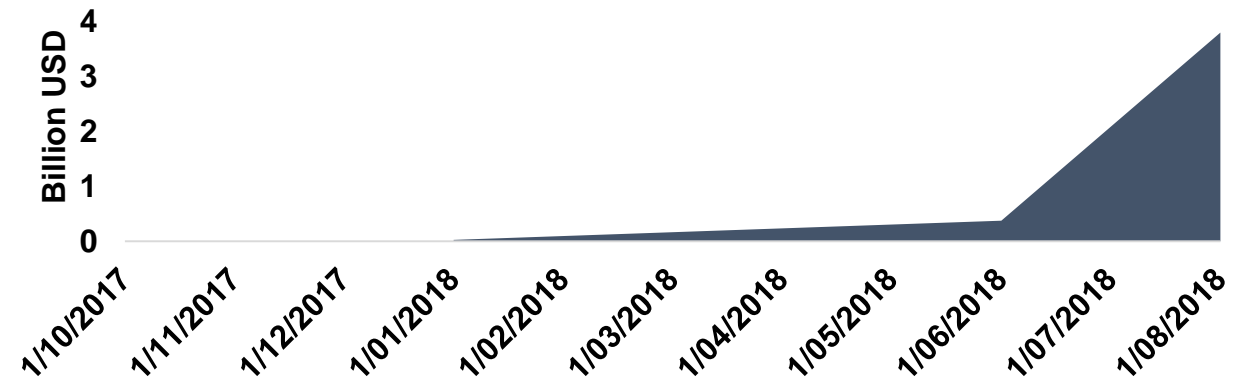
CANOPY GROWTH CASE STUDY

- Canopy Growth is a publicly traded producer of medical cannabis. The company operates a collection of brands and strain varieties, supported by over 2.4 million square feet of growth space.
- Founded by Bruce Linton and Chuck Rifici in 2014, Canopy Growth is based in Ontario, Canada. Chuck Rifici left the company in 2015.
- Since being founded, the firm has raised \$4.2 billion USD in venture funding, and has an estimated annual revenue of \$48.9 million USD. This funding makes up 59.7% of global investment in cannabis companies and has been driven by large scale investment from drinks giant Constellation Brands.
- Canopy Growth primarily acts as a cannabis grower and exporter, however the firm has made investments, partnerships, and acquisitions with firms in Europe, Africa and Australia. These partnerships include established pharmaceutical companies such as Alcaliber, giving Canopy Growth links with firms experienced in biological and pharmaceutical extracts, and connections to these markets.



Bruce Linton is a founder, and the current Chair of Canopy Growth. He has experience working for a range of web and network firms, and has recently been named the Ottawa Board of Trade CEO of the year.

Investment Funding



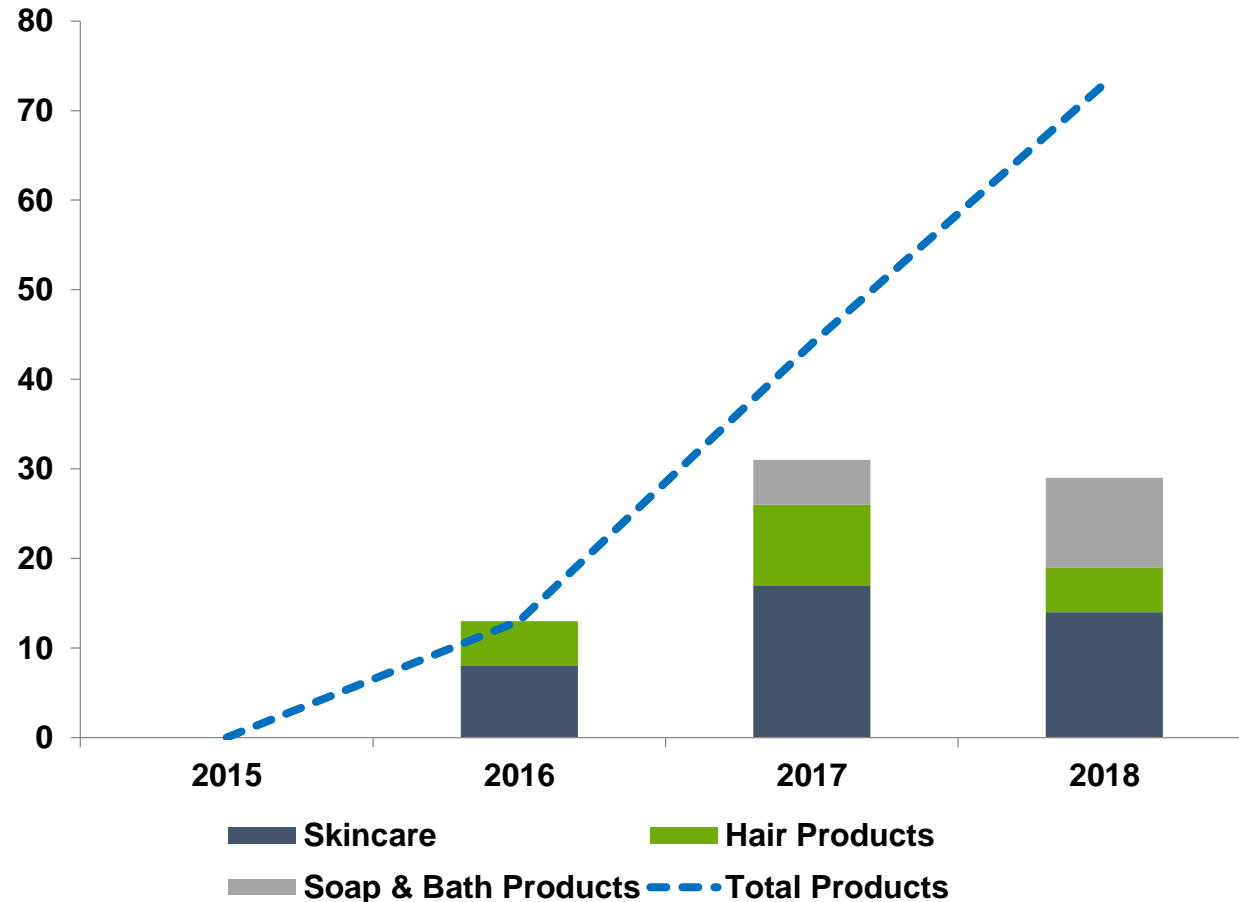
Source: Crunchbase

HEMPZ CASE STUDY



- Hempz is a US based company that is focusing on hemp beauty and personal care products in the US market.
- All of the firm's existing product have been launched in identified target markets including bath & shower products, hair care products, and skincare products. The increasing launches of new products indicates that the company is finding a market for these products as well.
- A theme across the Hempz range is the reliance on brand to convey that the product contains hemp, with only a small proportion (20.5%) of products being hemp flavoured. This shows that the company is aiming to have broad appeal across beauty and personal care, rather than doubling down on the hemp value proposition.

Hempz Global New Product Launches
2015 - Oct 2018



OTHER CASE STUDIES

Aurora Cannabis

- Aurora Cannabis is a publicly traded marijuana producer. Aurora Cannabis is selling both medical and recreational cannabis, and is perusing acquisitions of other cannabis firms globally, looking to build an international presence.
- Founded by Steve Dobler and Terry Booth in 2014, the firm is based in Alberta, Canada.
- Since 2014, the firm has raised \$269 million USD in venture funding, and has an estimated annual revenue of \$11.1 million USD.

Privateer Holdings

- Privateer is a private equity firm that focuses on investment in firms developing cannabis products. Privateer has built a portfolio that includes retail, medicinal, and software firms, indicating that the firm is looking to spread their risk over a wide series of companies, rather than focussed investment.
- Founded by Brendan Kennedy, Christian Groh, and Michael Blue in 2016, the firm is based in the United States.
- Since 2016, the firm has raised \$228 million USD in venture funding.

Province Brands

- Province is a luxury consumer good business. The firm focuses on brewing beer from cannabis, and intends to compete with traditional beers in the beverage industry.
- Founded by Dooma Wendschuh and Jennifer Dianne Thomas in 2016, the firm is based in Toronto, Canada.
- Since 2016, the firm has raised \$11.8 million USD in venture funding.

OTHER CASE STUDIES

Mj Freeway

- Mj Freeway offers a cloud-based, seed-to-sale software for cannabis businesses. The firm's focus is spread over software support and business development, with both products looking to take advantage of modern data analytics.
- Founded by Amy Poinsett and Jessica Billingsley in 2010, Mj Freeway is based in the United States.
- Since 2010, the firm has raised \$21 million USD in venture funding, and has an estimated annual revenue of \$8.1 million USD.

Green Bits

- Green Bits is a retail and sale platform that helps cannabis retailers grow their businesses. It operates similar to platforms such as Uber, locating stores for customers, providing a transaction system for businesses, and also providing compliance support.
- Founded by Andrew Katz, Ben Curren, and Trae Robrock in 2014, the firm is based in San Francisco, in the United States.
- The firm has raised \$20 million USD in venture funding, and has an estimated annual revenue of \$2.1 million USD.

LeafLink

- LeafLink is a wholesale management platform for the cannabis industry. Its market focus is based around supply chain optimisation for cannabis businesses.
- Founded by Ryan Smith and Zach Silverman in 2015, the firm is based in New York, in the United States.
- Since 2015, the firm has raised \$14 million USD in venture funding, and has an estimated annual revenue of \$1.8 million USD.