TECHNOLOGY INSIGHTS FROM DATA ANALYTICS

Pet Food Industry

SCITECH
PATENT ART

*Scientists powered by **ML & Deep Web** tools*

This document is intended solely for the information of the client to whom it is addressed

ABOUT SCITECH PATENT ART (SPA)

- Established in 2002…one of India's leading technology intelligence firms for more than 17 years
- Maintaining ***confidentiality*** is core to our business
- Serve Fortune 500, universities and law firms
- 95+ advanced degree ***scientists and technologists***

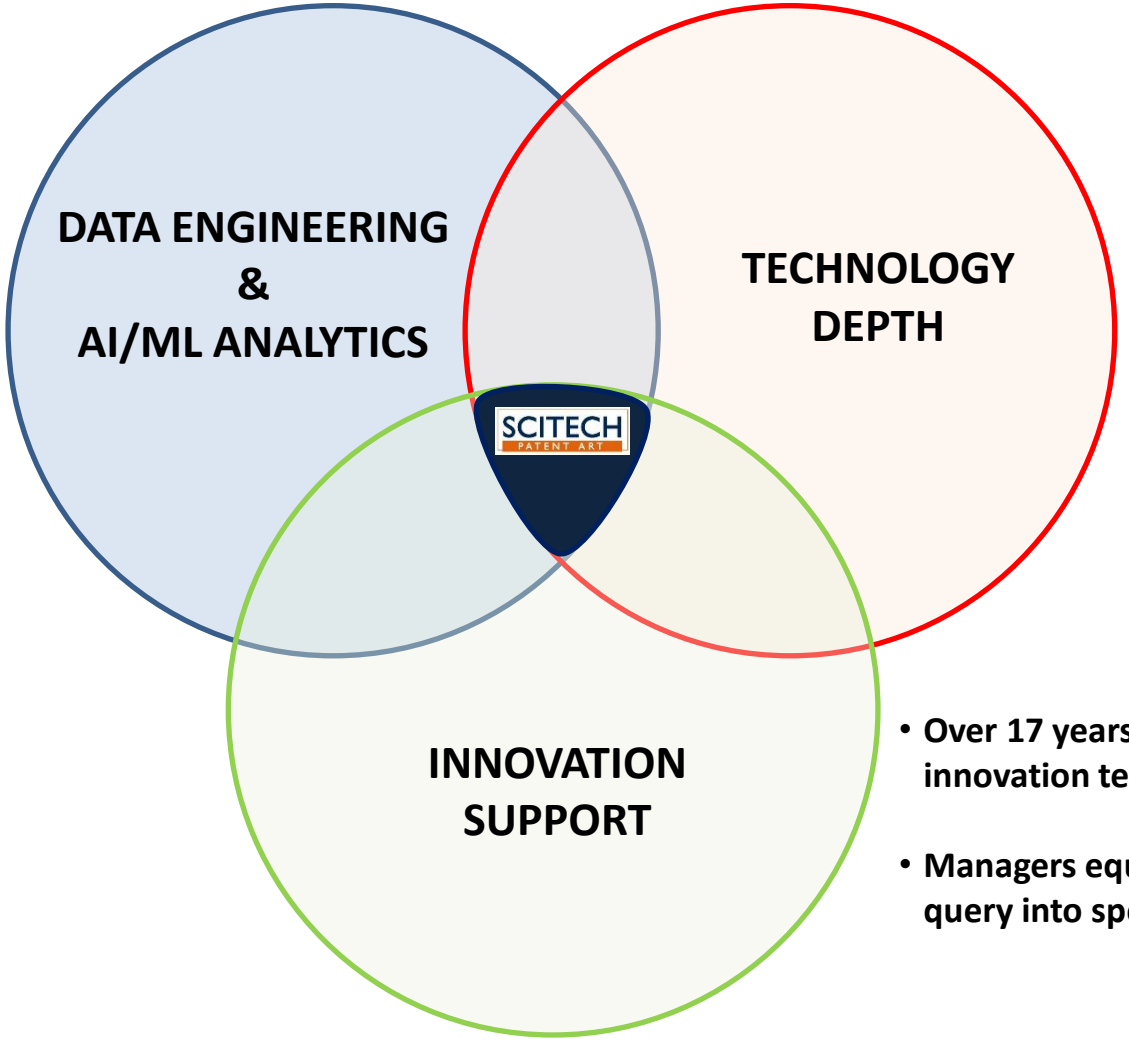
Our Difference

Human experts powered by data engineering & AI / ML tools

Client advantages: Cost, Turnaround Time & Quality

OUR DIFFERENCE

- Extensive knowledge of databases and data sources
- Deep Web crawling, Big Data and machine learning analytics



- 95+ analysts in various technical disciplines
- Over 100,000 technical documents (patents, publications, websites,…) analyzed every month

- Over 17 years experience in supporting innovation teams
- Managers equipped to quickly turn a query into specific deliverables

SERVICES & TOOLS – AN OVERVIEW

IP/NON-IP SEARCH SERVICES

- Prior art / State of the art
- Patentability assessment
- Freedom-to-operate
- Validity/Invalidity searches
- Evidence-of-use searches / patent-product matching
- Patent term extension
- Design searches
- Customized patent alerts
- Patent drafting/office action support
- Prosecution tracking

R&D SERVICES

- Technology trends
- Patent landscape
- Non-patent landscape
- Product landscape
- One-page summaries
- White-space analysis
- Problem-solution analysis
- Open innovation partner identification
- Start-up tracking
- Competitor monitoring
- …other custom R&D requests

TOOLS/PORTALS

- Alerts portal
- Patent portfolio analysis portal
- Bloom of ideas portal
- Non-patent literature portal
- Auto-labeling tool
- Prosecution-tracking portal
- Start-up/Incubator/Accelerator tracker portal
- Deep Web search tool
- Subject-specific AI agents
- Screening/analysis assistant
- …other custom tools by request

OUR EXPERIENCE IN PET FOOD

STAFF BACKGROUND

- Biotechnology
- Biomedical Engineering
- Chemistry & Chemical Engineering
- Food & nutrition
- Material science
- Mechanical Engineering
- Electronics & Telecommunications
- Electrical Engineering
- Polymer technology
- Pharmaceutical sciences

RECENT PROJECT TOPICS FROM A 300+ LIST

- Use of probiotics in pet food
- Probiotics for pet digestive health
- Antibodies involved in pet allergy
- Use of specific ingredients to nourish skin and promote a healthy coat
- Use of vitamin D, vitamin E and vitamin C in pet food
- Promoting joint health in pet food
- Use of bacteria in pet food
- Use of specific oils in pet food
- Cell suppression in dogs
- Eye/vision health in companion animals
- Enhanced diets for cats and dogs
- Optimal designs/shapes for tooth health
- Pet litter containing specific odor-absorbing materials
- …and more

INTRODUCTION

- ✓ **Data analytics** is a rapidly evolving field with newer and more advanced tools emerging, which allow much more complex analysis than conventional tools such as Microsoft Excel™

- ✓ We at SciTech Patent Art (SPA) believe that application of these complex analytical techniques to **competitive / market analyses** performed by R&D/Technology communities in corporations will lead to unique insights

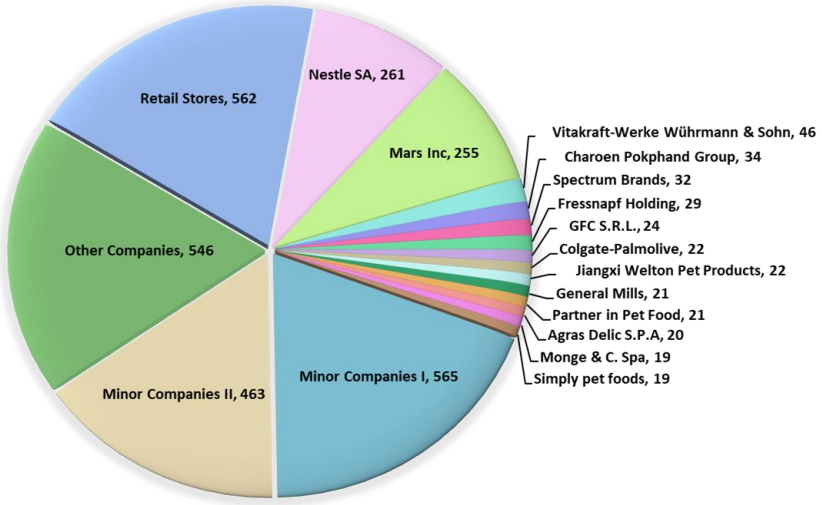
- ✓ With recent addition of advanced data analytics capability at SPA, as a pilot, we decided to explore the application of **conventional trend analytics and other advanced data analytics techniques such as network/cluster analysis** to Mintel's GNPD™ data to extract unique insights

- ✓ To keep the report concise while demonstrating capability, we have only presented a few findings. If you are interested in learning more or conducting similar analyses on different data-sets, we would love to hear from you: info@patent-art.com

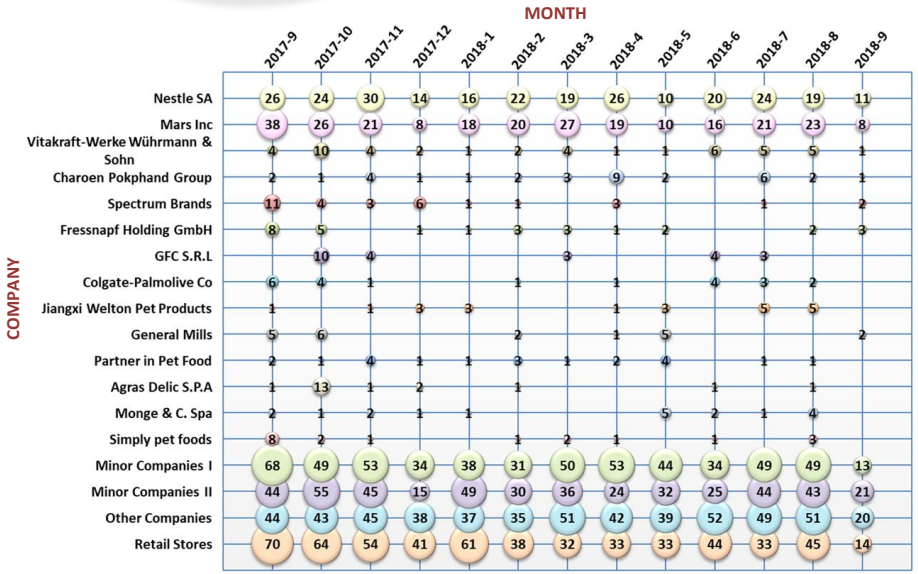
OBJECTIVE & METHODOLOGY

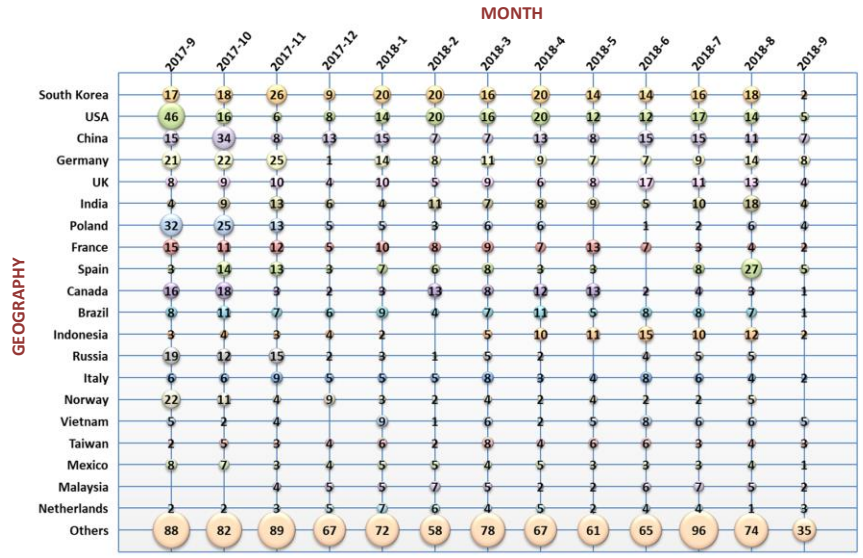
OBJECTIVE	To understand the emerging ingredient/claim trends in Pet food products launched during the last one year across all geographies using **traditional and advanced data analytics**
METHODOLOGY	**DATA SOURCE:** • Mintel GNPD™ : Claims and Ingredients information is taken directly from the product package as they appear on the Mintel website **DATA:** • Products introduced in Pet Food area for the period **Sep 2017 – Sep 2018 ~ 2,900+ products with 1,900+ ingredients** • Normalized ingredients, company names, claims and product variants to identify trends **ANALYTICS:** • Trend analysis was conducted on the overall data-set of 2,900+ products • For advanced data analytics – outliers, inliers, clusters and network analysis - a sub-set of 750+ products introduced in the last 4 months was used
LIMITATIONS / DISCLAIMER	• Analyses in this report are limited to ingredients/claims within the time period studied. Similar analytics can be conducted using packaging, price and other information available in Mintel GNPD™ data • In-depth insights can be extracted by running specific analyses on ingredient types or claims or companies or geographies. For further information, please contact info@patent-art.com

KEY COMPANIES / GEOGRAPHIES



- **Nestle** and **Mars** are leading product launches in pet food products in this time period
- Significant new product launches have been observed from retail stores such as **Schwarz Gruppe (Germany)**, **ALDI Einkauf GmbH & Co (Germany)**, **DM-Drogerie markt GmbH** (Germany), and **Shinsegae (South Korea)**
- There is sudden increase in product launches in **Indonesia** in last six months…a deeper dive is presented on the next page
- A large number of products have been launched in **Spain** in the month of Aug 2018 which is equivalent to the total number of products launched in the previous year





Minor companies I : Companies that have 6 – 18 products ### Minor companies II : Companies that have 3 – 5 products ### Minor companies II : Companies that have <3 products

PRODUCT LAUNCHES – INDONESIA DEEP DIVE

Companies

- Charoen Pokphand Group
- Vitakraft-Werke Wührmann & Sohn GmbH & Co. KG
- Origin Pet Food
- Unicharm Corp
- Nestle SA
- Mars Inc.
- Sea Value Co

Claims

- Vitamin/Mineral Fortified
- No Additives/Preservatives
- Digestion & Urinary Tract
- Pet - Adult
- Low/No/Reduced Allergen
- Skin & Coat
- Teeth & Tartar Prevention
- Eyesight
- Prebiotic
- Low/No/Reduced Sugar
- Joints, Bones & Muscles
- Heart & Cardiovascular System

Ingredients

- Chicken Meat
- Minerals
- Food Colours
- Taurine
- Vitamins
- Vitamin E
- Tuna
- Glycerol
- Flavouring Substances
- Gelling Agent
- Food and Drink Additives
- L-methionine
- Fructo-oligosaccharides
- Carrot
- Potassium Chloride
- Corn Starch
- Choline Chloride
- Chicken Liver
- Meat and Meat Products
- Fish Fats

Regular Sensible 33 Cat Food for Sensitive Adult Cats

Royal Canin (Mars Petcare)

- Digestion & Urinary Tract (Functional Pet)
- Prebiotic

T-Bone Steak Flavour Adult Dog Food in Gourmet Gravy

Nestlé Purina PetCare

- Balanced pet food for adult dogs

Salmon Flavoured Creamy Treats

Perfect Companion Group (Charoen Pokphand Group)

- Vitamin/Mineral Fortified
- Digestion & Urinary Tract
- Eyesight
- Skin & Coat

Vitality Plus Dental Dog Snacks

Vitakraft

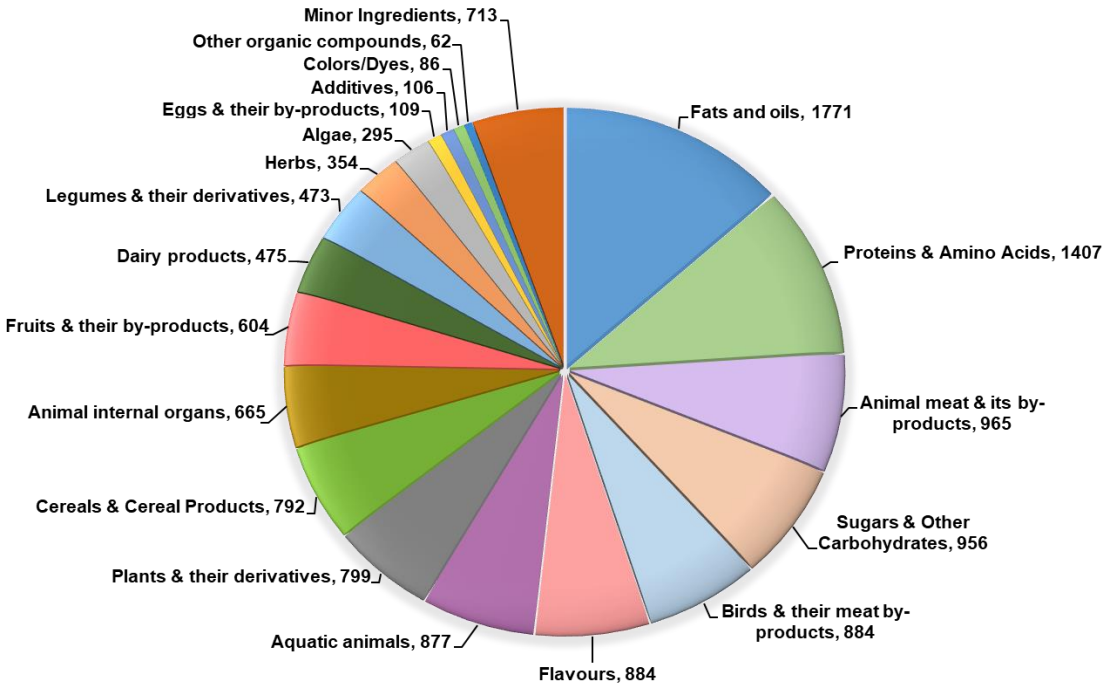
- Teeth & Tartar Prevention (Functional Pet)
- Vitamin/Mineral Fortified

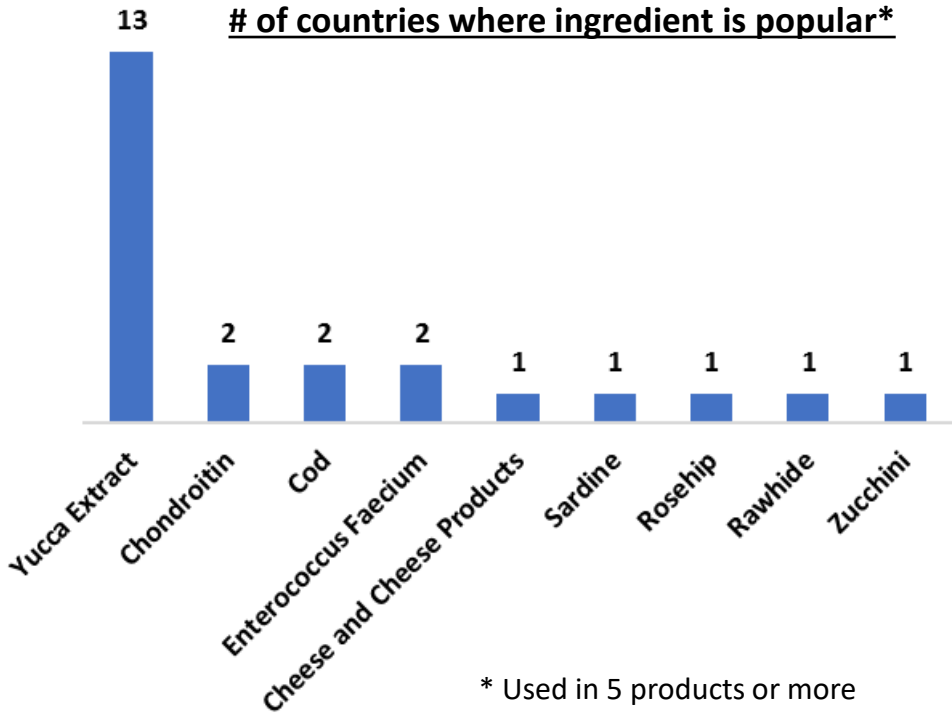
Milk Flavoured Dental Chew Zest

Yappy Global Pets

- Breath-Freshening
- Digestion & Urinary Tract
  Joints, Bones & Muscles
  Low/No/Reduced Allergen
- Prebiotic
- Premium
- Vitamin/Mineral Fortified

KEY GLOBAL INGREDIENTS





* Used in 5 products or more

- Looking beyond the obvious major ingredient classes such as Fats & Oils, Proteins, Animal products, etc., other popular ingredient classes **across countries** include **Plant & their derivatives , animal internal organs, fruits and their by-products, dairy products, legumes and their derivatives, herbs, algae and eggs and their by-products**
- Among the algae (not shown in the charts above), **kelp extract** and **micro algae** are gaining importance
- **Yucca extract** is a popular global ingredient (gaining popularity in the last quarter of the study period)**.** Other ingredients such as **Chondroitin, Cod, Enterococcus Faecium**, etc are only popular in specific geographies

"FOCUS" INGREDIENTS BY COMPANY

- **Yucca Extract** is gaining importance in the last quarter of the study period with 97 companies using it as an ingredient...**Mars, General Mills and Simple Pet Foods** have used it extensively in their recent launches
- **Nestle** and **Jiangxi Welton Pet Products Co. Ltd** are the major users of **Tartrazine** in their products
- **Eggs and their by-products** is an emerging category used currently only by **Nestle**, **Mars** and **General Mills**
- **Greenshell Mussel** has been primarily used by **Simply Pet Foods**
- **Chondroitin** in their products by **Simply pet foods, Prairie Dog Treats** and **The First Class Pet**

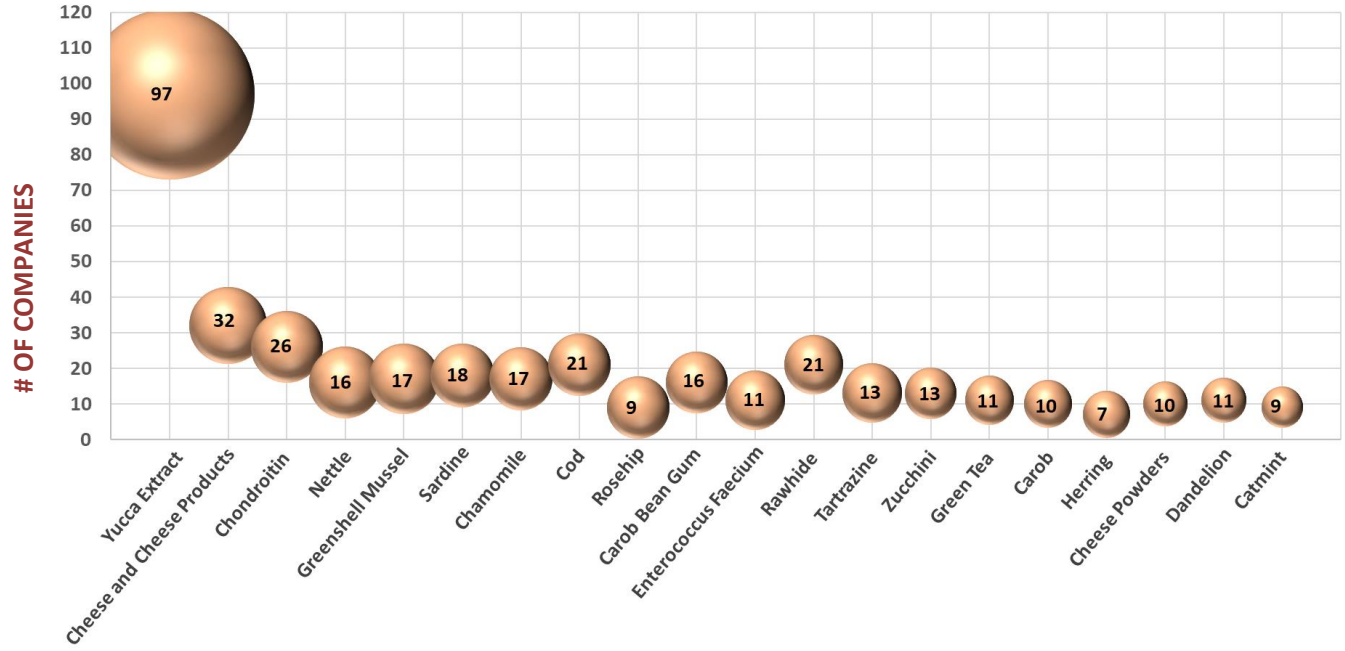
FOCUS INGREDIENTS: DEFINITION

For the purpose of this study ingredients have been divided into two categories: **"Focus"** and **"Other"**

- **"Focus" ingredients** are primarily ingredients which have entered pet food recently, e.g., green tea, jelly, dairy in form of cheese, chocolate, Chamomile, Devil's claw, anchovy, pectinidae, mussel, herring, artic char, Dandelion, wheatgrass powder, amaranth seed, cod, mussel, tartrazine, thistle oil, peanut butter flavor, etc

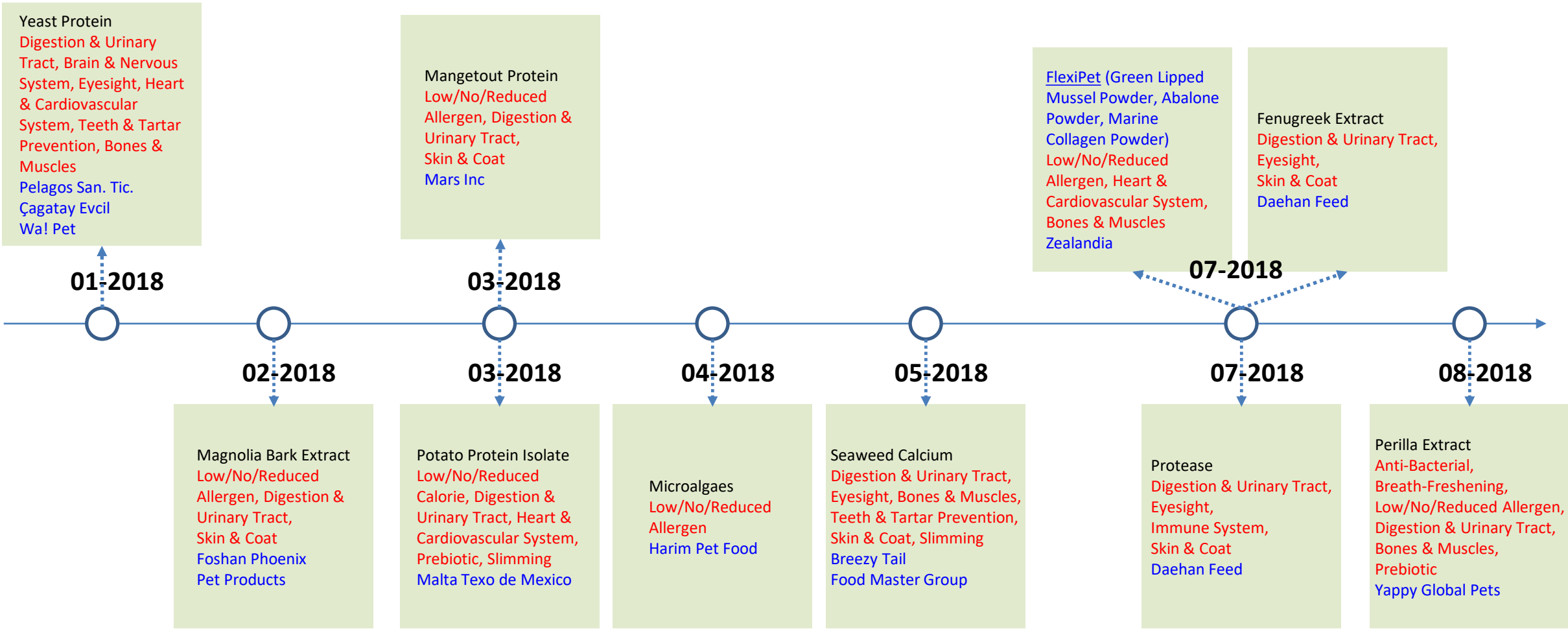
- **Other Ingredients** are ingredients that have been prevalent in pet foods for a long time such as minerals, salts, additives, corn powder, rice starch, etc.

OF COMPANIES AND # OF PRODUCTS BY INGREDIENT



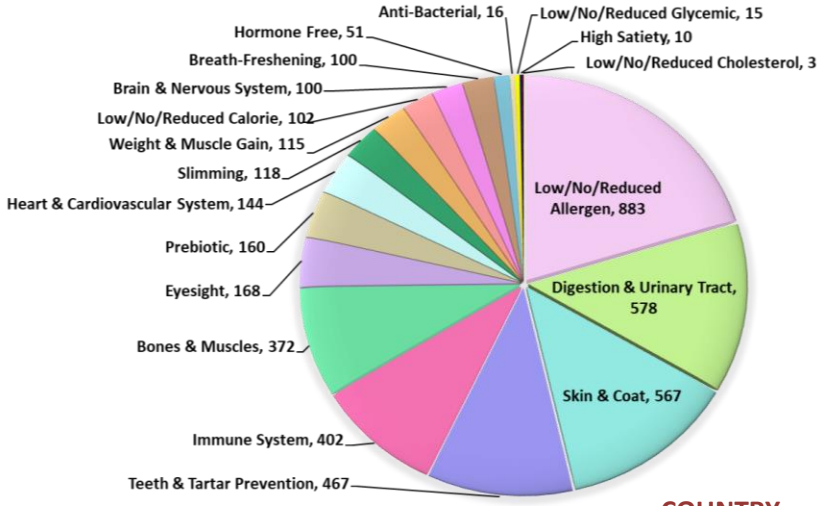
Number on bubble indicates # of companies. Bubble size indicates # of products launched

NEW INGREDIENTS* OBSERVED



* Defined as new ingredients in the context of the 12 month window of analysis

KEY PRODUCT CLAIMS

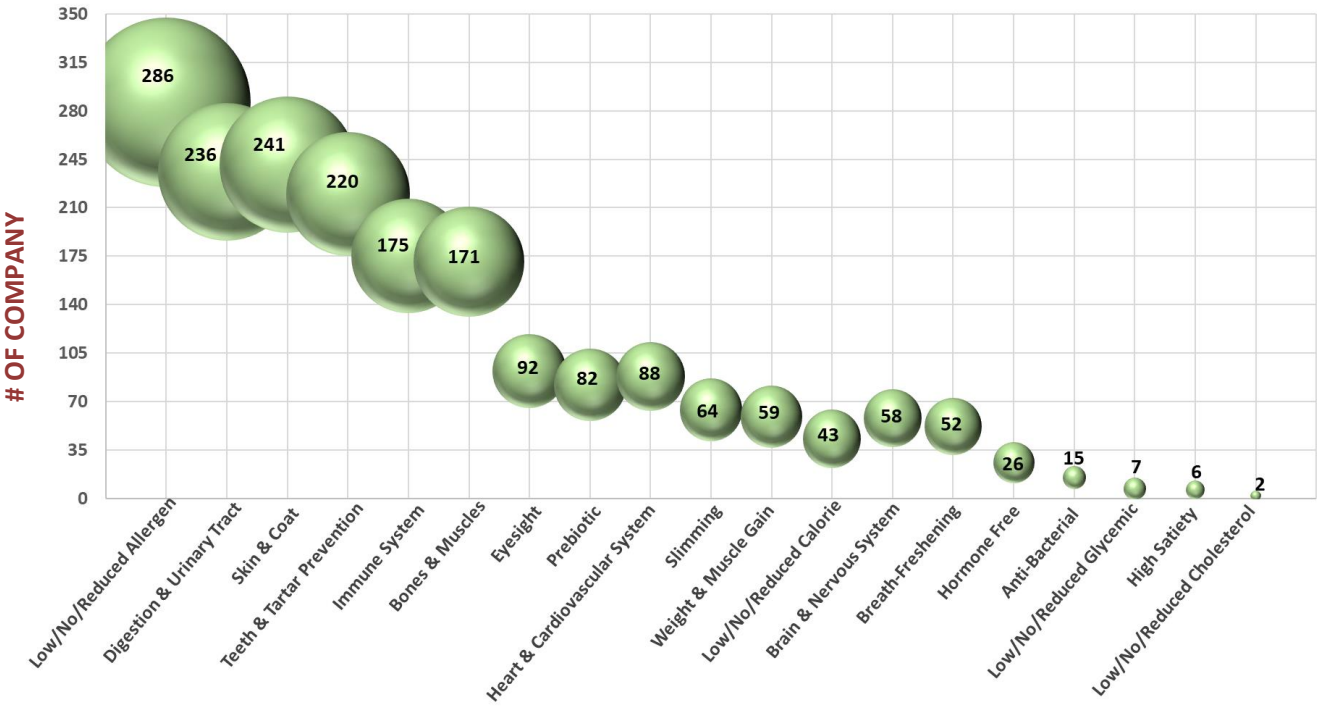


- Popular functional claims are: **Low/No/Reduced Allergen, Digestion & Urinary Tract, Skin & Coat, Teeth & Tartar Prevention, Immune System and Bone & Muscles**
- Many other claims such as **Eyesight, Prebiotic, Heart & Cardiovascular, etc**. are emerging
- Products launched in **USA and Germany** have focused more on **Low/No/Reduced Allergen**
- **'Brain & Nervous System'** and '**Hormone Free**' claims are popular in **China**

COUNTRY

FUNTIONAL CLAIMS	South Korea	USA	China	Germany	UK	India	Poland	France	Spain	Canada	Brazil	Indonesia	Russia	Italy	Norway	Vietnam	Taiwan	Mexico	Malaysia	Netherlands	Others
Low/No/Reduced Allergen	36	130	43	91	57	22	28	21	24	46	5	22	31	15	37	5	6	14	19	9	222
Digestion & Urinary Tract	33	19	61	25	22	25	20	17	31	7	25	17	18	16	17	11	8	15	19	9	163
Skin & Coat	35	25	61	25	20	33	14	12	16	11	18	13	21	10	13	5	15	12	15	14	179
Teeth & Tartar Prevention	54	21	24	7	13	37	20	17	17	6	15	14	11	10	15	18	8	18	3	8	131
Immune System	31	16	46	20	19	22	14	8	14	6	3	4	13	9	17		5	5	9	10	131
Bones & Muscles	14	24	34	9	13	23	17	13	10	5	8	9	10	7	16	5	3	10	10	10	122
Eyesight	12	1	26	3	5	7	14	1	2	5	2	10	6	2		4	4	3	7	4	50
Prebiotic	1	8	12	8	11	12	3	4	7		19	9	2	3	2	3	1	6	6	1	42
Heart & Cardiovascular System	2	5	14	4	6	10	5	3	3	5	1	8	3	1	2	4	1	4	7	5	51
Slimming	9	5	11	3	4		1	7	6	5	3		2	5	5	1	3	2	3	2	41
Weight & Muscle Gain	1	10	4	6	4	5	4	5	4	3	3		5		3			1	2	4	51
Low/No/Reduced Calorie	10	11	4	4	1		1	7		6	6	1	2	3	3	3	2	1			37
Brain & Nervous System	4	3	20	4	1	9	4	1	9	2		1	2	2	1		1	2	3	1	30
Breath-Freshening	13	9	4		2	6	2	6	1	5	2	9		1	4	6	2	4			24
Hormone Free	7	4	10			1		1		1			1	1	4	1	1		5		14
Anti-Bacterial	2	2				2	1	3				2				1					3
Low/No/Reduced Glycemic	1			5	3			1					1							1	3
High Satiety							1	1		1	1		1							1	4
Low/No/Reduced Cholesterol			1														1				1

OF COMPANIES AND # OF PRODUCTS BY FUNCTIONAL CLAIM



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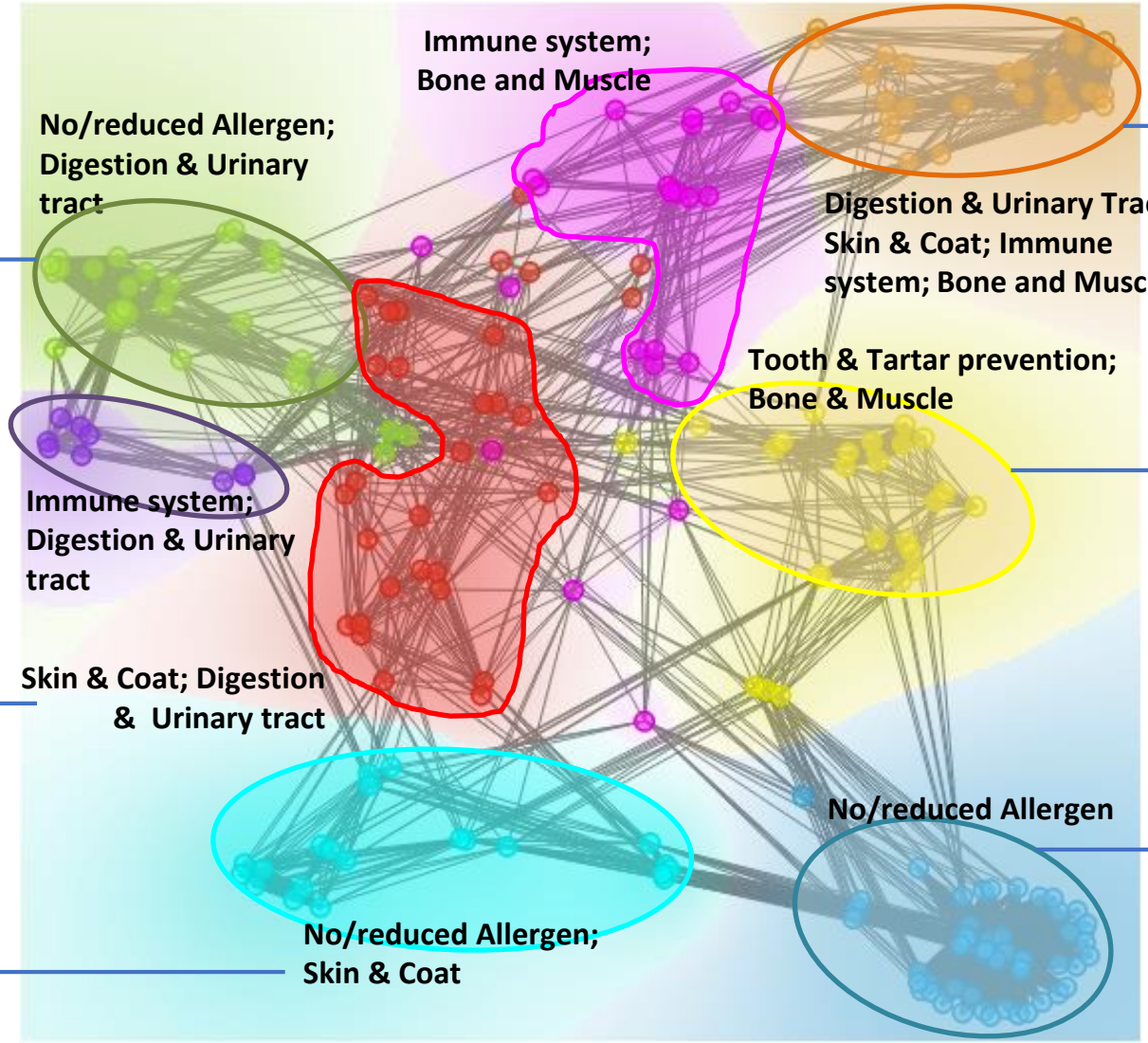
CLAIM VS. INGREDIENT ANALYSIS – OBSERVATIONS

Company	Ingredient
Vafo Praha	Yucca Extract, Catmint
Fold Hill Foods	Chondroitin, Yucca Extract
Singen Pet Nutrition Industry Co.	Cheese and Cheese Products; Job's Tear Seed; Montmorillonite
Chilaboo	Rawhide; Tripe; Bull pizzle (1%)

Company	Ingredient
Daehan Flour Mill Co Ltd	Yucca Extract
Coupang	Yucca Extract
CharoenPokphand	Yucca Extract
Xu Zhan Trading	Catmint, Noodle
I and Love and You	Bison, Enterococcus Faecium

Company	Ingredient
General Mills	Yucca Extract, Enterococcus Faecium
Petco Animal Supplies, Inc.	Chamomile, Nettle, Thistle Oil, Zucchini
The First Class Pet	Green Tea, Nettle, Rosehip



Company	Ingredient
Pawsitive Pets	Carob, Chondroitin, Echinacea, Nettle, Yucca Extract
EBOS Group Ltd	Chondroitin, Dandelion, Yucca Extract
Harringtons	Yucca Extract

Company	Ingredient
Simply pet foods	Chondroitin, Devil's Claw, Yucca Extract
Elmubas Ibérica	Yucca Extract
Petdog Pet Products	Cheese and Cheese Products, Noodle
Seven & i Holdings	Peanut Butter Flavor Tartrazine

Company	Ingredient
Petco Animal Supplies, Inc.	Nettle
St. Asaph's Bakery	Chamomile, Green Tea, Nettle, Rosehip
J M Smucker Co	Sardine, Scallop
Fleischeslust-Tiernahrung	Zucchini, Catmint, Emmental Cheese Powder

INTERESTED IN LEARNING MORE?

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