Cheese analog

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Objective

To create a technology landscape report on **Cheese Analog**

- Identify market players with prolific IP activity in the technology area
- Segment the players by the industry they belong to

Note: *This report is just a template and gives an indication of what the paid report contains.*

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Introduction



Fig.1. Cheese Analogue

Cheese is widely used as one of the preferential ingredient in fast foods and readymade conventional meals. However, high costs associated with natural cheese production and storage has prompted industry to search for alternatives. Attempts to reduce cheese cost have led to the development of cheese substitute called cheese analogues (Mounsey & Oriordan, 2001). Cheese analogues are usually defined as products made by blending individual constituents, to produce a cheese-like product to meet specific requirements. In cheese analogues, milk protein and milk fats are partially or wholly replaced with vegetable proteins and vegetable fats and oils. Cheese analogue are formulated and produced with desired nutritional, functional and storage properties as per the market and consumer needs.

Sales of cheese analogues are closely linked to developments in the convenience food sector (H.P. Bachmann, 2001). Cheese analogs are being used increasingly due to

- ♦ Cost effectiveness (due to low cost of vegetable oils compared with butter fat)
- ♦ Simplicity of their manufacture (no maturation)
- ♦ Can be tailor made
- ♦ Offer diverse functionality range (e.g. flowability, melt resistance, shredability, etc)
- ♦ Improved shelf life and exhibits high functional stability during storage
- ♦ Consistent in quality without seasonal variations

Classification of cheese analogues

Cheese analogs are categorized into three categories as dairy, partial dairy or non dairy, depending upon whether the fat and or protein components are from dairy or vegetable sources (Rupesh & Jana, 2007).

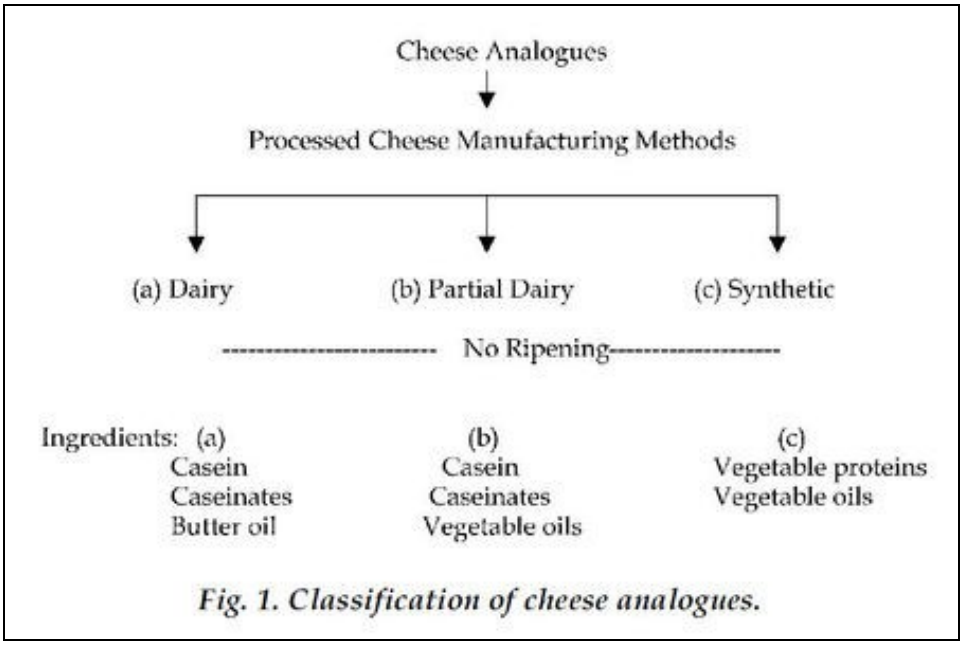


Fig. 1. Classification of cheese analogues.

Concept table

S.No	English Keywords	German Keywords	French Keywords
	Cheese Analog	Analog kase	Analogues fromage
1	Cheese analog	Analog kase	analogues fromage
2	Cheese substitutes	Kase ersatz	analogique fromage
3	*****	******	********

- *An indicative list of terms to show how a concept table is generated. View paid report for complete list.*
- *Concept Table was enriched by searches related to phytosterols and phytostanols, relevant patents, scientific articles and various thesauri*

Relevant class codes and definitions

IPC / ECLA	
A23C	DAIRY PRODUCTS, e.g. MILK, BUTTER, CHEESE; MILK OR CHEESE SUBSTITUTES; MAKING THEREOF
A23C 20/00	Cheese substitutes
******	**********
******	**********
******	**********
426	FOOD OR EDIBLE MATERIAL: PROCESSES, COMPOSITIONS, AND PRODUCTS
426104	IMITATED, SIMULATED, ORNAMENTAL, THREE-DIMENSIONAL PRODUCT OR CONFECTIONARY PRODUCT HAVING CHILD-ORIENTED UTILITY
*****	**********
*******	**********

Search strategy

Patents

THOMSON INNOVATION
Time line: 1.1.1991 to 10.11.2011

Database: US Grant, GB App, US App, FR App, WO App, DE Util, EP Grant, DE Grant, EP App, DE App, JP Util, JP Grant, JP App, CN Util, CN App, KR Util , KR Grant, KR App, DWPI				
S. No	**Concept**	**Scope**	**Search String**	**No. of hits**
	ENGLISH QUERY			
1	Cheese analog keywords	CTAB	((analog*3 OR **********))	### hits
2	Class for ingredients	Any IPC or ECLA	A23C0019**********	#### hits
		US Class	***** OR 426*****	
3	IPC or US class of ingredients and Cheese analog KW	Combined query	1 AND 2	####hits
4	Class for cheese analogs	Any IPC or ECLA	A23C0020***	####hits
5	**Final Combined query in English**		**1 OR 3 OR 4**	**#####(No relevant hits)**
	GERMAN QUERY			
1	Cheese analog keywords	CTAB	((Analog*3 or ********)	## hits
2	Class for ingredients	Any IPC or ECLA	A23C0019**********	### hits
3	IPC or US class of ingredients and Cheese analog KW	Combined query	1 AND 2	## hits
4	Class for cheese analogs	Any IPC or ECLA	A23C002000	##### hits
5	**Final Combined query in German**		**1 OR 3 OR 4**	**#### (No relevant hits)**
	FRENCH QUERY			
1	Cheese analog keywords	CTAB	((analogues or ********))	## hits
2	Class for ingredients	Any IPC or ECLA	A23C0019093 OR *******	##### hits
3	IPC or US class of ingredients and Cheese analog KW	Combined query	1 AND 2	### hits
4	Class for cheese analogs	Any IPC or ECLA	A23C0020**	####hits
5	**Final Combined query in French**		**1 OR 3 OR 4**	**####(No relavent hits)**
	Final combination of all languages search query			**####(### No relevant hits)**
1	Not keywords	Title	Machine or device or (beancurd) or **********	######## hits
2	**Final all lanuages Query NOT (Not Keywords)**			**#### (#### no relevant hits)**

Interactive taxonomy

```
        .markmap-node {
            cursor: pointer;
        }

        .markmap-node-circle {
            fill: #fff;
            stroke-width: 1.5px;
        }

        .markmap-node-text {
            fill:  #000;
            font: 10px sans-serif;
        }

        .markmap-link {
            fill: none;
        }

        pre, .mw-code{
          background-color: transparent;
        }
    d3.xml("https://www.dolcera.com/wiki/images/Cheese_Analog.mm", function(error, data) {
            if (error) throw error;

            markmap("svg#mindmap_fb46f094eff9da52214a4378b980a8e0", data, {
```

```
            preset: "colorful",
            linkShape: "diagonal"
        }, "xml");
    });
```

Relevant patents

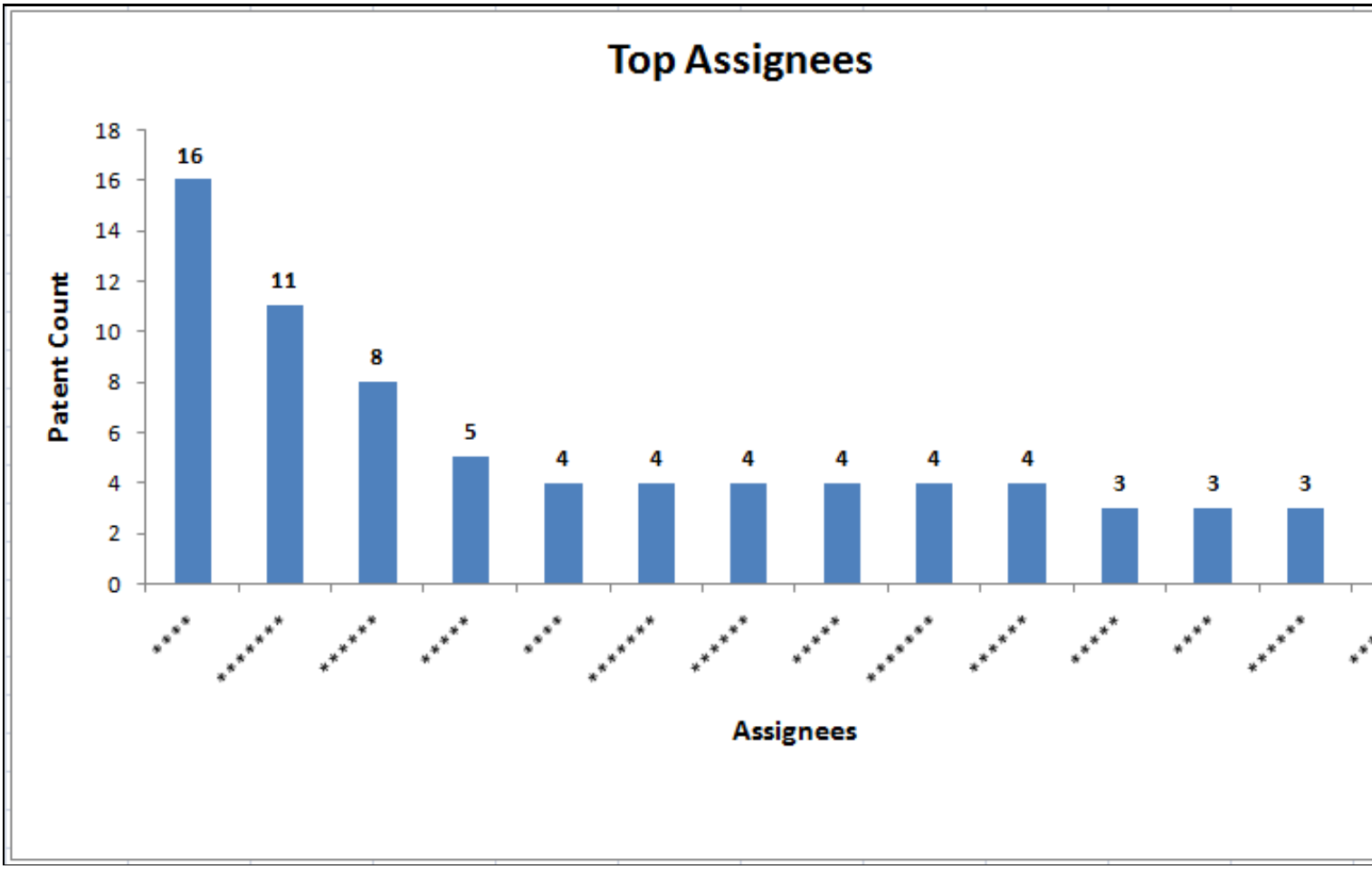
S.No.	Patent/Publication No.	Assignee / Applicant	Publication Year	Title	Focus	Dolcera Summary
1	WO2007136291A1	KRAFT FOODS	2007	COMPOSITION FOR PRODUCING ARTIFICIAL CHEESE	Preparation of cheese substitute composition	Artificial cheese composition was formulated using hardened vegetable fat and proteins like casein and collagen. It is less expensive because the high cost milk fat is replaced with vegetable fat. It has improved functionality and long storage life.
2	US20050220976A1	DAIRY CREST, UK	2005	Cheese substitutes	Preparation cheese substitute to imitate grated parmesan cheese	Parmesan cheese substitute with same smell, colour, flavour, appearance and texture of natural counterpart was formulated using plant based ingredients for food seasoning.

Analysis sheet

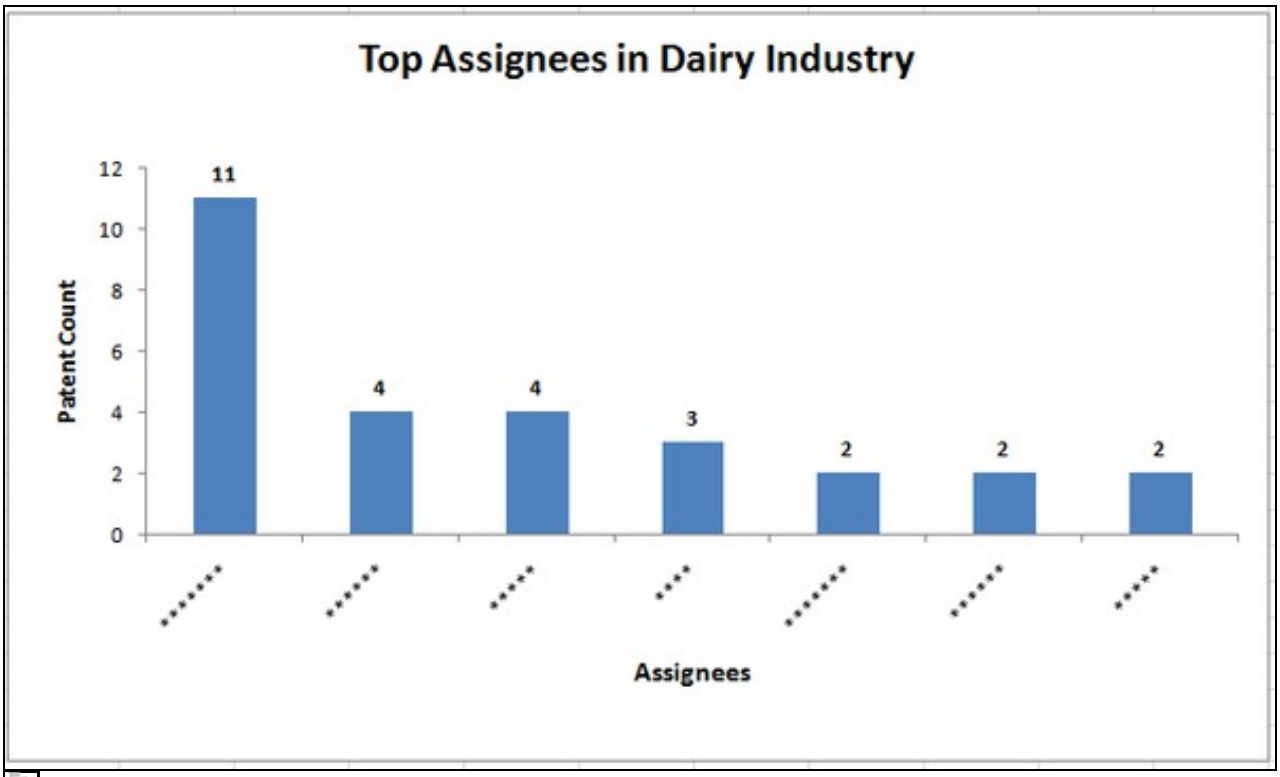
Click here to download the sample patents analysis sheet-Cheese Analog

Assignee analysis and IP activity

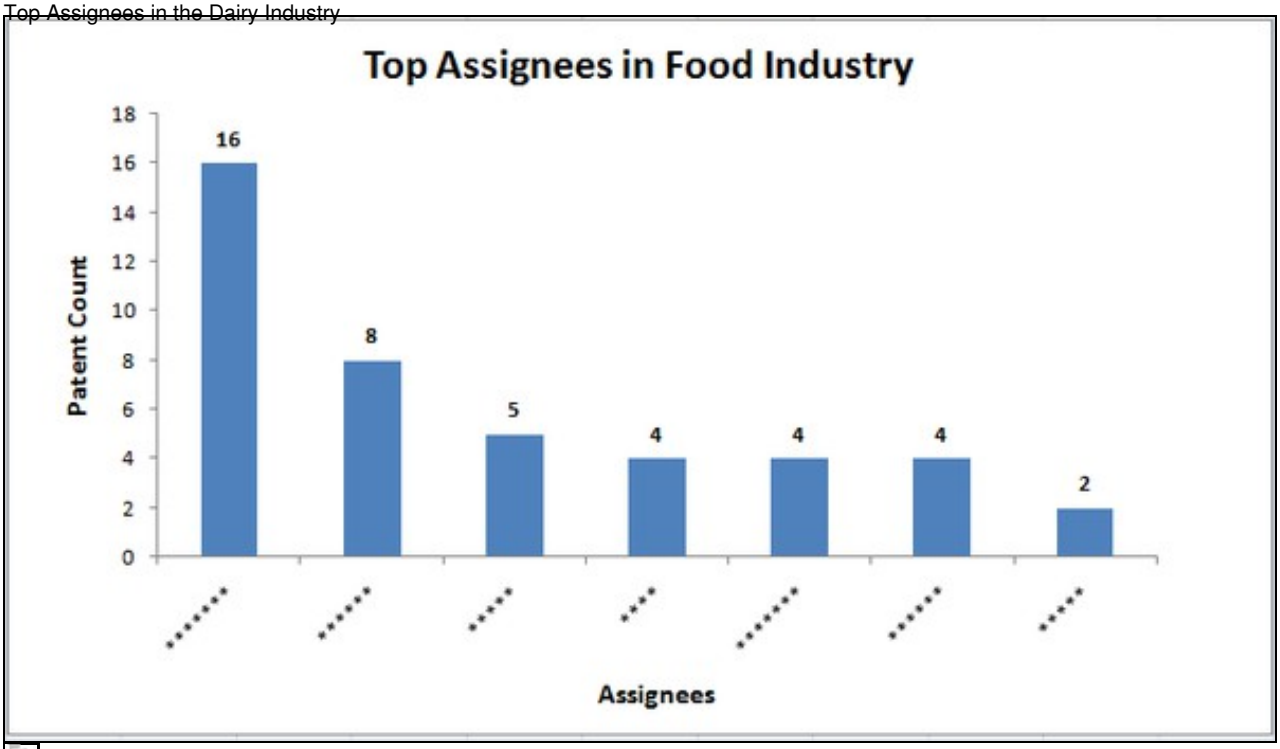
Top assignees



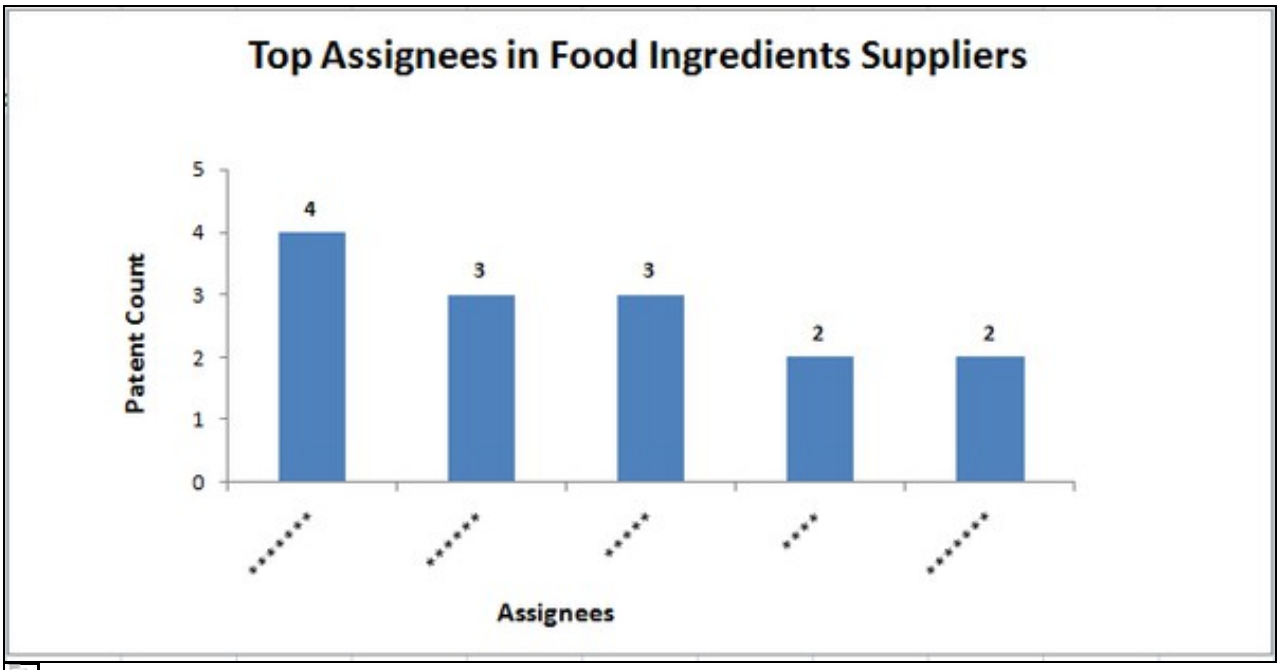
Top Assignees



Top Assignees in the Dairy Industry

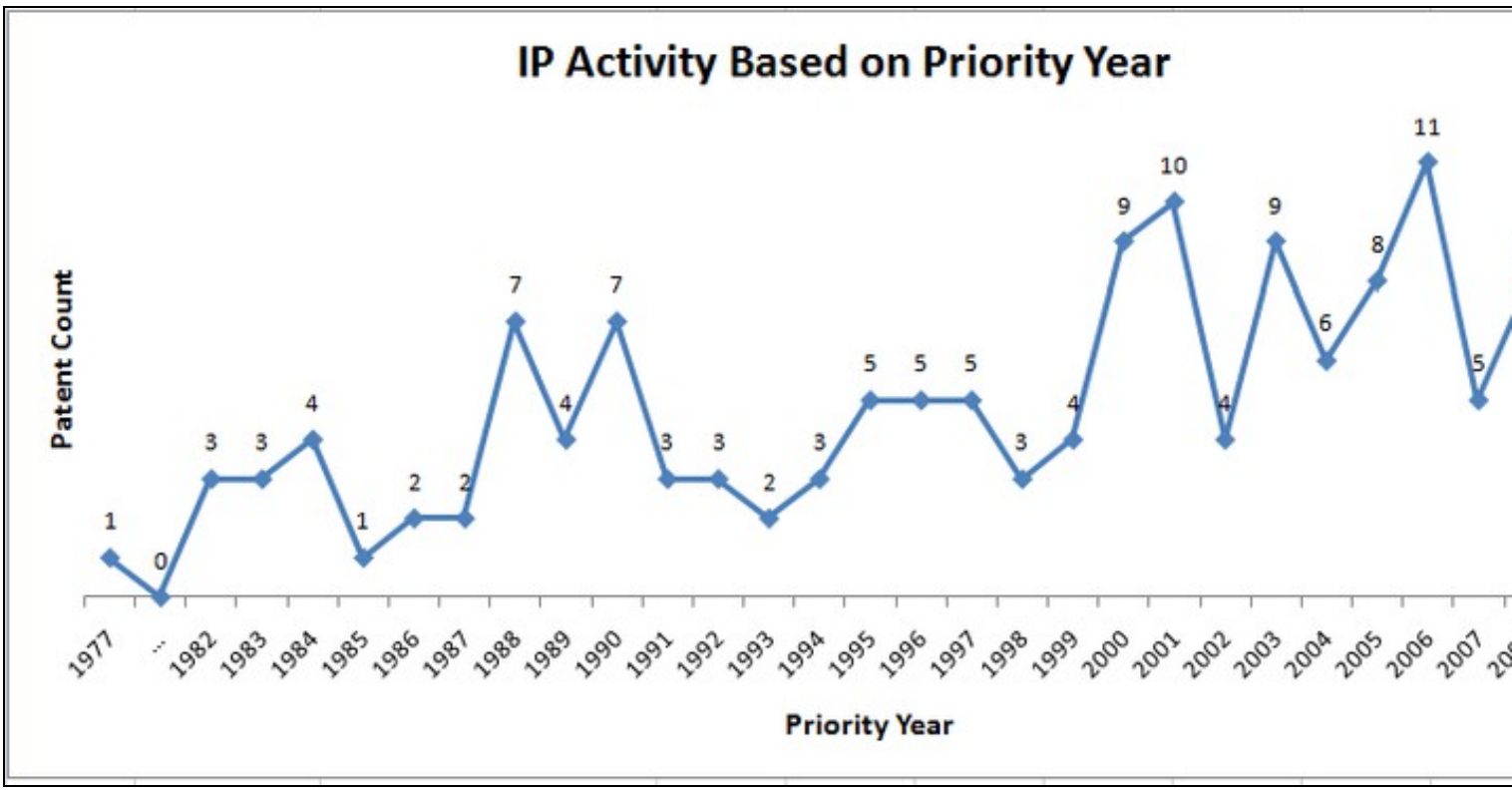


Top Assignees in the Food Industry

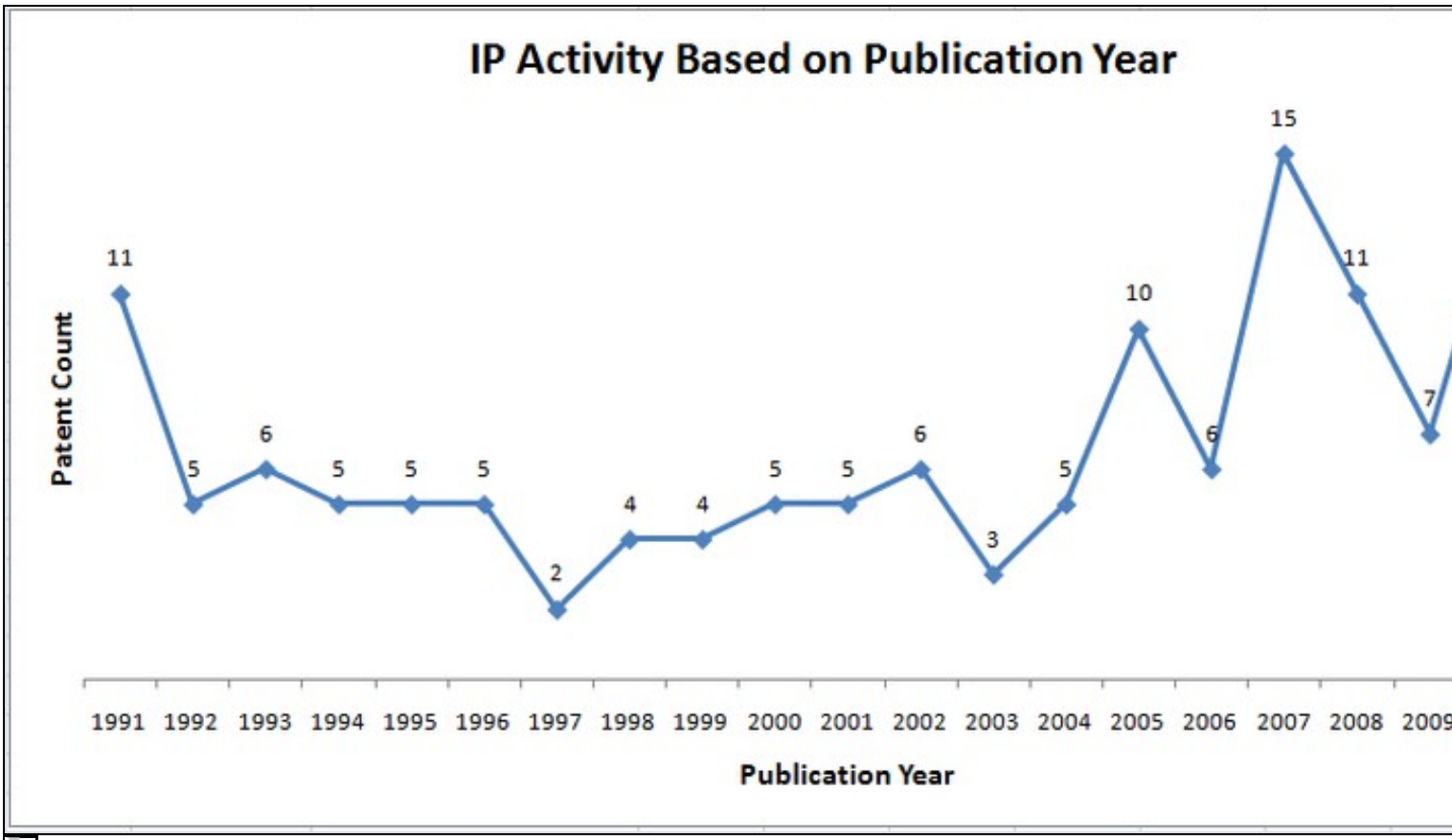


Top Assignees in the Food Ingredient Suppliers

IP activity

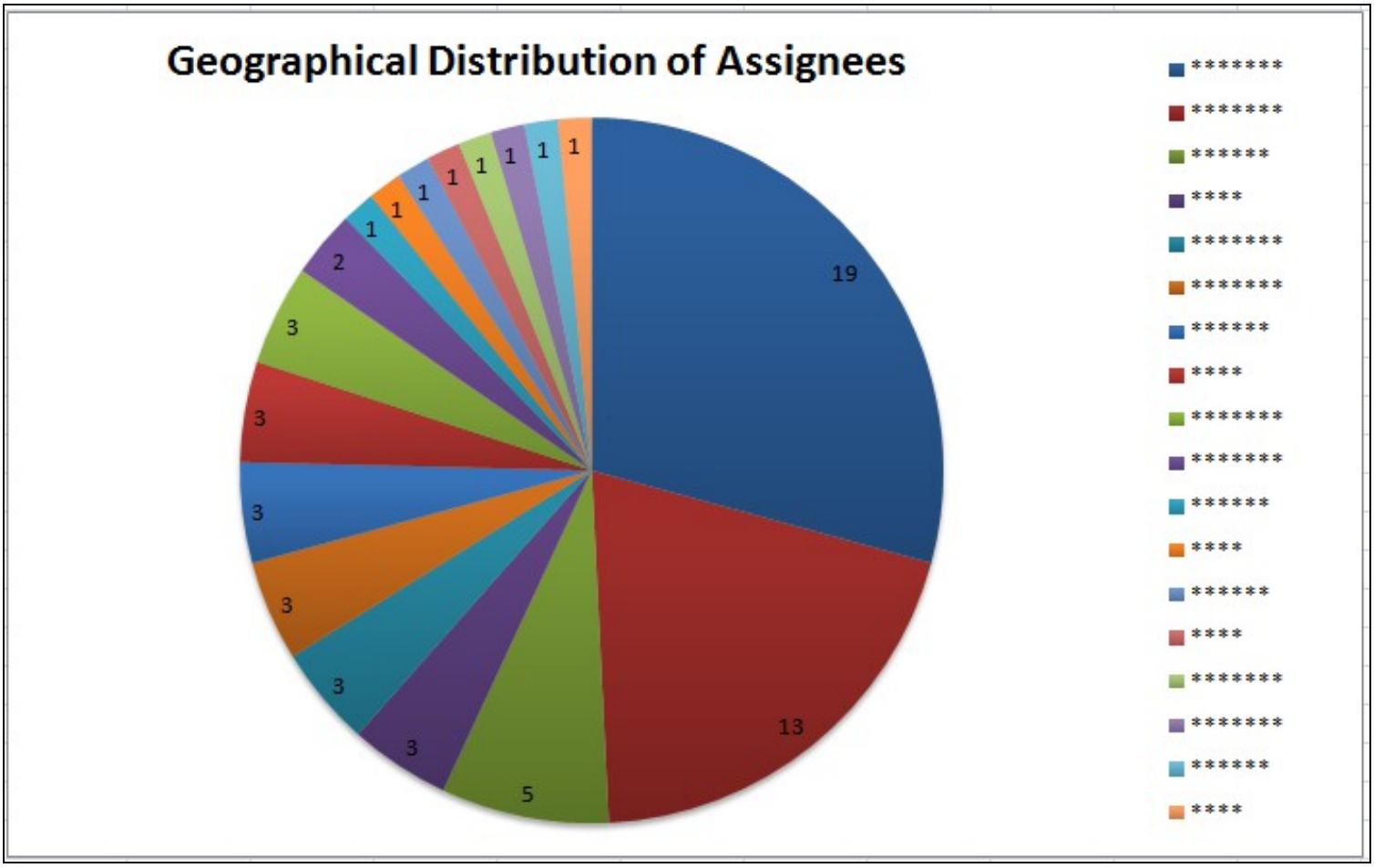


IP activity based on priority year

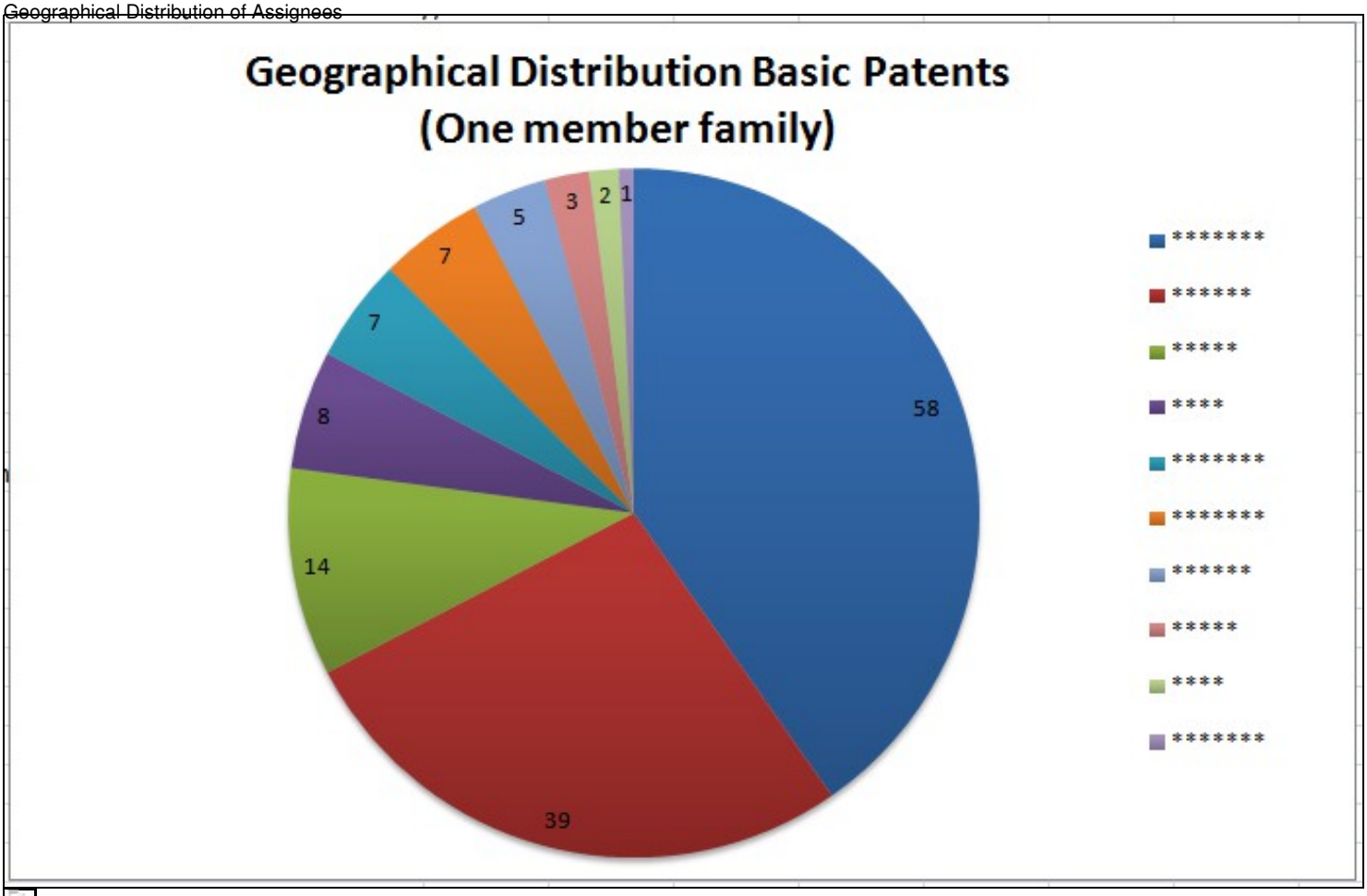


IP activity based on publication year

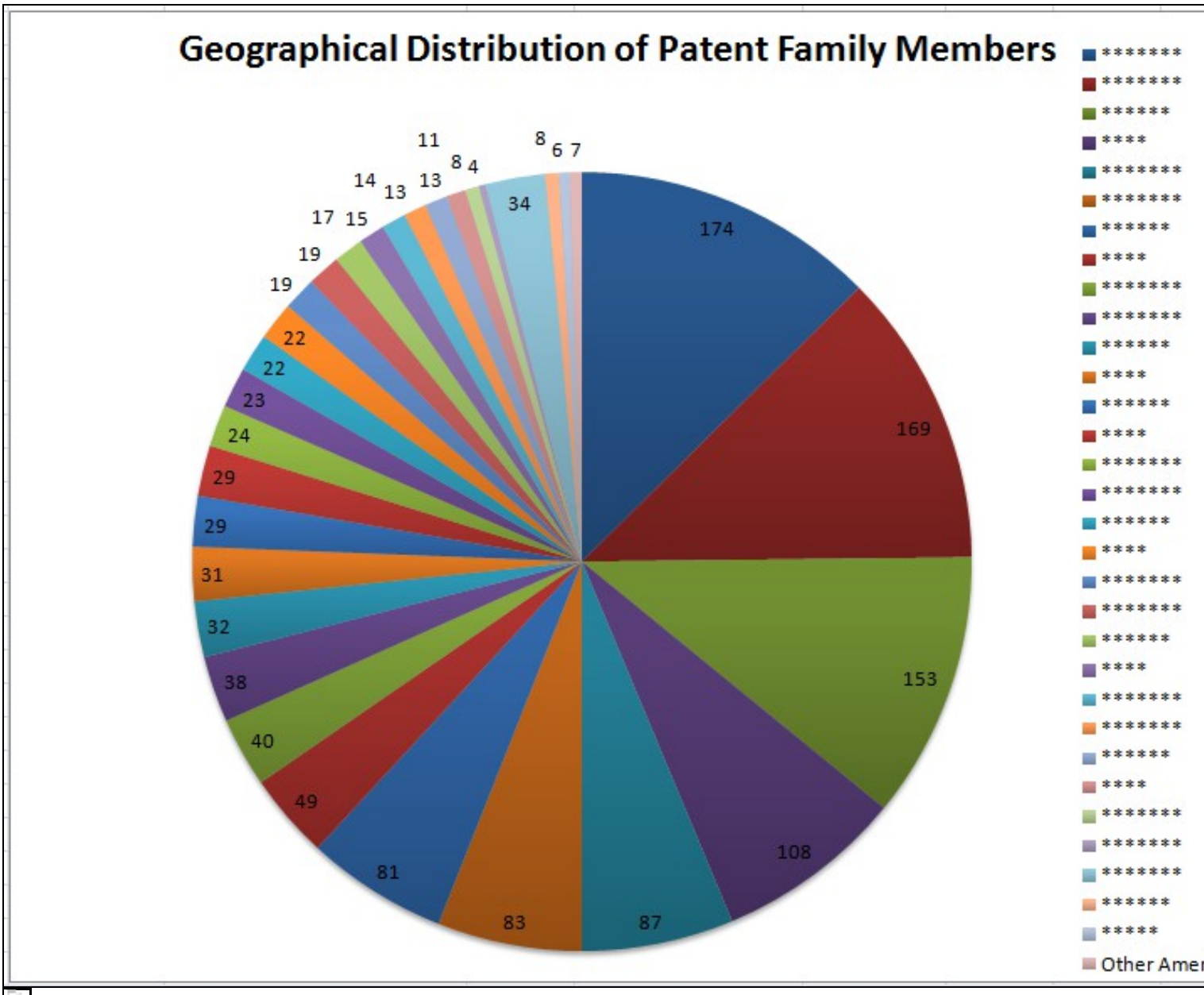
Geographical distribution



Geographical Distribution of Assignees



Geographical Distribution of Patents

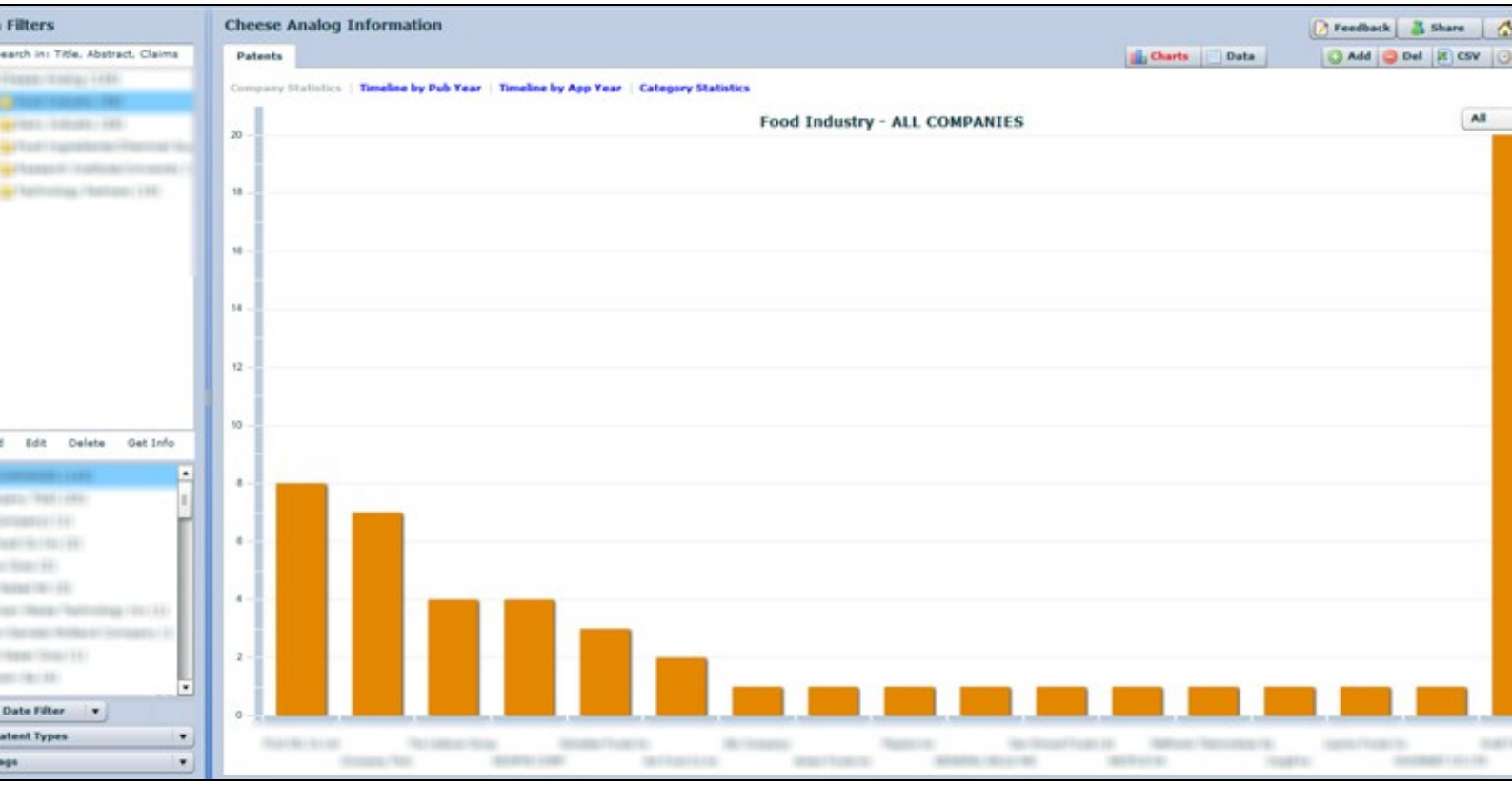


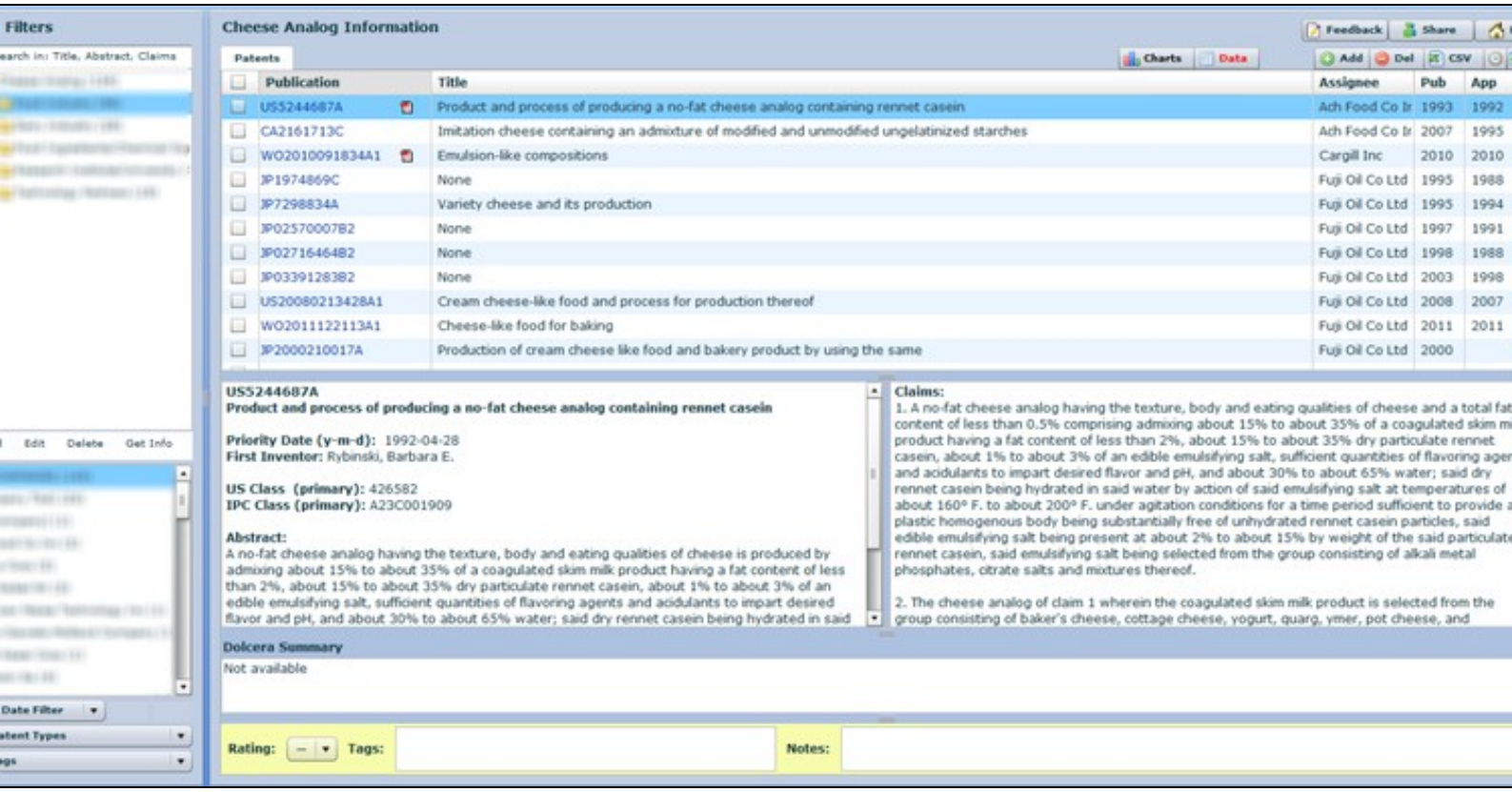
Geographical Distribution of Patent Family Members

Dash board

Assignees were categorized based on the type of their products viz. food,food ingredients, Personal care, Health care,other industries, research and educational institutions etc and their patents have been shown in the Dolcera Interactive Dashboard.

A data preview of the dashboard is shown below:





NOTE:

- Flash Player is essential to view the Dolcera dashboard.
- Patents for which data is not available are analysed based on DWPI data which can not be disclosed due to legal issues.

Patent product mapping

Some products with respect to this technology area were identified and mapped to the patents from their respective assignees.

S.No	Publication/Patent No.	Title	Assignee	Products
1	EP1240828A1	Consumable, viscoelastic, stringy composition, process for its production and dry product for use in the process	UNILEVER	Doriana
2	DE69605668T2	PROCESSED CHEESE TYPE PRODUCT AND PROCESS THEREFOR	UNILEVER	
3	**********	**********	**********	**********

*Click here to download patent to product mapping sheet- Cheese Analog

Scientific articles

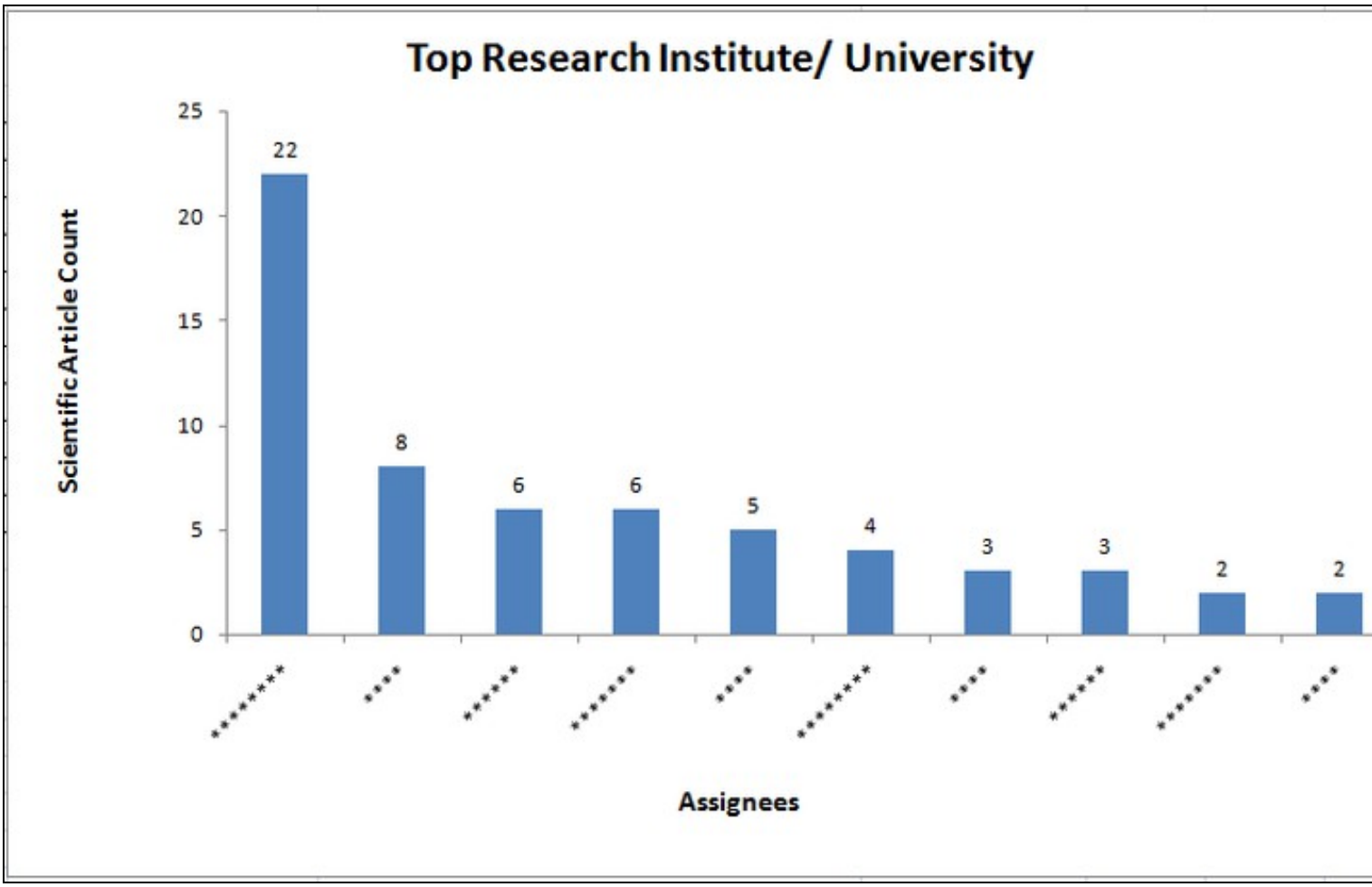
- **Database** : Scirus
- **Timeline** : 1991 - 2011
- **Subject Areas** : Agricultural and Biological Sciences; Chemistry and Chemical Engineering; Engineering, Energy and Technology; Life Sciences; Medicine and Pharmacology.
- **Information Types** : Abstracts, Articles, Articles in Press, Books, Conferences and Reviews.

S.No	Scope	Concept	Search String	Total Hits
1	Complete documents	Cheese Analog	"Cheese analog*" or "analog cheese*" or ********	#### (### Rrelevant articles)

Relevant scientific articles

*Click here to download relevant scientific articles sheet- Cheese Analog

- **The following graphs explain the placement of different Research Institutes and Universities in this technological area.**



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