

2.3) HIGH PRESSURE PROCESSING OF FRUIT AND FRUIT PREPARATIONS TO PRESERVE AND ENHANCE MICROBIAL STABILITY OF THESE PRODUCTS (WP 3.1)

Isafruit output: A process ready to be scalable at industrial level that will allow to preserve quality and enhanced microbial stability of fruit, fruit preparations and desserts for the catering industry using high pressure technology (HPP). New HPP process will be used as well as new packaging to reach our goals. Also for both tasks, new products will be design to

2.3. A TRENDS IN TECHNOLOGY

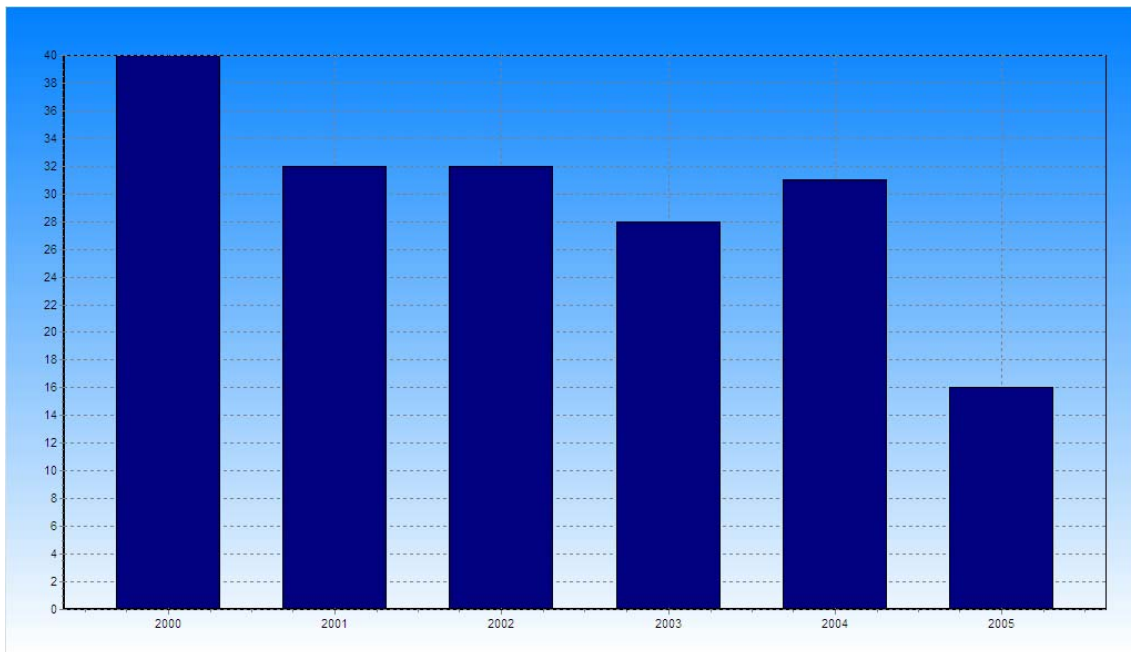


Figure 6. Worldwide effort made in patenting on preservation by pressure technology since 2000

The inventive activity in this field seems to be similar to the previous case. The trend during the last 5 years appears to be stable, considering that the data for 2005 may not be complete (at the moment of making this study, some patents in 2005 may not have been published yet). This could be interpreted as an opportunity for ISAFRUIT partners to invest in protecting the expected output

2.3.B PATENT ACTIVITY PER COUNTRY

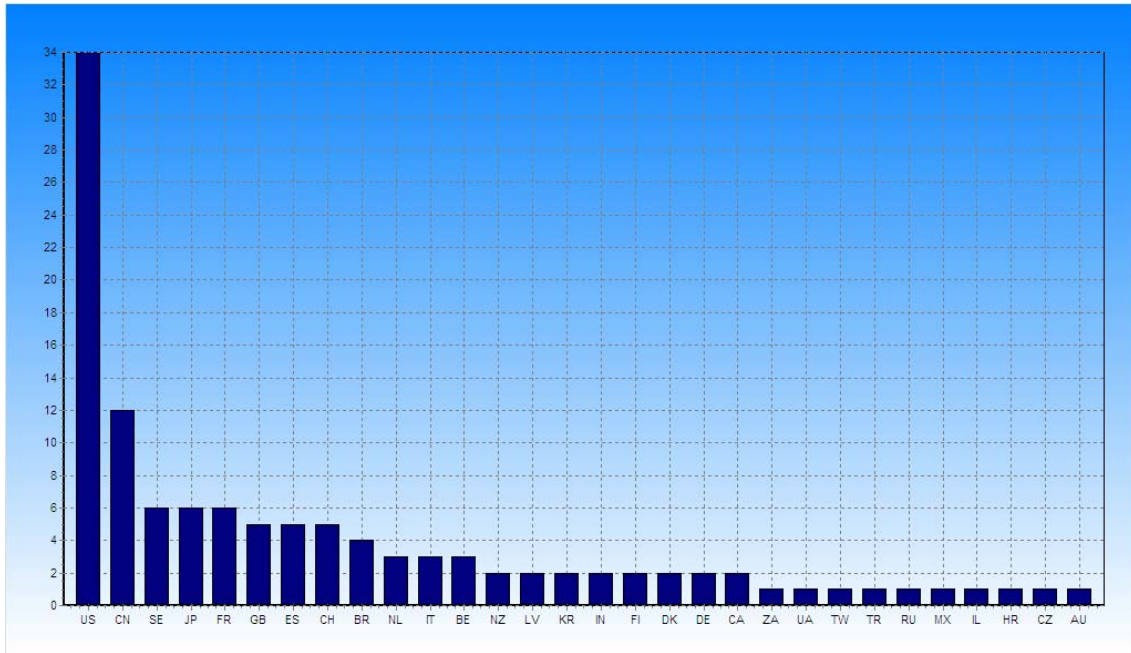


Figure 7. Patents filed per country, since 2000, one member per patent family only for preservation by pressure

According to the data shown in Figure 7, US is the leader on inventive activity in this field (34 patents), followed by China (12), Sweden, Japan and France (5).

2.3.C COLLABORATION WORK

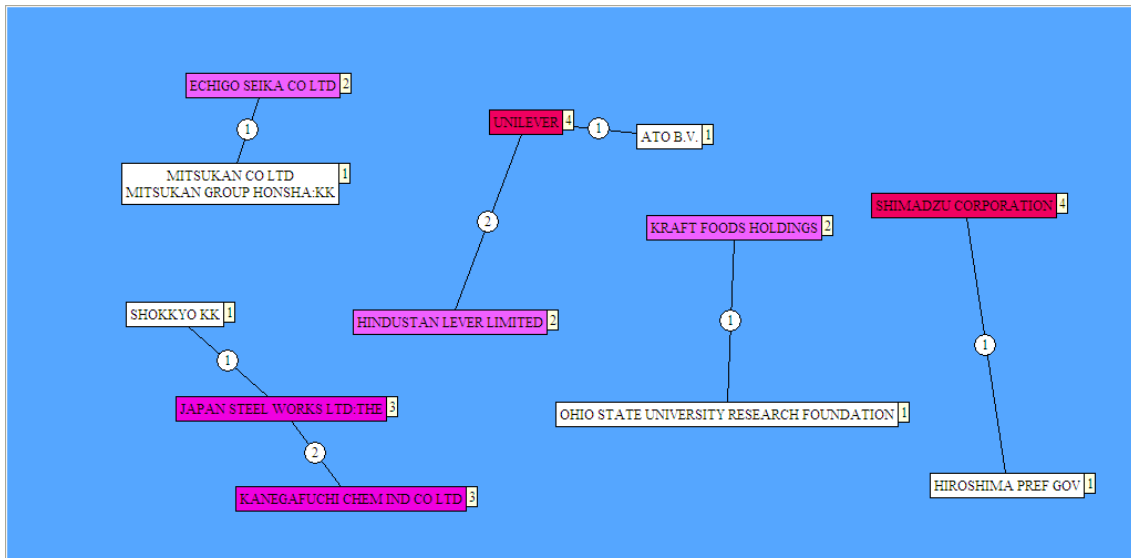


Figure 8 Organisations patenting together in preserving by pressure

- Mitsukan (JP) -Echigo Seika (JP)
- Shimadzu Corporation (JP) -Hiroshima Pref Gov (JP)
- ATO B.V (NL) – Unilever (US) - Hindustan Lever Limited (IN)
- Ohio State University Research Foundation (US) -Kraft Foods Holdings (US)
- Shokkyo KK (JP)-Japan Steel Workd (JP)

Figure 8 shows what we consider a good example of collaboration between academia and industry: the case of the patent between Kraft Foods and the University of Ohio (Methods for preserving food products, ZA20050590). Other collaborations between Japanese companies seem to be relevant. European industry and academia are less active in patenting together with a third party.

2.3. D THE MOST ACTIVE ORGANISATIONS

⇒ In the world:

NAME OF THE ORGANISATION	N°patents	Country
FLOW INTERNATIONAL CORPORATION	5	US
AVURE TECHNOLOGIES	5	SE
UNILEVER	4	US
SHIMADZU CORPORATION	4	JP
JAPAN STEEL WORKS LTD	3	JP
KANEGAFUCHI CHEM IND CO LTD	3	JP
MORINAGA MILK INDUSTRY CO.	3	JP
INNOVATIT SEAFOOD SYSTEMS	3	US
FREEZING MACHINES	3	US
L'AIR LIQUIDE	3	FR
SHIMADZU CORP	3	JP

Table 7. List of companies and organisations outside the EU with patents in the preservation by pressure field

⇒ In Europe

NAME OF THE ORGANISATION	N°patents	Country
AVURE TECHNOLOGIES AB	5	SE
L'AIR LIQUIDE	3	FR
STEAMLAB SYSTEMS AG NATURAL PASTEURIZATION	2	DK
IGARANE MEDIOS	2	ES
FLOW HOLDINGS SAGL	2	SE
SOLICH GESELLSCHAFT M.B.H	1	DE
VYZKUMNY USTAV POTRAVINARSKY PRAHA	1	CZ
DELTA PROCESS ENGINEERING APS	1	DK
LBG INVEST & CONSULTING N.V.	1	BE
AMAHE	1	ES
SOCIEDAD ESPAÑOLA DE CARBUROS METALICOS	1	ES
CAMBRIDGE CONSULTANTS LIMITED	1	GB
SAITEC S.R.L.	1	IT
K.U. LEUVEN RESEARCH & DEVELOPMENT	1	BE
KARIM ALLAF	1	FR

NAME OF THE ORGANISATION	N°patents	Country
FRITZ KORTSCHACK	1	DE
SIG SIMONAZZI S.P.A.	1	IT
MICVAC AB	1	SE
TETRA LAVAL HOLDINGS & FINANCE SA	1	CH
FRIGOSCANDIA EQUIPMENT AKTIEBOLAG	1	SE
SIERSEMA SCHEFFERS B.V.	1	NL

Table 8. List of companies and organisations in the EU with patents in the preservation by pressure field