

ANNEX M

Statistics for Poland

CROPPING AND STOCKING PATTERNS FOR AGRICULTURE AND HORTICULTURE

Harvest and production of major agriculture crops (harvest in thous. tonnes)

Specification	1996-2000	2000	2001	2002 Total
Cereals	25189	22341	26960	26877
– of which basic cereals including cereal mixed	20795	21344	25540	24876
wheat	8772	8503	9283	9304
rye	5160	4003	4864	3831
barley	3420	2783	3330	3370
oats	1437	1070	1305	1486
triticale	2006	1901	2698	3048
cereal mixed for grain	3779	3084	4060	3836
Maize for grain	557	923	1362	1962
Pulses for grain		264	211	135
– of which edible	100	93	88	95
– pulses for feed	182	171	123	134
Potatoes	23620	24232	19379	15524
Sugar beets	14920	13134	11364	13434
Oil-bearing	866	971	1082	968
– of which rape and agrimony	847	958	1064	953
Flax- straw	8.6	7.9	10.2	10.1
Tobacco	36	30	24	21
Hop	2.6	2.5	2.4	2.4
Feed root plants	4999	5057	4431	2140
Hay: total	19996	36739	55556	70801
Straw from basic cereals	21944	18387	21794	20979

Source: Statistical Yearbook of Poland 2003 and <http://www.stat.gov.pl/> (2003), °data not available by CSO yet

Yields of major crops from 1 ha [dt]

Specification	1996-1999	2000	2001	2002	
				Total	Of which private farms
Cereals	28.6	25.3	30.6	32.4	31.1
Pulses	19.2	18.7	19.4	20.5	19.6
Potatoes	183	194	162	193	191
Sugar beets	377	394	358	443	439
Rape and agrimony	20.7	21.9	24.0	21.6	20.5
Feed root plants	408	400	390	419	423
Straw from basic cereals	30.3	25.8	30.8	31.9	30.9
Cereals, potatoes, and sugar beets (counted in cereals)	28.4	25.9	29.7	32.1	30.9

Source: Statistical Yearbook of Poland 2003

Purchase of major crops in Poland

Specification	1991 – 1995	1995	1996-1999	2000	2001	2002	
						Total	In % of production
Cereals [thous. t]	4252	4604	5596	7089	6934	7940	29.5
wheat	2574	2651	3662	5206	4815	5439	28.0
rye	838	1132	876	677	805	872	22.8
barley	442	393	420	357	310	386	11.4
oats and cereal mixed	71	76	86	64	55	64	1.2
triticale	94	90	128	158	168	210	6.9
Pulses [thous. t]			4.9	4.9	2.9	4.5	4.7
Potatoes [thous.t]	1167	731	1165	1278	1138	1269	8.2
Sugar beets [m t]	12.6	13.3	14.9	13.1	11.3	13.4	99.9
Rape and agrimony industr. [thous. t]	724	1216	795	896	997	851	89.6

Source: Statistical Yearbook 2003

CURRENT INDUSTRIAL CROPS

Oil Crops

Rapeseed

Area of cultivation, yields and harvest of rapeseed and agrimony

Year	Cultivation area [‘000 ha]	Yield [t/ha]	Harvest [‘000 t]
1990	500.4	2.41	1206.0
1991	467.8	2.23	1042.7
1992	417.1	1.82	758.2
1993	348.5	1.71	594.4
1994	370.3	2.04	755.7
1995	606.4	2.27	1376.6
1996	282.6	1.59	449.3
1997	317.4	1.87	594.9
1998	466.0	2.36	1099.1
1999	545.3	2.08	1131.9
2000	436.8	2.19	958.1
2001	443.2	2.40	1063.6
2002	439.0	2.17	952.7
2003	426.3	1.86	793.0

Source: Source: Statistical Yearbook 2003

Fibre Crops

Flax and hemp

Flax and hemp cultivation area [thous. ha]

Year	Flax	Hemp
1989	34.3	2.1
1990	29.6	0.7
1991	9.7	0.1
1992	5.5	0.0
1993	4.0	0.1
1994	8.1	0.4
1995	13.8	0.3
1996	5.9	0.2
1997	3.7	0.3
1998	2.4	0.1
1999	3.1	0.1
2000	4.1	0.1
2001	5.2	0.1
2002	5.1	0.1
2003	3.0	0,1

Source: CSO, Poland

Carbohydrate Crops

The major source of carbohydrates for industry in Poland is potatoes. In the year 2002; 15.5 million tonnes of potato were harvested.

Cultivation area, yield and crop (harvest) of potatoes

Specification	1997	1998	1999	2000	2001	2002
Cultivated area [ha]	1.31	1.29	1.27	1.25	1.19	0.80
Change compare to the previous year [] *	-2.6	-0.9	-2.1	-1.3	-4.6	-27.7
Yield [t/ha]	15.9	20.0	15.7	19.4	16.2	19.3
*	-21.7	-25.8	-21.5	-14.9	-16.5	14.2-20.4
Crop (harvest) [Mio t]	20.8	25.9	19.9	24.2	19.4	15.5
*	-23.7	-24.9	-23.2	-21.4	-19.8	-13.2-17.8

Source [4]: Rynek ziemniaka (Potato Market), W. Dzwonkowski et al. IERiGZ, Warsaw. 2002. Based on data of Central Statistical Office (CSO), Warsaw

Potato Balance Sheet ('000 tonnes)

Item	1996/97	1997/98	1998/99	1999/000	2000/01	2001/02	2002/03
Crops-harvest	27217	20776	25949	19927	24232	19379	15 500-
Imports	35	66	24	131	39	71	30
Total supply	27252	20842	25973	20058	24271	19411	16070-16870
On-farm use:	18541	14496	18385	14638	17150	13256	9789
–seed	3100	2950	2950	2850	2850	2064	1900
–feed	12791	8896	12735	9158	11650	8592	5289
–self-consumption	2650	2650	2700	2630	2650	2630	2600
Total sales	4211	3356	3826	2969	3729	3384	3740
–for consumption	2352	2147	2089	2000	2000	1960	1960
–for industrial use*	2067	1140	1562	908	1655	1405	1695
–exports	72	69	175	61	84	19	140
Losses	4500	2990	3763	2451	3392	2810	1970

* industrial use irrespectively of the branch, Source: CSO. [4]

Crops with special uses

Medicinal plants and pharmaceutical preparations

The area of herbal crops in Poland equals up to 35,000 ha, while medicinal plants plantations area in Poland equals up to 20,000 ha. The detailed data regarding the cultivation area of particular medicinal plants are not available, due to the fact that there are approximately 20,000 plantations to approach.

The annual production of raw material obtained from such plantations is 15,000-17,000 tonnes. The annual demand for herbal raw material in Poland is 26,000 tonnes, while 17,000 tonnes are obtained from special plantations, 5,000 tonnes from natural environment and 4,000 tonnes from import. The production of herbal raw material from plantations of herbs equals 17,000 tonnes of dry mass, which contains about 1/4 of production of countries of European Union. The dry mass of medicinal plants consumed by pharmaceutical industry is approx. 20,700 tonnes.

The cultivation of herbal plants in Poland, purchase and production. Average year data for 1980 – 2002

Total area [ha]	Number of farms	Number of main cultivated species	Annual production of herbs [t]	Max buy up [tonnes]	Min buy up [tonnes]
30,000	20,000	70	17,000	In 1986: 24,000	In 1980: 8,500

Source: Dr. Jerzy Jambor, PhytoPharm Kleka S.A., Kleka

Herbal raw material from natural environment, purchase and production. Average year data for 1980 – 2002

Number of main cultivated species of medicinal plants	Annual harvest [tonnes]	Annual production of herbs	Max buy up [tonnes]	Min buy up [tonnes]
100	3,500-5,000	From 100 kg to 750 t	In 1978: 5,600	In 1980: 3,200

Source: Dr. Jerzy Jambor, PhytoPharm Kleka S.A., Kleka

INDUSTRIAL CROP PRODUCTS AND ESTIMATE TRENDS IN PRODUCTION FROM 1998 TO 2003 (AND IF POSSIBLE THEREAFTER)

Oil crops

Products based on rapeseed oil: edible plant oil, hard and soft margarine, methylated and ethylated esters of rapeseed oil, rapeseed cake for fodder

The production of vegetable fats in past decade [‘000 tonnes]

Years	Vegetable edible fats total	Refined oils for sale	Margarine
1990	279.5	76.6	179.1
1991	289.0	70.0	194.0
1992	356.0	94.3	234.0
1993	422.8	124.1	276.3
1994	486.0	114.8	319.8
1995	550.0	149.1	373.6

1996	568.4	170.1	368.1
1997	642.0	207.0	394.5
1998	663.0	207.8	362.5
1999	704.8	246.7	367.3
2000	673.0	250.0	384.0
2001	699.0	220.4	380.2
2002	700.0	240.0	369.1
2003*	680-700	210.0	360.0
2004**	710.0	220.0	370.0

Source: Rynek rzepaku 2004 (Rapeseed Market), * Prognosis of IERiGZ, ** estimation of IERiGZ (Institute of Agriculture and Food Economy).

Fibre crops

Production and markets of flax products

Item	1997	1998	1999	2000	2001	2002	2003
Dew retting [%]	100	100	100	100	100	100	100
Mill consumption of flax [t]	6288	5074.8	1882	2321	6123	6880	*6760
Yarn production [t]	3820	3024	889	1362	5950	6669	*740
Production of textiles [1000 m]	11298	7658	4607	4563	3953	4380	*4500
Export of linen textiles (fabrics) [1000 m]	7778	4875	4480	3241	2371	2550	*3100

Source: H. Smarzynski, Polish Flax Foundation, Institute of Natural Fibres, Poznań, Poland (1996-2000); * Institute of Natural Fibres estimations, Polish Flax and Hemp Chamber (2004)

Data on export and import of fibre and linen products in Poland in 2003.

Specification	Export in thous. USD	Import in thous. USD
Scutched flax fibre	2,137	10,661
Linen tow and waste products	2,255	3,789
Linen yarn total	24,840	9,877
Linen fabrics total	21,302	31,552

Source: Ministry of Economy, Labour and Social Policy

The production of hemp goods is rather low, and it is difficult to gain the statistical data regarding the textile hemp production. Per year 20-30 tonnes of seeds are produced for reproduction, mainly for export. [1A]

Carbohydrate crops

Industrial processing of potato

Direction of usage	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03*
['000 tonnes]							
For starch	940	470	806	335	815	690	910
For alcohol	847	212	223	83	215	100	100
For dry potato	97	212	233	140	175	85	100
For other food applications	183	246	317	350	450	530	600
Total processing	2067	1140	1579	908	1655	1500	1610

*Prognosis

Source: Data of “POLZIEM” Sp. z o.o., Ministry of Finances, CSO-Central Statistical Office, Warsaw, information from companies etc.

Industrial products obtained from starch in Poland are described in the Part III

Crops for special uses

Medicinal plants and pharmaceutical preparations

Purchasing of herbal raw materials in Poland. Average year data for 1995 – 1999

Purchasing value	Raw Materials
over 1,000 tonnes	Matricariae flos, Menthae piperitae folium, Valerianae radix Carduri mariae fructus
500–1,000 tonnes	Hippocastani semen, Thymi herba, Hyperici herba, Oenotherae semen
200 – 500 tonnes	Tiliae flos, Mellisae folium, Boraginis semen
100 – 200 tonnes	Aroniae fructus, Frangulae cortex, Sambuci fructus, Betulae folium, Quercus cortex, Salicis cortex, Hippocastani cortex, Urticae folium, Cynarae herba, Visci albi herba
50 – 100 tonnes	Equiseti herba, Sambuci flos, Crataegi inflorescentia, Taraxaci radix, Salviae folium, Millefolii folium, Farfarae folium, Viola tricoloris herba
10 – 50 tonnes	Agropyri rhizoma, Calami rhizoma, Levistici radix, Calendulae anthodium, Chelidonii herba, Phaseoli pericarpium, Althaeae radix, Arnicae anthodium, Galegae herba, Organi herba, Angelicae radix
5 – 10 tonnes	Inulae radix, Euphrasiae herba, Cichorii radix, Meliloti herba, Cnici herba, Anthemidis anthodium, Convallariae herba, Malvae arboeae flos

Source: Dr. Jerzy Jambor, PhytoPharm Kleka S.A., Kleka

The best sold herbal medicinal products in Poland

The annual value of the sale of each of the drug over 1 m USD

No	Name	Shape (form)	Producer	The components of plant origin
1	Geriavit	Capsules	PHARMATON (CH)	Ginseng extractum sic.
2	Amol	Liquid	ROLAND (D)	Oleum Citronellae, Oleum Myristicae, Oleum Caryophylli, Oleum Cinnamomii, Oleum Citri, Oleum Mentae, Oleum Lavandulae
3	Sylimarol	Pills	HERBAPOL POZNAŃ (PL)	Silybi mariani fructus extractum siccum
4	Raphacholin C	Pills	HERBAPOL WROCLAW (PL)	Raphani radix recens extractum sic., Cynarae herba extractum sic.
5	Bilobil	Capsules	KRKA (SLO)	Ginkgo bilobae extractum siccum
6	Wyciag ze Skrzypu Polnego z Witaminami	Tablets	VITAMEX (S)	Equiseti extractum sic., Urticae extractum sic.
7	Urosept	Pills	HERBAPOL POZNAŃ (PL)	Extractum sic.: Petroselini radix, Phaseoli pericarpium, Betulae folium, Chamomilae anthodium, Vitis idaeae folium

No	Name	Shape (form)	Producer	The components of plant origin
8	Oeparol	Capsules	AGROPHARM (PL)	Oenothera paradoxa oleum
9	Tablets Uspokajajace --	Tablets	LABOFARM (PL)	Melissae folium, Leonuri cardiacae herba, Valerianae radix, Lupuli strobili, Menthae piperitae folium, Lavandulae, flos
10	Poldanen	Tablets coated	HERBAPOL POZNAŃ (PL)	Pygei africana cortex extractum sic.
11	Alax	Pills	HERBAPOL POZNAŃ (PL)	Alona, Glycyrrhizae radix, Frangulae cortex extr., Atropa radix
12	Sirupus Plantaginis	Syrup	HASCO-LEK (PL)	Plantaginis extractum fluidum
13	Tadenan 50	Capsules	DEBAT (Fournier Group) (F)	Pygei africana cortex extractum sic.
14	Cardiol C	Drops	HERBAPOL WROCLAW (PL)	Tinc. Convallariae titr., Tinc. Valerianae, Tinc. Crataegi, Colae extractum fluidum
15	Boldaloin	Tablets	HERBAPOL WROCLAW (PL)	Aloe extractum sic., Boldinum
16	Kalms	Tablets	G.R.LANE HEALTH PRODUCTS (GB)	Lupuli strob. pulvis, Valerianae extractum sic., Gentianae extractum sic
17	Esberitox N	Tablets	SCHAPER AND BRUMMER (D)	Thujae herba extractum sic., Echinaceae rad. extractum sic., Baptisiae extractum sic.
18	Echinacea	Tablets	RATIOPHARM (D)	Echinaceae angustifoliae radix extractum sic.
19	Pyrosal	Syrup	HERBAPOL WROCLAW (PL)	Extractum fluidum: Farfarae folium, Sambuci flos, Tiliae inflorescentia, Salicis cortex; Fructus Ribis Concentratum
20	Melisana	Liquid	KLOSTERFRAU (D)	Extractum: Melissae fol., Inulae rad., Angelicae rad., Zingiberis rhiz., Piperis nigri fruct., Gentianae rad., Myristicae sem., Phaseoli pericar., Cinchonae cort., Casiae flos, Cardamomi fruct.

Source: Dr. Jerzy Jambor, PhytoPharm Kleka S.A., Kleka

Despite a growing economic significance of herbal food and cosmetics, the greatest influence on the Polish herbal market in the present decade will have the manufacture of herbal pharmaceutical preparations. The domestic market of herbal medicines with almost 3,000 authorised and implemented products is estimated to be about 200 million USD. This is about 10 % of the entire pharmaceutical market and almost 1/3 of the OTC medicine market. The forecast for the next years shows that the development of self-medication shall go together with an intensive development of the OTC (Over the Counter) medicines market, especially herbal medicines.

The general manufacture of herbal raw material in Poland is estimated to be about 20,000 tonnes per year, including 1/5 from natural resources and 4/5 from cultivation. There is an opinion that if farmers treat the herbal raw material as pharmaceutical raw material (with high quality) and the herbal processing is changed into a modern pharmaceutical industry, Poland may become an important manufacturer of raw material and processed herbs in the world.

Cosmetics and essential oils

The mass of herbal raw material used for the production of cosmetics is about 1300 tonnes per year.

The total use of essential oils for aromatherapy, including the usage for the fragrances and cosmetics is approx. 60 tonnes per year. In 2001 the purchase of cumin essential oil, produced in Poland equalled 10kg. The forecast predicts the constant growth of the herbs use for the production of cosmetics and essential oils.

Condiments (spices)

There is a commercial production of herbs for condiments uses. The herbal raw material applied exclusively for condiments (spices) is cultivated on 12,000 ha.

Natural products for plant protection, produced in Poland

Bioczos BR – Producer: PPH “HIMAL” Lodz

Based on extract from garlic (active substance allicin). Inhibits the growth and development of fungi (e.g. Phytophthora on flowering plants, Erysiphe on decorative plants) and bacteria of plant diseases.

Biosept 33 SL – Producer: Cintamani Poland – Piaseczno.

Based on the extract from grapefruit. Inhibits the growth and development of fungi (e.g. species *Phoma* on several plants from the *Ameryllidaceae* (*Hippeastrum*, *Narcissus*).

Polyversum – Producer: Biopartner S. C. Poznań.

Biologically active substance: oospores of fungus *Pythium oligandrum*. It is present in roots area of several crops (rape and all cereals). It is antagonist towards the following pathogenic fungi: *Fusarium*, *Phytophthora*, *Phoma*, *Alternaria*, *Perenoplasmopara*, *Botrytis*.

Adpros 850 SL – Producer- Varichem T. Ostrowski- Huta Zabikowo. Biologically active substance: fatty acids of rape oil.

Olejan 85 EC – Producer: Towarzystwo Chemiczne “ Danmar” Lodz. Biologically active substance: rape oil.

Two last preparations belong to so called adjuvants. It means that they support the biological efficiency of pesticides action (influence) and they have to be applied together with relevant pesticides.

Biochikol 020 PC - Firm Gumitex Poli-Farm sp.z o.o. Lynkowica str.59, 99 - 40 - Lowicz; Ph.: + 48 46830 00 40 Fax: +48 46830 00 40 41 e-mail: office@gumitex.pl

Bio product is biopolymer, derivative form chitin. Applied to fight with virus, bacterial and mushroom plant diseases.

Grevit 200 SL - Firm Avis Naturall Polska Sp.z o.o. Ph.:(022) 8892450, fax: (022) 8892451. Bio product based on the extract from grapefruit. Applied to fight with bacterial and mushroom plant diseases.