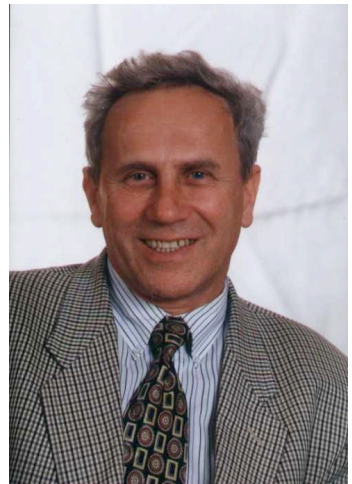


Dear Readers,

First of all we wish you prosperous and successful New Year 2004

Events around the world are going so fast. Sometimes we are frightened; sometimes we are fully satisfied, when we watch what is going around us. Fortunately, our Network becomes bigger and bigger. Many representatives from the whole world request to become a member of the Network. The Network secretary Maria is very busy to deliver the answers to more than 350 members from 50 countries. In 2002 she wrote 2802 letters and organises every year the conferences, symposia and seminar, in 2003 more then 3000. As you know, there is a new policy regarding R&D in Euro-zone. The main task is to accelerate the growth of European economy and technology transfer (integrated target project networks, research training networks, Cost Actions etc.). There are several new projects accepted by European Commission. It is discussable and we ask such question – why our Network with a long lasting experience (since 1989) and tradition in gathering high ranking specialists in such important topics, connected with sustainable development and lignocellulosic fibrous raw materials has got rather restricted financing, which reduce possibility of large scale activity. Simultaneously there are created new Networks of Excellence, which start de facto almost from zero. I have sent to the Permanent Representative of Poland to FAO in Rome some remarks and sorrows connected with this problem. We have asked this Plenipotentiary Ministry to contact Mr. Philippe Busquin of European Union Commission for Research, Brussels, Belgium – responsible for R&D.



Dear Readers, if you find any idea or suggestions, how we could improve our status, please, contact us.

We would be grateful and we believe that our Network helps not only us-European inhabitants, but it could be useful for whole world and especially for developing rural areas.

As you probably know, the next Global Workshop of the Network will be held on October 24-28, 2004 in capitol of Bosnia and Herzegovina, Republika Srpska. We are delivering the comprehensive information and 1st circular by E-mail to all of you. We are convinced, that the conference and related projects will help to recover Balkan countries after war and fully “come back” to the family of European countries.

Yours sincerely,

The Editor, Prof. Dr. Ryszard Kozłowski

CONTENTS

<u>STRUCTURE OF THE NETWORK</u>	2
<u>WORKING GROUP NEWS</u>	5
<u>FLAX, HEMP AND ALLIED FIBRES IN THE WORLD</u>	5
An Overview of the Flax and Hemp Industry in North America	5
The State and the Perspectives of Flax And Hemp Utilization in Poland and in The World	6
<u>ACTIVITIES OF THE FAO EUROPEAN COOPERATIVE RESEARCH NETWORK ON FLAX AND OTHER BAST PLANTS</u>	10
Next Conferences Proposals	10
<u>OPEN COMPETITION FOR THE BEST PAPER OR POSTER PRESENTED DURING THE CONFERENCES OF THE FAO EUROPEAN CO-OPERATIVE RESEARCH NETWORK ON FLAX AND OTHER BAST PLANTS</u>	14
Possibilities of cooperation with other Networks and Associations on Industrial Crops	15
Internet Hemp Information Sources	15
<u>SPECIAL STUDIES, NEWS, FORUM OF THE DISCUSSION</u>	16
Flax Fibers New Doctrine	16
<u>NEWS ABOUT THE EUROPEAN PROJECTS WITH INVOLVEMENT OF NETWORK MEMBERS</u>	17
<u>NEWS REGARDING PUBLICATIONS ON NATURAL FIBRES</u>	18
<u>STATISTICAL DATA ON FLAX</u>	22
<u>STATISTICAL DATA ON INDUSTRIAL HEMP</u>	30
<u>EUROFLAX – PROFILES</u>	31

STRUCTURE OF THE NETWORK

The Network is one of the thirteen Networks working within ESCORENA (European System of Cooperative Research Networks in Agriculture). The ESCORENA Secretariat is provided by **REU** – FAO Regional Office for Europe in Rome, Italy. Responsible Dr. Michel Larbier – REUS, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, 00100 Rome, Italy.

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At present, the whole Network brings together 355 experts from 51 countries in the fields of research, economics, marketing and industry. Member countries are: Argentina, Australia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Colombia, Cuba, Czech Republic, Denmark, Ecuador, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Latvia, Lithuania, Mexico, Netherlands, Nigeria, Norway, Pakistan, Poland, Portugal, Republic of Serbia, Romania, Russia, Slovakia, Spain, South Africa, Sweden, Switzerland, Thailand, Turkey, UK, Ukraine, and the USA.

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NETWORK WORKING GROUPS (WG):

Please note!

A more detailed description regarding the activities of the six Working Groups was provided in all previous editions of this bulletin and is available at the Network's web page <http://escorena.fao.org/>

WG/1. Breeding and Plant Genetic Resources

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The developments of the European program: **the COST Action 847: TEXTILE QUALITY AND BIOTECHNOLOGY**, coordinated by the Chairman of the Group Prof. S. Sharma and Dr. Johanna Buchert of VTT Biotechnology and Food Research, Finland are described on p. 18.

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WORKING GROUP NEWS

THE PROPOSAL TO CREATE A NEW WORKING GROUP

Dear Network members,

We still consider the proposal of given by Dr. Piero Venturi, Faculty of Agriculture, University of Bologna, Italy to create a new Working Group, dealing with agro-technique, to include topics connected with the presence of the fibre crop in the field: soil tillage; crop establishment (sowing); fertilisation; weed control; harvesting; plant physiology; interaction soil-crop and crop-environment (this last subject is not so relevant for flax but it is assuming more importance for hemp); first transformation at the farm, logistics of the transport and storage and, more in general, all the practices that can be included in agro-technique. We are looking forward to your comments and proposals.



FLAX, HEMP AND ALLIED FIBRES IN THE WORLD

An Overview of the Flax and Hemp Industry in North America

Kenneth W. Domier (dendomier@compuserve.com), Professor Emeritus of Agriculture Engineering, University of Alberta, Edmonton, Canada T6H 2H1.

Oilseed Flax

In 2002 farmers in Western Canada seeded 680 000 hectares of oilseed flax and approximately 40 000 hectares of solin (edible oilseed flax). The total production of flax straw is unknown but would be approximately one million tonnes. Of this total approximately 200 000 tonnes were purchased by Ecusta Fibres Ltd. and Schweitzer-Mauduit Canada Inc. mainly for the use in speciality paper production primarily cigarette paper. Their pulp mills are located in the United States.

Another company, Durafibre Inc. procures and processes oilseed flax straw for industrial uses. Durafibre's consumption of flax straw was in the range of 30 000 tonnes. Unfortunately the flax processing facility of Durafibre Inc. was closed on 2002-03-31 and put up for sale. This closure is a set-back for the utilization of waste oilseed flax straw in Canada.

Every year in the Priarie provinces of Canada nearly 750 000 tonnes of flax straw are burned, an environmentally unfriendly practice. The flax fibres produced from oilseed flax straw are not suitable for textiles, but are suitable for very large potential markets as feedstock in non-woven mats for the automotive industry, insulation mats, pulp and paper, erosion control and horticultural products, and as a reinforcing material in plastics, recycled paper, and other composite products. The value-added potential of oilseed flax straw is considerable since the combined flax straw is either sold to the three companies for \$6.00 to \$9.00 per tonne (left in the swath) or burned. Flax production in Canada is concentrated mainly in the provinces of Saskatchewan and Manitoba and the area seeded can vary from year to year depending on the price of flax seed but has been over 500 000 hectares for the last 10 years.

In 2001 farmers in the United States seeded approximately 200 000 ha of oilseed flax. Historically flax production in the United States has varied from 960 000 ha in 1946, 2 220 000 ha in 1956, 1 140 000 ha in 1970, and 460 000 ha in 1972. The projection for 2002 is 325 000 hectares. At the present time very little of the flax straw produced is used for industrial purposes, but a small company, FlaxTech Inc., Rock Lake, North Dakota is marketing flax straw products for erosios control, horticulture, etc. Another US Company, Alpha Fibre Inc. is planning to set up a plant to utilize oilseed flax fibre but after a similar announcement for a plant in Saskatchewan, Canada, the proposed facility may not come to fruition. However, depending on profit margins for flaxseed and the growth in industrial demand for flax fibre, the potential area seeded to oilseed flax in the United States could increase markedly.

In Europe there is considerable interest in the use of natural fibers (such as oilseed flax) in interior panels, visors and other interior parts of automobiles. Natural fibres like flax are blended with polypropylene or other synthetic fibres than needle-punched into a mat, a cover material can be added and then the composite can be hot pressed in one operation. In most cases no additional resin is needed. The North American automotive industry has been slow to use composites from natural fibres but little by little progress is being made. In the plastics area the use of natural fibres is not limited to needle-punched mats as considerable research and development in injection and rotation moulding is underway by both companies and research institutions.

Fiber Flax

Fibre flax for textiles and linen has not been grown commercially in North America for over 40 years. In Europe fibre flax is subsidized by the European Union with payments to the farmer and the processor. Prior to processing (decortication and scutching) the standing flax crop is mechanically pulled and laid on the ground so dew retting can take place. The flax is mechanically turned for uniform retting, then deseeded and baled, keeping the stalks parallel. The capacity of scutching plants is low (1-1.5 tonnes per hour per line). After scutching, the line fibre flax is further processed (hackled) prior to being

used in the textile industry as long fibre or shortened into 'cottonized' fiber for blending with other fibres. The short to medium length fibers, called tow, are used for pulp and paper, and for industrial uses such as interior trim parts of automobiles and plastics reinforcement.

In North America there may be a renaissance in the production and processing of fibre flax. In the early 1990's a used scutching plant was established in Maine but had financial problems and went into receivership. The plant has new ownership and may be reopened to process baled, retted fibre flax presently in inventory. A new scutching plant in Salaberry de Valleyfield, Quebec, came on stream in 1997 but went into receivership in 1998. The plant re-opened under new ownership in 1999 and processed some fibre flax in 2000 and 2001. The processed line and tow fibre was shipped to France for further processing. The plant is closed and is up for sale. During the last five years there has been considerable interest and research in growing and processing fibre flax in South Carolina. This has led to the formation of a new company, Eastern Flax SC, LLC which has set up a fibre flax processing plant in Kingstree, South Carolina. There are no textile plants in North America that can process long line flax fibre into yarns, so the flax fibre will not be sold as long fibre but rather as shortened or 'cottonized' fibre so that it can be spun on equipment designed for cotton fibres or sold on the world market to textile companies. Cottonized flax fibres demand a premium price. The tow fibre will be used for pulp and paper, interior mats for the automotive industry, re-enforcement in plastics, etc. The fibre flax will be grown locally as a winter crop and harvested with conventional farm equipment. Seed harvesting will use stripper header technology.

Straw harvest will use a drum mower and round baler. Eastern Fax ME, LCC will soon be processing fibre flax straw producing both long and short flax fibres at Presque Isle, Maine.

Current Research into Flax Fibre Utilization

Ecusta and Schweitzer-Mauduit have been producing speciality papers from flax fibres for decades. There is growing interest in utilizing the excellent strength properties of flax fibres in other paper products. The Alberta Research Council, Edmonton, AB has an extensive research program in both mechanical and chemical pulping of flax straw. Mechanical pulps from whole oilseed flax straw have been demonstrated to improve the strength properties of wood-based pulps produced from softwood and hardwood. At substitution rates as low as 10%, whole flax mechanical pulp improves the bulk and tear index of wood pulps while maintaining their tensile strength. Brightness and bleachability of pulp blends are inferior to the pure wood alone but this can be avoided by modifying the pulping conditions. Two pulp and paper companies in Eastern Canada have expressed interest in using flax as reinforcement for their existing wood-based furnishes. In the chemical pulping of whole straw flax, the Alberta Research council has determined that flax pulps require less time and heat to cook to a given lignin content, and less mechanical energy is required to beat the fibres to a given freeness. Pulp blends also possessed superior strength properties to wood pulps alone. A noel process flowsheet for chemically pulping flax has been created that would allow flax pulping lines to be built on the site of existing wood-pulp mills so that common services can be shared. This new process which is still being evaluated would reduce the capital and operating costs of flax pulp production.

Hemp production and processing in North America is solely in Canada as the production of hemp is prohibited in the United States. Production of hemp for seed/grain and hemp fibre/hurds can be carried out under regulations laid out by the Government of Canada. During the period 1995 to 1999 there was considerable interest in the production of hemp and two commercial facilities for the processing of hemp were established in the province of Ontario. Farmers in the province of Manitoba seeded 5 000 hectares of hemp in 1999 in anticipation that a California company would build a hemp processing facility. The bankruptcy of the company has put a damper on interest in the production of hemp but there are plans underway in Manitoba to build hemp processing facility and a non-woven mat line. Only time will tell if this hemp processing facility will be built.

The use of natural fibres in plastics and composites is an area that will continue to receive attention for many years to come. There are many uses and products that can utilize the excellent properties of natural fibres such as flax. Although economics will eventually dictate whether or not new uses for flax will see the light of day, the main limitation will be the imagination of the individuals associated with the flax industry.

The State and the Perspectives of Flax And Hemp Utilization in Poland and in The World

Prof. Dr. Jozef Wasko, Prof. Dr. Ryszard Kozlowski, Dr. Jerzy Mankowski, Eng. Maria Mackiewicz-Talarczyk, Institute of Natural Fibres (INF), Poznan, Poland, ul. Wojska Polskiego 71 b, 60-630 Poznan Poland, tel.: +48(0) 61 8480-061, fax/tel.: +48(0) 61 8417-830, E-mail: netflax@inf.poznan.pl

Introduction

The increasing amount of the population in Poland and in the world results in the increased demand for the basic products, necessary to meet the most important and vital human needs. Those basic demands concern: food, cloth and accommodation.

The demand for the textile products, which is one of the most important, is increasing, which is followed by the constant increase of the world fibres utilization.

The significant increase of the birth rate was noticed after the Second World War and can decrease a bit to the year 2020. But the increase of the birth rate is noticed in the developing countries, especially in Asia and Africa.

It is expected that the usage of raw materials per capita will stabilize and the climatic zones would determine its level.

It is estimated that the world population will reach 8.8 billion by the year 2020, while the usage of fibres will increase to ca 10 kg.

The analysis of world production and utilization of flax and hemp

The world production of fibres in the year 2000:

- man made fibres: 32,995 thousand tones;
- natural fibres: 25,600 thousand tones.

The analysis of the trends of world textile raw materials development allow for the estimation, that in the nearest 25 years the world utilization of textile raw materials could reach 88 billion tones:

The changes resulted from the increase of the world population as well as from the improvement of life standard.

- The volume of the natural fibre production should stabilize at the level of the beyond the XXI century due to agrarian and breeding conditions. Some increase of cotton cultivation is expected due to potential possibilities of efficiency increase.
- The cotton share of raw materials is approximately 80% and will probably increase to 83 – 85% in 2020. The redouble of the cotton production within 20 years seems impossible, due to several limitation such as: the water and chemicals demand as well as climatic demands. Simultaneously there is an abundance of other lignocellulosic fibrous raw materials, which are not explored and use enough.

It is worth to mention that ecological structure of natural fibres; their unique utilization characteristics create the vision of exclusive textile raw materials for them.

Bast fibres, especially flax and fibres, play a significant role among the natural fibres.

However it is depended on the modernization of entire agrotechnical sphere and the adjustment of fibres to the modern processing techniques.

Perspectives of the bast fibres development in the world.

The volume of the important natural fibre world production, including bast fibres is shown in the table 1.

Table 1: The world production of natural fibres (medium volumes in 1998 – 2000)

No.	Type of fibre	Mln. tones
1.	Cotton	19.32
2.	Jute (and allied fibres)	3.52
3.	Wool	1.52
4.	Flax	0.6
5.	Sisal	0.39
6.	Capok	0.20
7.	Ramie	0.17
8.	Abaca	0.10
9.	Silk	0.11
10.	Hemp	0.08

Source: Bremen Wool Exchange, FAO-Statistics Rome, CSIRO Belmont.

The described reasons and trends of total world fibre production, including natural fibres, allow for the estimation, that up to 2020, the world production of basic bast fibres should equal the following values:

- Flax fibre – 800,000 tones
- Hemp fibre – 100,000 tones
- Jute – 4 000,000 tones

The above figures, especially concerning flax and hemp fibres could be significantly exceeded during the nearest 25 years. The reason is, that predicted 88 mln tones demand for textile raw materials in 2020 would not be met neither by supply of man made fibres, nor by limited potential of cotton production.

Probability of non-limited production of man made fibres would not be realized due to:

- The change of demand towards the application of natural fibres
- High investment costs of launching of new production lines of man made fibres
- Very high expenses of launching of new type viscose production
- The necessity of the change of raw materials for the man made (chemical fibres): production – from petrochemical to renewable natural raw materials and connected technological investment e.g. polymers of polylactic acid and polyhydroxybutyric acid

The continuous long term trend of cotton prices decrease is doubtful and is caused mainly by economy changes and political transformations at the main players among the receivers of raw materials (e.g. the break down of wool production in Australia and New Zealand in 1985-86).

In such circumstances, the demand for other natural fibres – e.g. bast fibres especially flax and hemp, could increase significantly, already in the nearest period.

The existing technologies of bast fibres ennobling, as well as the research in the scope of modification of fabrics – provide the beneficial conditions for supplementing the lack of cotton with flax fibre in the large range of textile products. The demand for flax fibre would be determined in the close connection with the technological progress in the field of ennobling of flax (hemp) fabrics.

The demand for flax and hemp fibre would be connected as well with the supply and prices of cotton.

Existing R&D solutions allow for the production of cotton-like (cottonized) flax and hemp fibre with the price ca 1 EURO/kg, which is almost equal to cotton price.

It is foreseen that this price could be constant or even lower, due to the increase of the efficiency of one-type (homomorphic) fibre production and the application of modern techniques. The possibility of obtaining one-type (homomorphic), cottonized flax and hemp fibre would stimulate the development of their processing in blends with cotton and some man made fibres.

According to INF results, only 25% addition of flax fibres improves significantly the utilization comfort and properties of fabrics.

The world production of flax fibres in the last century increased from 400 to 800 thousand tones in 1965, and then decreased to 625 thousand tones in the year 2000.

The flax fibre world production trends in 1965-2001 are presented on the figure 1.

Figure 1. World production of the flax fibres...

The increase in the demand for hemp fibre could be connected with the predicted high demand for the textile raw materials, but the most significant would be the role of hemp fibre in the non-textile production such as pulp/paper and modern composites.

Additional positive factor concerns the obtaining of the industrial hemp varieties (including Polish) with the low THC level below 0,2%. It contributes to the less apprehension of the utilization of hemp for the production of the drugs (marihuana). The world production of hemp fibre is presented on the figure 2.

Figure 2. The world production of hemp fibre (1996 – 2000)

Perspectives of flax and hemp production in Poland

The natural fibres production in Poland depends on the demand for the domestic raw material and the possibilities of the its export.

The Polish spinning industry declares the increased demand for domestic fibres, but it is depended on the improvement of fibre quality. It is necessary to take into consideration the situation on the market of flax and hemp yarns and fabrics. According to the elaboration "Polish Cloth and Textile Industry – production and Trade 2000/2001¹ – production of linen yarn in 2001 increased by 9.9% in comparison with the year 2000 (fig.3).

¹ according to Polish Cloth-Textile Chamber (2002)

Figure 3. The production of linen yarns (2000-2001).

The similar trends in the production of linen yarns continued in 2002. The production of the linen yarn in the first six months of the year 2002 increased by 13.4% compare to the analogous period of the year 2001.

The presented data confirm the gradual increase in the yarn production, which should influence the demand for the fibre. Such trend is beneficial for the production of linen fabrics as well.

Those data show that the increase in the production of linen fabrics in Poland in 2000 to 2002 was 28.9%. The significant decrease in the production of blended fabrics with the linen/flax addition has been noticed in that period. It probably means the increase of ecological consciousness and interest of the end users and the significant interest mainly in the production of healthy clothing based on fabrics made of "Pure linen" (Figure 4).

Fig. 4: Production of linen fabrics in 2000-2001

The presented level of spinning mills supply with fibre derived from the production balance depended on the sale level as well on the economy of processing.

The potential production possibilities of spinning mills are higher, but the increase of flax fibre consumption is depended on the possibility of sale and markets enlargement the changes in the final products assortment as well as the decrease of the rate of the Polish Zloty to USA dollar.

The restructuring of Polish linen industry should proceed in the area of technology improvement and the enlargement of the assortment of final products. The collection of linen healthy and ecological clothing should be available in the large scale, beside the large scale of the household goods, upholstery fabrics and bedclothes (bed linen).

However it requires the production of flax fibre of highest quality (according to Polish standards above Ns 30), which would enable the production of yarns of linear mass below 50 tex.

The domestic production of high quality fibre will allow for an elimination or reduction of the fibre import by the spinning mills. This will allow for the increase of the demand up to 5 thousand tones per year within 2 to 3 years.

For some years, domestic flax fibre, prepared by individual producers is exported to the Central and East European countries and consist a base of supply for spinning mills, being supplemented by the imported Belgian or French fibre.

However the general utilization of hemp fibre as a raw material for spinning purposes is not expected in the near future. The small amounts will be used for the production of special cloth, eventually to the production of blended yarns made of hemp cottonin. But it will require more intensive processing and treatment of hemp fibre, to have features more similar to flax fibre. It would be possible to apply the enzymatic treatment, the treatment based on the osmotic phenomena, aiming in obtaining as thin fibres as possible, free from remains of plant tissues and other accompanying substances, which are characteristic for the hemp fibre.

However the main direction of hemp fibre utilization would be for technical purposes. Hemp is a plant very suitable for the production of cellulose pulp and paper mass, due to the high yield of fibre with the cellulose content up to 70%.

The application of hemp to produce biocomposites, e.g. for car industry is a very promising utilization of this plant. The positive results of natural fibre application to produce car elements and devices have been implemented in such companies like: Polowat, Lear, Findlay Industries, and Comfort. However the decrease of the production and purchase of the new cars in Poland have restrained the large usage of these fibres for the car production in Poland.

Anyhow, in Poland, the future application of natural fibres in the car construction will be probably affected by ecological indications, as it is in EU countries. Some of the reasons are:

The natural fibres are more suitable for recycling, decrease the weight of vehicles, which results in the less fuel consumption, increase of the comfort and safety of the travel.

The above mentioned factors allow for estimation, that within 5 years the tendency of utilization of hemp fibre for composite production will increase and could be approximately 500 tones per year and 10,000 tones per year for pulp and paper.



ACTIVITIES OF THE FAO EUROPEAN COOPERATIVE RESEARCH NETWORK ON FLAX AND OTHER BAST PLANTS

Next Conferences Proposals

INVITATION TO ATTEND THE INTERNATIONAL CONFERENCE

FLAX AND ALLIED FIBRE PLANTS FOR HUMAN WELFARE
8-11 DECEMBER, 2003
NATIONAL RESEARCH CENTRE (NRC), CAIRO, A.R. EGYPT
Circular, Call for Papers
UNDER THE PATRONAGE OF

H.E. Prof. YOUSSEF WALLY, Deputy Prime Minister and Minister of Agriculture and Land Reclamation.

H.E. Prof. MOFEEED SHEHAB, Minister of Higher Education and Scientific Research

H.E. Prof. Hany M. El-Nazer President of National Research Centre, Dokki, Cairo, Egypt.

CONFERENCE PRESIDENT

- Prof. Dardiri M. El-Hariri, NRC, Prof. of Agronomy, Representative of FAO Eur. Cooperative Research Network on Flax and Other Bast Plants for Near/Middle East National Coordinator of the Research Network.

CONFERENCE COORDINATOR AND REPORTER

- Prof. Ryszard Kozlowski, General Director of INF, Coordinator of FAO ESCORENA, European Cooperative Research Network on Flax and Other Bast Plants, Poznan Poland.

ORGANIZED BY

- National Research Centre (NRC), Dokki, Cairo, Egypt.
- Coordination Centre of FAO European Research Network on Flax and Other Bast Plants, Poznan, Poland.

SPONSORED BY

Ministry of Agriculture and land Reclamation, Academy of Scientific Research & Technology, FAO Regional office for Europe Rome Italy, FAO Regional Representative for plant production, Near East Office, Cairo, Egypt.

International Scientific Committee:

Prof. D. M. El-Hariri	NRC	Egypt	Dir. A. Daenekindt	Alg. Vlasv.	Belgium
Prof. M. M. Kamel	NRC	Egypt	Prof. N. El Chazly	NRC	Egypt
Prof. H. Abd El-Maksoud	NRC	Egypt	Prof. C. Morvan	Univ. Rouen	France
Prof. N. I. Ashour	NRC	Egypt	Prof. A. Leao	Coll. Agric	Brazil
Prof. R. Kozlowski	INF	Poland	Eng. M. Tubach	IAF	Germany
Prof. A. Atanassov	ABI	Bulgaria	Dr. A. Balabanova	ABI	Bulgria
Prof. A. Montaz A.	ARC	Egypt	Prof. P. Chow	Univ. Illinois	USA
Prof. P. Kolodziejczyk	Olds Coll. Centre	Canada	Mr. G. Mackie	Textile Consult.	U.K.
Prof. M. Pavelek	Agri Tec	Czech Rep	Prof. A. Tantawy	A.R.C.	Egypt
Prof. S. Sharma	Univ. Belfast	UK	Dr. H. Moawad	Priv. Com.	Egypt
Prof. S.A. Mansour	NRC	Egypt	Prof. A. M. Ali	ARC	Egypt

Organizing Committee :

Prof. M. M. Kamel	NRC	Egypt	Prof. M. El-Tobgy	NRC	Egypt
Prof. D. M. El-Hariri	NRC	Egypt	Prof. M. A. Amer	NRC	Egypt
Prof. R. Kozlowski	INF	Poland	Prof. M. S. El-Sayed	NRC	Egypt
Prof. F. E. Abdalla	NRC	Egypt	Mrs. Eng. M. Talarczyk	INF	Poland

Conference Secretariat:

Prof. Magda A. Amer.

Mrs. Eng. M. Mackiewicz Talarczyk.

Mr. M. H. El-Amely

Ashraf M.

Mrs. W. Esmail

The committee will select the assistance staff in time.

Registration Fees:

1. It will be 400 L.E for Egyptians and 400 US\$ for others to present a paper when paid before Oct. 15th, 2003, then increased with 50 L.E and/or US\$ after that date.

2. It will be 200 L.E and/or US\$ for accompany person and post graduates students when paid before Oct. 15th, 2003, then increased with 50 L.E and/or US\$ after that date, for Egyptian and/or others respectively.

These fees included: Attendance of all Scientific Sessions, Admission to the Technical Exhibition, All Conference kits (Name, Tag, Bag, Proceeding), Tea & Coffee Breaks, Official Dinner, and study tour for participants only.

General Information:

Venue: National Research Centre (NRC) El-Tahrir Str. Dokki, Cairo, Egypt.

Time: 8-11 Dec., 2003.

Crops Included: Flax, Kenaf, Hemp, Jute, Roselle, Ramie and other lignocellulosic fibrous raw materials.

Conference objectives:

The conference will focus on different scientific activities in field of Natural Bast and Lignocellulosic Fibrous Plants. It will provide a forum of presentation and discussion among international experts, scientists and technologists and this will promote as well exchange new scientific knowledge in this field of interest. It will encourage new trends in Industry, Medicine, Textile, Non textile, Nutrition, Hygienic, Cosmetic products application. Quality of these new advanced eco-friendly products and energy issues as well composites will be discussed.

Main topics: Breeding, Production, Biotechnology, Processing, Application, (Textiles, non Textiles) Composites, Human nutrition, Animal feeding, Medicinal and Cosmetic products, Quality improvement, Economics.

Language: The main language is English.

PAYMENT:

Please address your payment indicating your name to:

MOHANDES BANK / CAIRO UNIVERSITY BR.,

SWIFT CODE: MOHBEGCXAXXX

Acc No. 803 309 8201 WITH BANK OF NEW YORK / NEW YORK

ABA 021000018

Acc Name : International Flax Conference.

Acc No. 17338

Passport and Visa:

It is essential to have a valid passport to entry Egypt Therefore all participants are requested to obtain visa. So, it is essential to contact the Egyptian Embassy and/or Consulate in your country in suitable time. If requested we can send you a letter of acceptance to facilitate Visa for entry to Egypt.

The Weather:

Normally, the weather in December in Egypt is mild. The expected temperature will be 12-20°C. Therefore light clothing is suitable all day, but at night you are in need to sweater or some what heavy clothing.

CORRESPONDENCE AND INFORMATIONS:

All correspondence should be addressed to:

Prof. D.M. El-Hariri, National Research Centre (NRC) Postal Code 12622, Dokki, Cairo, Egypt. Fax (202) 3370931.

E.mail: elhariri_d_m@hotmail.com and Simultaneously to:

Mrs. Eng. Maria Mackiewicz Talarczyk, Secretary of the Network, Institute of Natural Fibres (INF), Poznan Poland, Fax: (4861) 8417830, E-mail: netflax@inf.poznan.pl

IMPORTANT DEAD LINES:

Receiving Full Text:	October 2003
Acceptance Notification:	October 15th 2003
Final Registration Form:	October 25th 2003
Final Registration Fee Payment:	October 25th 2003
Hotel Reservation:	November 10th 2003

Instructions to Authors:

Title: Bold, Font size 14, Centred.

Authors: Bold Italic, Font size 12, Centred. Please underline the name of the author who will present the paper.

Affiliation and address: font size 12, centred.

Abstract: above the text, font size 10, margins 4 cm.

Text: about 5 to 10 pages, Font: Time New Roman, Size 12, justified, single spacing.

Pages: A-4 size 21 O X 29.7 cm, Margins 2.5 cm.

References: bibliographic citation in text must be done by numbers between brackets and the list must be organized at the end of the text by the order of appearance.

Tables and Figures: should be numbered and appear in their appropriate places. Authors should indicate required equipments. All papers accepted will be included in the proceeding which will be edited before the events.

Paper submission: The text of camera ready manuscripts should be prepared on CD in Word for Windows format including figures. The text on CD with two printed copies should be sent to:

Prof. D.M. El-Hariri, NRC, El-Tahrir Str. P.C. 12622 Dokki, Cairo, Egypt.

Hotel Informations:

It is of great pleasure to offer different hotel levels to suit all. You can indicate the suitable choice for you. The rates here are special offer for our conference participants only. Your choice will be considered, but if it is not available, we can change to another hotel of the same and/or nearest level. In the same time we will inform you directly. More information will sent to you later.

FINAL REGISTRATION FORM**International Conference****“Flax and Allied Fibre Plants For Human Welfare”****December 8-11, 2003, Cairo, Egypt**

Title :

Surname : First name :

Title / Position :

Institute / Organization :

Full postal address

Country City

Passport No Nationality :

Phone office : Fax :

Home :

E. mail :

Oral Pres. Poster Pres. No.

Dead line: October, 15th, 2003.

Please complete and return to :

Prof. D. M. El Hariri, NRC. P.C. 12622. El-Tahrir Str. Dokki, Cairo, Egypt

Fax: (202) 3370931 E. mail: dardiria@yahoo.com and Simultaneously to

Mrs. Eng. Maria Mackiewicz Talarczyk, INF, Poznan Poland.

Fax: (4861) 8417-830, E. mail: netflax@inf. poznan.pl



“Evaluation of productivity, economic and agricultural value of fibre and oil flax cultivars grown in Europe“,
Poznan/Sielec Stary, Poland,
June, 20 – 21, 2003

THE SECOND CIRCULAR

Organized by:

Coordination Center of the FAO European

Cooperative Research Network on Flax and other Bast Plants at the Institute of Natural Fibres, Poznan, Poland

In collaboration with:

The Experimental Farm of INF, Sielec Stary, Poland

AGRITEC Research, Sumpark, Czech Republic

ABI, Sofia, Bulgaria

FRAME PROGRAMME

“Evaluation of productivity, economic and agricultural value of fibre and oil flax cultivars grown in Europe“

INF, Poznan and Sielec Stary, Poland, June 20-21, 2003

Friday, June 20, 2003

8:30 Registration at reception of INF, Poznan

9:15 – 17:30 Workshop’s Scientific Sessions

20:00 Dinner

Saturday, June 21, 2003

8:30 **Study Tour to the Experimental Farm of INF in Sielec and Anniversary Session**

11:00 –15:00 **50 Years Anniversary Session:** the history and achievements of the Farm. Country picnic in Sielec Stary, the visit to the fields

15:00 transfer back to hotels in Poznan

The Conference proceedings:

The Proceeding will be edited **after** the event. Please, prepare the text of your presentation for publication and bring with you the hard copy and a copy on the diskette.

PROGRAMME OF THE FAO WOKSHOP AT INF

„Evaluation of productivity, economic and agricultural value of fibre and oil flax cultivars grown in Europe“

FRIDAY, 20 June 2003

Workshop at the Institute of Natural Fibres (INF), Poznan, Wojska Polskiego 71b

8:00 registration at the reception of INF

9: 00 Opening ceremony – welcome to Participants by Prof. Dr. R. Kozlowski

9:15 – 10:00 Cultural program

Scientific session I

CHAIRMAN: Prof. Dr. R. Kozlowski

10:00 – 10:20 El-Hariri, Al.-Kordy, M.A., Hassanein M.S. and Ahmed, M.A. NRC, Egypt: *Partition of photo-synthates and energy production in different flax cultivars*

10:20 – 10:40 M. Pavelek, AGRITEC, Czech R.: *Survey of Czech breeding methods, development of the new Czech Flax (Linum usitatissimum L.) variety Venica and agronomical properties of flax and linseed cultivars registered in the Czech Republic*

10:40 – 11:00 I.A. Golub, Flax Institute, L. V. Khotyleva, Institute of Genetics and Cytology of NASB, Minsk, Belarus: *Evaluation of productivity, economic and agricultural value of fibre and oil flax cultivars grown in Belarus*

11:00 – 11:20 A. Balabanova, AGROBIOINSTITUTE, Sofia, Bulgaria: *Past, Present and Future of Polish Flax Varieties in Bulgaria*

11:20 – 11:40 J. Bloch, M. Rajewicz, St. Rólski, K. Heller, INF, Poland: *Trends and Methods of Fibre Flax Breeding at the Institute of Natural Fibres*

11:40 – 11:50 questions and replies

11:50 – 12:00 **COFFEE BREAK**

Scientific session II.**CHAIRMAN: Prof. Dr. D. M. El-Hariri**12:00-12:20 K. Bacelis, Z. Jankauskiene, Upyte Research Station of LIA, Lithuania: *Characterisation of the best Lithuanian fibre flax cultivars and prospective breeding lines*12:40 – 13:00 V. Kovaliv, Institute of Agriculture “Polissya”, Zhitomyr, Ukraine: *New system of seed-growing of highly productive varieties of flax is a factor of flax-cultivation revival in Ukraine*

13:00 – 13:15 questions and replies

13:15 – 14:30 **LUNCH and POSTER SESSION****Scientific Session III.****CHAIRMAN: Dr. Martin Pavelek**14:30 – 14:50 I. Uschapovsky, VNIIL, Torzhok, Russia: *Evaluation of the breeding methods and of economical and agricultural value of the new varieties grown in Russia*15:10 – 15:30 I. Karpets, Agriculture Institute of Ukrainian Academy of Agrarian Sciences, Ukraine: *Fiber Flax Seed Production System in Scientific institutions of Ukraine*15:30 – 15:50 A. Shuvar, Institute of Agriculture and Stock Breeding, Obroshino/Lviv, Ukraine: *Productivity, economic and agricultural value of the fiber cultivars grown in Ukraine*15:50 – 16:10 M. Rajewicz, J. Bloch, K. Heller, St. Rólski, INF, Poland: *Utility, Economical and Agricultural Value of Polish Fibre Flax Cultivars.*

16:10 – 16:20 questions and replies

16:20 – 16:30 COFFEE BREAK**Scientific session IV.****CHAIRMAN: Dr. Alexandra Balabanova**16:30 – 16:50 G. Silska, INF, Poland: *The use of pre-breeding material in breeding of Polish flax varieties*16:50 – 17:10 A. Piotrowska, K. Krótka, I. Bartkowiak-Broda., IHAR, Poznan, Poland: *Major utility features of the new Polish linseed varieties and breeding lines*17:10 – 17:30 V. Stramkale, I. Rashal, D. Grauda, University of Latvia: *Flax growing and breeding in Latvia*17:30 **Discussion. Summing up of the Workshop and closing by Prof. Dr. Ryszard Kozlowski**

OPEN COMPETITION FOR THE BEST PAPER OR POSTER PRESENTED DURING THE CONFERENCES OF THE FAO EUROPEAN CO-OPERATIVE RESEARCH NETWORK ON FLAX AND OTHER BAST PLANTS

The Network coordination centre proposes that the most interesting papers or posters presented during our network meetings and conferences would enter the competition.

The special jury will judge all papers and posters presented during the year, and we will let you know the results in due course.

All Network members are cordially invited to participate in the competition to be continued the next year.



SOURCES OF INFORMATION

Major links to information on network activities and/or network members

- a. <http://escorena.fao.org/> [ESCORENA, FAO, Rome – Network website]
- b. <http://iwn.inf.poznan.pl> [Institute of Natural Fibres, Poznan, Poland]
- c. <http://www.csl.gov.uk/ienica> [IENICA – Interactive European Network for Industrial Crops and their Applications in the Changing Millennium]
- d. websites of the Network Chairmen:
 - <http://www.agritec.cz> [Martin Pavelek, AGRITEC, Sumperk, the Czech Republic]
 - <http://www.fh-reutlingen.de> [Martin Tubach, Institut für Angewandte Forschung (IAF), Reutlingen, Germany]
 - <http://www.qub.ac.uk> [Shekhar Sharma, The Queen’s University of Belfast, UK]
 - <http://www.univ-rouen.fr> [Claudine Morvan, Université de Rouen, France]

Sources of Statistical Data:

<http://apps.fao.org> [FAOSTAT Database Results], <http://www.fao.org/es/esc/en/index.html>, <http://www.texdata.com>, <http://www.its-publishing.com>, www.naturfaser-wirtschaft.de
<http://www.fao.org/es/ESC/esce/escr/hardfibres/fiberse.htm> (Hard Fibres)

Possibilities of cooperation with other Networks and Associations on Industrial Crops

1. **The Fibres Newsletter**, operated by Mr. Brian Moir, Commodities and Trade Division, FAO, Viale delle terme di Caracalla, 00100 Rome, ITALY, Fax: ++39 06 57054495, Tel: ++39 06 57054339, E-mail: Brian.Moir@fao.org
To subscribe to the list, send an email to mailserv@mailserv.fao.org, leave the subject line blank, with the message : subscribe Fibres-Ind-L. The Commodities and Trade Division of FAO (ESC) has a new website: <http://www.fao.org/es/esc/>
2. **INFORM_IENICA** – Industry Network for Renewable Resources and Materials – Interactive European Network for Industrial Crops and their Applications in the new Millennium. Coordinator of IENICA: Mr. Melvyn F. Askew, Ministry of Agriculture, Central Science Laboratory at York CSL/MAFF, SAND HUTTON, YORK, UK YO4 1LZ, tel. 44-1904-462309; fax: 44-1904-462256, E-mail: m.askew@csl.gov.uk, For more data see <http://www.csl.gov.uk/ienica>
Coordinator of INFORM: Dr. Nigel Oliver, Operations Director, ACTIN, Pira House, Randalls Road, Leatherhead, Surrey KT22 7RU, UK, Tel: +44/1372 802054, Fax: +44/1372 802245, E-mail: info@actin.co.uk, Website:<http://www.actin.co.uk>
3. **Flax Council in Canada**; The Council is based in Winnipeg, with Mr. M. Barry Hall as President. Mr. Donald H. Frith has retired. The address of this institution is: FLAX COUNCIL OF CANADA, 456-167 Lombard Avenue, Winnipeg, Manitoba, Canada R3B 0T6, tel.: (204) 982-2115, fax: (204) 942-1841, E-mail: flax@flaxcouncil.ca
4. **Saskatchewan Flax Development Commission**, A5A-116-103rd Street East, Saskatoon, Saskatchewan, S7N 1Y7
Telephone: (306) 664-1901, Fax: (306) 664-4404, Email: saskflax@saskflax.com, Web site: www.saskflax.com
5. **The Fiber Society** with Mr. Charles A. Cannon Professor as Secretary, Director Emeritus, Nonwovens Cooperative Research Center, College of Textiles, Box 8301, North Carolina State University, Raleigh, NC 27695-8301
USA, e-mail: subhash_batra@ncsu.edu, web page URL: thefibersociety.org
6. **International Hemp Association**, Postbus 75007, 1070AA Amsterdam, The Netherlands. Tel/fax: +31 (0)20 618-8758, E-mail: iha@euronet.nl
7. **European Industrial Hemp Association (EIHA)**. Coordinator: Dr. Michael Karus, nova – Institut, Institut für politische und ökologische Innovation, Nachwachsende Rohstoffe, Thielstr. 35, 50354 Hürth, Germany. tel: +49/2233 94 3684, fax: +49/2233 94 36 83, E-mail: michael.karus@nova-institut.de
8. **The Hemp Foods Industry**. Contact persons, John Roulac, call (800) 993-4367, Nutiva, P.O. Box 1716, Sebastopol, CA 95473. <http://www.nutiva.com/>
9. **Olds College Centre for Innovation Natural Fibre Centre (OCCI)**, 4500 -50th Street, Olds, Alberta, Canada T4H 1R6, Telephone: (403) 507-5206, FAX: (403) 507-7977, E-mail: relvestad@admin.oldscollege.ab.ca, www.occi.ab.ca

Internet Hemp Information Sources

- <http://Hemp-CyberFarm.com/>(information about hemp events, research organizations, correspondence, current legislative efforts in the USA etc.)
- Hemptech: The Hemp Information Network (<http://www.hemptech.com/hnews.html>)
- <http://www.interlog.com/~ihn>, www.naturfaser-wirtschaft.de
- www.hemp.co.uk regarding **Hemp Food Industries Association** Contact person: Mr. Paul Beinhaim, E-mail: paul@hemp.co.uk
- <http://www.nutiva.com/>

LINKS OF THE FAO/SCORENA EUROPEAN COOPERATIVE RESEARCH NETWORK ON FLAX AND OTHER BAST PLANTS WITH DIFFERENT NETWORKS AND PROJECTS

The European Cooperative Research Network on Flax and other Bast Plants establishes links with the Cotton Network, intending to share and compare the achievements in scope of e.g. bioprocessing of fibres and materials.

The close cooperation of the Coordination Centre with the FAO Intergovernmental Group on Jute, Kenaf and Allied Fibres as well as the Intergovernmental Group on Hard Fibres resulted in the continuous participation of the Network Coordinator in the meetings of these Groups as well as in co-operation.

The Network's members and the Coordination Centre are active in the co-operation and work within the following EU projects:

- **COST Action 847: Textile Quality and Biotechnology** (within *COST– European Co-operation in the Field of Scientific and Technical Research*). The Network’s scientists are active in the work of two Working Groups: WG/1 “Quality assessment of natural fibres” (chaired by Prof. Dr. S. Sharma) and WG/2 “Bioprocessing of Bast Fibres” (chaired by Prof. Dr. R. Kozłowski). They are contributing to establishing unified quality assessment of bast fibres in Europe as well as to develop environmentally friendly production technologies for textile industry by using enzymatic processes (for more pieces of information see COST Action 847 news in this issue).
- **COST Action 628.** Life Cycle Assessment of Textile Products, Eco-Efficiency and Definition of Best Available Technology (BAT) of Textile Processing. Program, served by the EU, in scope of COST system. The duration: 4 years, from 9 November 2000 to November 2004. Chairwomen – Eija Nieminen, Dr. Techn., Director at University of Art. and Design, UIAH DESIGNIUM – The New Centre of Innovation in Design. Her address: Hämeentie 135 C, 00560 Helsinki, Finland. Numbers of Tel.: ++358 9 756 30424, Fax: ++ 358 9 756 30433. E-mail: eija.nieminen@uia.fi More details about activities of the Cost Action 628 were presented in Euroflax Newsletter No 17
- **INFORM-IENICA project** [Contract No QLK5-2000-00111]: the European Commission supports 3 year project, started on 22 April 2001, during the Inaugural Meeting at Central Science Laboratory (CSL) in York, UK. IENICA is the Interactive European Network for Industrial Crops and their Applications in the Changing Millennium. Coordinator: Mr. Melvyn F. Askew, Ministry of Agriculture, Central Science Laboratory at York CSL/MAFF, SAND HUTTON, YORK, UK Y04 1LZ, tel. 44-1904-462309; fax: 44-1904-462256, E-mail: m.askew@csl.gov.uk, <http://www.csl.gov.uk/ienica>). **INFORM** is an Industry Network for Renewable Resources and Materials. The activities are coordinated by Dr. Nigel Oliver and Mr. Ian Bartle, Alternative Crops Technology Interactive Network Limited (ACTIN Ltd), PIRA House KT22 7RU, Leatherhead, UNITED KINGDOM. The EC/Brussels merged two independently submitted INFORRM and IENICA projects to act jointly and in close cooperation (*within Concerted Actions*). IENICA report on industrial crops and their applications prepared on the basis of the previous project is available and it is the first market-driven overview of the prospects for alternative crops and the industrial crop situation in Europe. It contributes to accessing and discovering the fascinating potential Europe has at its disposal in creating more sustainable industrial growth for future generations (see <http://www.csl.gov.uk/ienica>).



SPECIAL STUDIES, NEWS, FORUM OF THE DISCUSSION

Flax Fibers New Doctrine

Agr. Eng., Flax Expert/Advisor, Anwar M. Allam, Coop. Flax Producers, Top Management, 3, Shawarbi street, Cairo, Egypt, tel.: 202 3934521, fax.: 202 3500466

Diagnosis

The most important biggest steady users of flax fibers at the highest prices are the spinners. Their satisfaction is definitely a strong guarantee and a decisive factor for the existence and development of many different flax activities and industries: cultivation, processing, spinning, weaving, etc...

The current flax fibers produced, though over priced compared to other textile raw materials, are neither steadily nor fully satisfactory to the spinners’ needs. The fibers lack fundamental textile characteristics namely: highest homogeneity and consistency. The blame is wrongly put on the nature of the fibers, when, potentially, these fibers have inherent all the much-desired favorable textile characteristics, consistent for each variety. This paradox is the cause of the exasperation of the spinners, the decline of the demand for such fibers and furthermore, worsens the prevailing unfortunate alarming situation of the whole flax industry.

The paradox explained

Morphologically, flax fibers are fine slender spin able units embedded into an inner tightly holding tissue. To be available for use, the fibers have to be smoothly and safely extracted from this tissue. A proper and successful extraction operation produces pure, homogeneous, slender, individually separated, fine fibrous spin able units, with all the potential favorable textile characteristics apparent. An improper defective extraction leaves parts of this tissue still adhering to random numbers of fibers forming irregular conglomerated fibers unevenly thicker with different strengths and suppleness, in spite and in contradiction with the inherent natural potential favorable textile characteristics.

This shows the utmost importance of the suitability and success of the extraction operation in the production of genuine favorable textile flax fibers.

New Doctrine.

To re-establish flax fibers as a good textile raw material, a new doctrine has to be adopted. This new doctrine has to be firmly based on the most up to date scientific discoveries, convictions and beliefs namely the following ones:

- The spinning industry cannot survive unless the flax fibers produced are of satisfactory textile characteristics, suitable for the production of fine yarns, without major problems.
- The flax plant (*Linum Usitatissimum*) contains definitely very fine spin able fibers, with potential excellent textile characteristics, consistent for each variety. Any deviation from the potential quality is due to incomplete or defective fibers extraction; variations in yields (quantities) are due to the different specifications of the straw mainly in its thickness. The ideal thickness, suitable for the production of any yarn, should be not more than one fifth of the thickness of this desired yarn.
- Inside the plant, flax fibers are grouped in bundles distributed circularly around the central wooden cylinder, embedded into a tightly holding tissue.
- To be available for use without affecting their potential natural favorable textile characteristics, flax fibers have to be smoothly and safely extracted from this holding tissue. The effective and successful extraction operation should liberate the fibers by completely eliminating the holding tissue, without affecting the fibers textile characteristics in any way.
- The percentage of the fibers (the yield), is negatively proportional to the thickness of the flax straw: the thinner the straw the higher the yield and vice versa.
- Flax straw is composed of two kinds of cells reacting differently when they are in contact with water:
- Static fixed cells, forming the wood, the fibers and the outer skin. In contact with water, these cells are not affected.
- Dynamic cells (having semi-permeable membranes), forming the holding tissue. In contact with water, these cells are greatly affected.
- According to the natural law of water diffusion and, as long as the percentage of the water molecules inside these cells is lower than their percentage outside in the surrounding water, the outside water molecules would move and enter these cells, through their semi-permeable membranes and generate Osmotic pressure on these membranes. This Osmotic pressure increases, as long as the outside concentration of the water molecules is higher than their concentration inside these cells. With the continuous entry of the water molecules, this pressure becomes over what the membranes can stand, causing their rupture and the dispersion of the contents of these cells in the outer surrounding water. Gradually and smoothly the dynamic holding tissue is disintegrating by this means and the fibers are safely liberated, without affecting their natural favorable textile characteristics.

The use of the Osmotic pressure for the complete elimination of the cells forming the holding tissue is a safe way of flax and other vegetal fibers extraction, without affecting their natural textile characteristics.

Recommendation

To revive the use of flax fibers and other vegetal fibers as good reliable textile raw materials it is recommended:

- In cultivation, to aim at getting the thinnest possible plants (preventing lodging), through bigger populations in the fields. This would ensure obtaining the highest yield of fibers.
- In processing, to use an appropriate method of fibers extraction, as the Osmotic pressure one, allowing the complete safe liberation of the fibers without affecting their natural inherent textile characteristics. This would ensure obtaining the suitable satisfactory fibers for spinning without troublesome problems.

Note: we are looking forward to obtain your comments on this topic.

NEWS ABOUT THE EUROPEAN PROJECTS WITH INVOLVEMENT OF NETWORK MEMBERS

COST ACTION 847 “Textile Quality and Biotechnology”

COST = European Co-operation in the Field of Scientific and Technical Research. COST is an European program, served by the European Union in Brussels.

Nineteen COST countries had signed the Memorandum of Understanding to participate in the COST Action 847. The number of registered scientists is 95: Austria (3), Belgium (5), Bulgaria (2), Czech Republic (2), Germany (9), Denmark (1), Estonia (3), Finland (9), France (2), UK (9), Greece (9), Hungary (5), Italy (3), Lithuania (2), the Netherlands (7), Poland (9), Portugal (8), Romania (7) and Yugoslavia.

The period: from June 15, 2000 to February 2005

The basic document: Memorandum of Understanding: MoU 245/00

Chairperson: Dr. Johanna BUCHERT, VTT Biotechnology, Tietotie 2, P.O. Box 1500, Espoo, Finland, tel: + 358 456 5146, fax: + 358 94552103, E-mail: johanna.buchert@vtt.fi, http://www.vtt.fi/bel

Vice-Chairperson: Prof. Dr. Shekhar Sharma, The Queen's University of Belfast, Department of Applied Science, Faculty of Agriculture & Food Science, Newforge Lane. Belfast BT9 5PX, N. Ireland, tel.: +44/ 1232 250 666, fax: +44/1232 668375, E-mail: Shekhar.Sharma@dani.gov.uk

The managing body: Management Committee (MC). Action Web site: <http://www.vtt.fi/bel/cost847>

The **main objective** of this Action is to develop environmentally friendly production technologies for the textile industry by using enzymatic processes. By using these biotechnical methods, energy or chemicals can be saved or, alternatively, the final product quality can be improved. In the COST action, new applications using enzymes acting on both cellulose- and protein based textile materials will be studied and developed. This will be achieved by exchanging research information within European research units active in textile biotechnology oriented research.

More details about activities of the Cost Action 847 were presented in Euroflax Newsletter No 17

The latest news regarding the COST Action 847 activities:

- COST 847 Meeting in Belfast, Ireland, 29-30.1.2004
- COST 847 – WG 2 and WG 3 Meeting, 26th-27th February, Maribor, Slovenia

Let us turn your attention to the proposal, presented in the EUROFLAX Newsletter No 1/2002 (17) regarding a "Distributed Sample Library" [Activity of WG/1 Quality assessment of natural fibres] prepared by Dr. Eddy Baetens, CENTEXBEL Gent, Belgium. We are looking forward to your comments and contributions. This issue is connected with an important factor- the quality of the raw materials.



NEWS REGARDING PUBLICATIONS ON NATURAL FIBRES

PUBLISHING ACTIVITY OF THE FAO EUROPEAN COOPERATIVE RESEARCH NETWORK ON FLAX AND OTHER BAST PLANTS since 1989

"NATURAL FIBRES – WLOKNA NATURALNE" – a Yearbook of INF

A publication that is probably the only one in the world, which contains scientific publications regarding natural fibres (an English-Polish version yearbook), edited by the Institute of Natural Fibres – Coordination Centre of the FAO Network. The publication is advised by the international team of Honorary Editors: Mr. A.M. Allam/Egypt, Mr. A. Atanassov/Bulgaria, Mr. A. Bozzini/Italy, Mr. A. Bledzki/Germany, Mr. D. Cremaschi/Italy, Mr. A. Daenekindt/Belgium, Mr. D. M. El-Hariri/Egypt, Mr. H.P. Fink/Germany, Ms. U. Kechaiga/Greece, Mr. R. Kessler/Germany, Mr. P. Kolodziejczyk/Canada, Mr. J. Lappage/New Zealand, Mr. M. Lewin/USA, Mr. B. Mac/Poland, Mr. G. Mackie/Northern Ireland, Mr. T. Matsuo/Japan, Ms. C. Morvan/France, Mr. F. Munder/Germany, Mr. K. Perepelkin/Russia, Ms. Anna Pretova/Bulgaria, Mr. R.M. Rowell/USA, Mr. Shen Anjing/China, Mr. D. Sorlino/Argentina, Mr. H. Tokura/Japan, Mr. G. Venturi/Italy, Mr. Zainal Arifin M. Ishak/Malaysia, and Mr. V.V. Zhivetin/Russia.

Since 2004 *Natural Fibres* will be replaced by a new quarterly *Journal of Natural Fibers* and will be published by a recognized publishing house The Haworth Press, Inc. in New York, USA [for more details see: www.haworthpressinc.com]. **All scientists are welcome to publish relevant papers in this publication.** Contact: Prof. Dr. Ryszard Kozłowski; fax/tel.: +48(0) 61 8417-830, E-mail: sekretar@inf.poznan.pl or co-editor for USA Richard Kotek Ph.D., College of Textiles North Carolina State University, Raleigh, E-mail: rkotek@unity.ncsu.edu, tel: (919) 515-6585, fax: (919) 515-6532

EUROFLAX Newsletter

Information Bulletin EUROFLAX Newsletter – 19 issues since 1994 (400 printed copies, reaches subscribers and Network members in 51 countries), available from the Institute of Natural Fibres, Wojska Polskiego 71b, 60-630 Poznan, Poland, fax: +48 61 8 417 830, E-mail: boint@inf.poznan.pl.

PROCEEDINGS OF THE European Regional and Global Workshops:

- "FLAX IN EUROPE", Production and Processing, Poznan, 19- 21 June 1989 (available from the Institute of Natural Fibres)
- "FLAX – AS A FIBRE AND OIL BEARING CROP", Brno, Czechoslovakia, 18-20 June 1991 (available from AGRITEC, Research, Breeding & Services Ltd, Zem_delská 16, 787 01 _umperk, The Czech Republic, E-mail: agritec@agritec.cz)
- "FLAX IN THE WORLD" Bonn, Germany, 15-17 June 1993 (available from the Institute of Natural Fibres)
- "PRODUCING FOR THE MARKET" – Proceedings of the 4th European Regional Workshop on Flax, 25-28 September 1996, Rouen, France (available at the Institut Technique du Lin 5, Rue Cardinal Mercier, 75009 Paris, France, tel.: +33/1 42 80 40 56, fax: +33/ 1 45 26 24 27)

- “**BAST PLANTS IN THE NEW MILLENNIUM**” – Proceedings of the Second Global Workshop, 3-6 June, 2001, Borovets, Bulgaria

PROCEEDINGS of conferences (almost all available from the Institute of Natural Fibres, Poznan, Poland):

- The First Flax Genetic Resources Workshop, Poznan, Poland, 9-10 November 1993
- The Second Flax Genetic Resources Workshop Brno, 8-9 November 1994
- First Workshop of the Non-Textile Applications of Flax Working Group 14-15 November 1994, INF, Poznan, Poland
- Modern Flax Processing – The First Workshop of the Extraction and Processing Working Group, 15-16 March 1995, INF, Poznan, Poland
- Breeding for Fibre and Oil Quality in Flax – Proceedings of the Third Meeting of International Flax Breeding Research Group 7-8 November 1995, Saint-Valéry-en-Caux, France (a few copies are available from Eng. Jean-Paul Trouvé, CETEAL, Saint-Pierre-Le-Viger, 76740 FONTAINE-LE-DUN, France, tel.: +33/35974133, fax: +33/35971318
- Proceedings of the Symposium: Flax and Other Bast Plants, held at the Institute of Natural Fibres, 30.09 and 1.10.97, Poznan, Poland
- Newsletter of the ad Hoc Research Group (the Group acted from 1989 to June 1993) – 9 issues
- Proceedings of the Hemp, Flax and Other Bast Fibrous Plants Production, Technology and Ecology Symposium, 24-25 September 1998, Poznan, Poland
- Proceedings of the Bast Fibrous Plants Today and Tomorrow, Breeding, Molecular Biology and Biotechnology Beyond 21st Century, 28-30 September 1998, St. Petersburg, Russia
- Book of abstracts of the Fifth International Conference on Frontiers of Polymers and Advanced Materials (ICFPAM) and NATO Advanced Research Workshop on Polymers and Composites for Special Applications; 21 and 25 of June 1999, Institute of Natural Fibres, Poznan, Poland
- Research into New Uses of Natural Fibres (1999). Seminar Materials of the FAO Intersessional Consultation on Fibres, 15-16 November 1999, Institute of Natural Fibres, Poznan, Poland
- Innovative Hemp Production and Hemp Products (The News in Hemp Breeding, Cultivation, Harvesting and Processing). Seminar Materials. 23 February 2000, Institute of Natural Fibres, Poznan, Poland
- The Natural Fibres. Włokna Naturalne. Special Edition Vol. XLIV 2000. Special Jubilee Edition – Proceedings of the International Scientific Session: “Natural Fibres Today and Tomorrow”, held on 28 and 29 June 2000, Institute of Natural Fibres, Poznan, Poland
- Proceedings of the Conference Bast Fibrous Plants at the Turn of Second and Third Millennium, 18-22 September, 2001, Shenyang, China

OTHER RELATED PUBLICATIONS

Industrial Crops

- Newsletter of IENICA – The Interactive European Network for Industrial Crops and their Application, available at: <http://www.ienica.net/>
- IPGRI Newsletter for Europe, published by the International Plant Genetic Resources Institute, Rome, Italy. E-mail: m.colas@cgiar.org
- FIBRES & TEXTILES in Eastern Europe, published by the Institute of Chemical Fibres, Lodz, Poland, E-mail: iwch@mazurek.man.lodz.pl
- Green – Tech Newsletter. Edited by Prof. Dr. Hans Derksen – chairman of the Platform for Renewable Raw Materials P.O. Box 822, 3700 AV Zeist, The Netherlands. Fax: +31 (0) 30 691 73 94
- Fabulous Fibre. The Natural Fibre Centre Newsletter. Olds College Centre for Innovation Natural Fibre Centre (OCCI), 4500 –50th Street, Olds, Alberta, Canada T4H 1R6, Telephone: (403) 507-5206, Fax: (403) 507-7977, E-mail: relvestad@admin.oldscollege.ab.ca, www.occia.ab.ca
- Journal of Ivanovo State Textile Academy, Ivanovo, Russia: Scientific and Technical Journal – Technology of Textile Industry (available at <http://education.ivanovo.ru/IGTA/OURJOURN.htm>)
- International Textile Bulletin and Nonwovens/Industrial Textiles. Published by ITS Publishing. International Textile Service P.O. Box, CH-8952 Schlieren/Zürich, Switzerland
- CSL News, published by Central Science Laboratory, Sand Hutton, York, UK. E-mail: science@cls.gov.uk

Hemp

- Journal of Industrial Hemp – the journal of the IHA (E-mail: iha@euronet.nl) – International Hemp Association in the Netherlands, edited by The HAWORTH Press, INC, New York, London, Norwood (Australia), E-mail: BCohen7719@aol.com, <http://www.haworthpress.com>
- Journal of Cannabis Therapeutics – a sister journal of Journal of Industrial Hemp, edited by The HAWORTH Press, INC. (New York, London, Norwood (Australia), E-mail: BCohen7719@aol.com
- Leson Gero, Pless Petra: Hemp Food and Oil for Health – Your Guide to Cooking, Nutrition, and Baby Care; HEMPTech, 64 p., Sebastopol 06/99

- Roulac John W.: Industrial Hemp, Practical Products – Paper to Fabric to Cosmetics. HEMPTECH/Chelsea Green Publishing, 50 p., Sebastopol 06/96 [john@hemptech.com, HEMPTECH, (707) 823-2800, www.hemptech.com, P.O. Box 1716 Sebastopol, California 95473 <+> Fax (707) 823-2424, Fax orders: (419) 281-6883, E-mail orders: orders@bookmaster.com.
- Bocsa I., Karus M.: The Cultivation of Hemp – Botany, Varieties, Cultivation and Harvesting. HEMPTECH/Chelsea Green Publishing, 186 p., Sebastopol 02/98
- Grotenhermen F., Karus M., Lohmeyer D.: Hemp Foods and THC Levels: A Scientific Assessment. HEMPTECH/Chelsea Green Publishing, 67 p., Sebastopol 10/98
- The Hemp Commerce & Farming Report, (c) 1999 Ahem, Arthur Hanks. Contact at the E-mail address: jfreeman@ssm.net, http://www.hempreport.com
- John E. Dvorak, E-mail: boston.hemp@pobox.com invites you to visit the archives by performing a DejaNews power search for Dvorak, hemp, and archives: http://www.dejanews.com/home_ps.shtml
- www.maff.gov.uk/farm/acu/acu.htm – there are several good papers related to utilization of natural fibres on the UK MAFF web site
- H. Burczyk: Hemp Cultivated for Seeds – The Manual for Hemp Farmers (available at the Institute of Natural Fibres, Poznan, Poland)

INFORMATION ABOUT INTERNATIONAL CONFERENCES ON NATURAL FIBRES

Meetings and Conferences held in 2003 and 2004

- February 7, 2003. Annual General Meeting & Hemp Conference of the Saskatchewan Hemp Association. To be held the Assiniboia Club, 1925 Victoria Avenue, Regina, Saskatchewan, Canada. Assiniboia Club web site <http://www.assiniboiaclub.sk.ca>.
- February 22-24, 2003. International Jute Symposium. Kolkata (formerly Calcutta), India. Contact person: A.K. Bal. Ministry of Textiles, Gov. of India. Tel.: +91-33 217 2107, Fax: +91-33-217 2456, Email: jmdcindia@vsnl.com, www.jmdcindia.com, www.jute.com
- March 4-6, 2003. *All-Russia Fair-Exhibition-Conference „Russian Flax 2003”*, Vologda, Russia. Organizer: FGUP TSNILKA - The Federal State Enterprise – Central Scientific-Research Institute for Integrated Automation of Light Industry, Contact: Fair Exhibition Organization Center: “Flax House” Federal State Enterprise, ul. Shabolovka 26, 117049 Moscow, Russia, Tel/Fax: +70 (95) 237-35-45. 237-12-55. 236-63-32, E-mail: nauka@tsniilka.ru
- June 10-15, 2003, *The Seventh International Conference on Frontiers of Polymers and Advanced Materials (ICFPAM)*, Bucharest, Romania. Contact person in Romania: Prof. Marian Apostol, Institute of Atomic Physics Magurele, Bucharest, Romania, E-mail: apoma@theory.nipne.ro, Web site: http://www.chfiz.pub.ro/icfpam2003
- June 16-17, 2003. *NAROSSA®. 9th International Conference for Renewable Resources and Plant Biotechnology*. Magdeburg, Germany. Contact: Dr. Frank Pudiel, tel: +49-391-8507-171, fax: +49-391-8507-150, E-mail: narossa@oehmi-consulting.de
- June, 20-21, 2003. Flax workshop connected with the 50th anniversary of Experimental Farm of the Institute of Natural Fibres in Sielec Stary (1953-2003) entitled: *“Evaluation of economical and agricultural value of fibre and oil flax cultivars grown in Europe”*, Poznan/Sielec Stary, Poland. Contact person: Maria Mackiewicz-Talarczyk, INF, Poznan, Poland, E-mail: netflax@inf.poznan.pl (see program on page 14)
- June 25-27, 2003. *3rd AUTEX Conference*, Gdansk, Poland. Contact: Prof. Dr. Izabella Krucinska, Prof. Dr. Jozef Masajtis, Technical University of Lodz, Faculty of Textile Engineering and Marketing, 90-543 Lodz, Zeromskiego 116, Poland, Phone: +48 (42) 631 33 50, Fax: +48 (42) 631 33 43, E-mail: kategrab@ck-sg.p.lodz.pl. www.p.lodz.pl/autexcon
- June 30-July 2, 2003. *Advanced Flexible Materials and Structures: Engineering with Fibres. The Fiber Society 2003 Conference*. Loughborough University, Loughborough, UK. Organised by Dr. Memis Acar, Wolfson School of Mech and Manu Engineering, Leics., UK. Tel.: +44 1509 227533, Fax: +44 1509 227648
- July 8-11 2003. *The Joint Meeting of the two Intergovernmental Groups: on Jute, Kenaf and Allied Fibres* as well as the Intergovernmental Group on Hard Fibres, Salvador, Brazil. Contact person: Mr. Brian Moir, Secretary Intergovernmental Group on Hard Fibres, Commodities and Trade Division, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy, email: Brian.Moir@fao.org
- July 20-26, 2003. *Tenth International Conference on Composites/Nano Engineering*, ICCE/10
- August 19-21, 2003. *International Symposium on Kenaf Development and Product Show*, Beijing Friendship Hotel, Beijing, China. Organized by: Dr. Aimin Liu, 411 Borlaug Hall, Dept. of Agronomy and Plant Genetics University of Minnesota, St. Paul, MN 55108, USA, Tel: 612-625-6298, Fax: 651-765-0030, E-mail: liuax063@umn.edu. www.chinaconsultinginc.com
- September 1-2, 2003, *ECOCOMP 2003 – 2nd International Conference on EcoComposites*, Queen Mary University of London, UK, contact person: Dr. Ton Peijs, Queen Mary, University of London, Department of Materials, Mile End Road, London E1 4NS, UK, Phone: +44 (0)20 7882 5281, Fax: +44 (0)20 8981 9804, E-mail: t.peijs@qmul.ac.uk

- September 11-12, 2003. **4th International Symposium "Materials from Renewable Resources"**. Erfurt Exhibition Centre. Germany. Organised by Messe Erfurt AG <vogel@messe-erfurt.de> and Thüringisches Institut für Textil-und Kunststoff-Forschung e.V., Rudolfstadt, Germany. Contact person: Dr. Markus Schade <schade@titk.de>, (www.narotech.de) with EU project IENICA involvement.
- September 22-24, 2003. **First International Textile Design and Engineering Conference. INTEDEC 2003 Fibrous Assemblies at the Design and Engineering Interface**. Edinburgh, UK and Galashields. Contact person: Prof. Dr. George K. Stylios. School of Textiles and Design. Heriot-Watt University Netherdale Galashields Selkirkshire TD1 3HF, tel.: +44 (0) 1896 892133, fax: +44 (0) 1896 758965, E-mail: intedec@hw.ac.uk. <http://www.intedec.com>
- November 19-21, 2003, **The Textile Institute Design Forum "Designing the Future"** to be held in Manchester 2003. Contact person: Susan Spibey, Design Forum Secretariat, SJS Business Services Limited, Church House 38A Bridge Street, Golborne, Warrington, United Kingdom, WA3 3QB, Tel: (+44)(0)8700 433 874 Fax: (+44)(0)8700 433 875, email: enquiries@sjsinternational.com, www.sjsinternational.com
- December 8-11, 2003. **Flax and Allied Bast Fibre Plants for Human Welfare**. National Research Centre (NRC), Cairo, Egypt. Organised by: NRC (Prof. D.M. El-Hariri, National Research Centre (NRC) Postal Code 12622, Dokki, Cairo, Egypt. Fax (202) 3370931, E-mail: dardiria@yahoo.com, elhariri_d_m@hotmail.com) and the FAO European Cooperative Research Network on Flax and Other Bast Plants – Prof. Dr. Ryszard Kozłowski (contact: Mrs. Eng. Maria Talarczyk, Secretary of the Network, INF. ul. Wojska Polskiego 71 b, 60-630, Poznan Poland, Fax: (4861) 8417830, E-mail: netflax@inf.poznan.pl
- **6th Intern Symposium on Biocatalysis and Biotransformations Olomouc**, Czech Republic <http://www.biotrans2003.upol.cz/>

2004

- March 29-30, 2004. **International Bast & Leaf-Fiber Textile Conference**, Beijing, China followed by the four important exhibitions – Yarn Expo, Knitting China, CHIC, and Intertextile from March 31 to April 3. Organisers: Mr. Zhao Hong Director, International Trade Office, China National Textile Industry Council V. President, China Textile International Exchange Center and Mr. Zhang Shiping, President China Bast & Leaf-fiber Textile Association, Beijing, China. E-mail: hongchinatex@yahoo.com.cn

International Fairs

- April 8-10, 2003. **Techtextil – International Trade Fair for Technical Textiles and Nonwovens** connected with 11th International Techtextil Symposium (7 to 10.04). Frankfurt am Main, Germany. Contact: Ms. Julia Brinek/Katrin Klepsch, tel.: +49/69 7575- 6738/5822, fax: +49/69 7575 - 6950. E-mail: julia.brinek@messefrankfurt.com. TT0302-e-Call for Papers (**note:** it is possible to submit your entry in scope of research and new applications and products by January 17, 2003 to the Techtextil Innovation Prize 2002)
- May 19-24, 2003. **ACHEMA2003. 27th International Exhibition-Congress on Chemical Engineering, Environmental Protection and Biotechnology**. Frankfurt am Main, Germany. Organizer of ACHEMA: DEHEMA e.V. Tel.: +49/(0) 69/7564-201, E-mail: achema@dechema.de, <http://www.achema.de>
- Trade Fair for Renewable Resources, technologies and Products will be running parallel to the symposium from 11 to 13 September 2003 in the Erfurt Exhibition Centre (www.narotech.de)



STATISTICAL DATA ON FLAX

FLAX CULTIVATED AREA [ha]

Fiber Flax

	1998	1999	1999 [acres]	2000	2001	2002	2003
AUSTRIA	*635	*350	865	*450	*130	171 ^x	142 ^x
BELARUS	80000	***70000	172977	81800	o	o	o
BELGIUM	**11211	**12176	30024	****13355	****16990	15315 ^x	19250 ^x
BULGARIA	***58	***58	143	300	210	470	o
CHINA	***101000	***101000	249,581	o	o	o	o
CZECH REPUBLIC	4117	6348	15,687	6302-linseed; 2240-fibre flax	7095	5885	5900
DENMARK	*44	11	27	*45	*19	2 ^x	0 ^x
EGYPT**	14000	14500	25,831	o	o	o	o
ESTONIA	***323	115	o	240	27	30	o
FINLAND	613	850	2,100	*1016	*405	202 ^x	97 ^x
FRANCE	*43708	*49129	121,403	****55629	****67970	66776	74439 ^x
GERMANY	*416	*570	1,409	402*	*297	350 ^x	225
IRELAND	1*	o	o	o	****0	o	o
ITALY	o	o	o	o	****1	6 ^x	20 ^x
LATVIA	***2200	***2000	5,436	300-linseed; 1600-fibre flax	o	o	o
LITHUANIA	6500	8600	21,251	8600	9 600	9346	
NETHERLANDS	*3306	*3570	8,822	*4016	*4415	4062 ^x	4615 ^x
POLAND	2548	1223	3,022	5093	5200	5100	6000
					(fibre flax 4520 linseed 600)		
PORTUGAL	*1500	4678*	11,560	****3522*	****0	o	o
RUSSIA	107340	104050	256,032	107 610	127 361	o	o
SPAIN	*87727	*122400	302,463	****13595	*342	55 ^x	2 ^x
SWEDEN	*320	*1327	3279	*21	****32	25	0
UKRAINE	31200	***21900	54,117	19300	28280	28200	o
UNITED KINGDOM	*16700	*14000	34,595	****11816	*4430	177 ^x	175 ^x

Total flax cultivated area in EU countries: in 2000 ****103867 ha, in 2001 ****94631ha

Source: Data provided by relevant countries

*/ A. Daenekindt: Algemeen Belgisch Vlasverbond, Oude Vestingsstraat 15, B-8500 Kortrijk, Belgium

**/ D.M. El-Hariri, Dept. of Fibre Crops, NRC, Egypt

*** / FAOSTAT Statistical Database Results 1997 <http://apps.fao.org>

**** / Mr. Jordi Petchamé Ballabriga, Administrateur, Olives, huile d'olive et plantes textiles, D.G. VI.C.4 - Loi 130 7/126, European Commission, Rue de la Loi 200, B-1049, Bruxelles, Belgium

^x54^{ème} Congrès CELC – Berlin, Réunion d'information Générale / Section commune Culture-Teillage

note : in all tables the mark o/ means data not available

LINEN MARKET/PRICES IN THE EU

Prices of main products and by-products of flax in Belgium (similar as in other countries of the EU)

Source: VLAS Berichten, the newspaper of the Algemeen Belgisch Vlasverbond, issue No: 20–24 Oktober, 2003, Oude Vestingsstraat 15, 8500 Kortrijk, Belgium, Director; Mr. Albert Daenekindt. The subscription of this newspaper can be ordered at the above address. Contact: fax: + 32/56/22 79 30, E-mail: bvlasverbond@skynet.be

Scutched flax

Water-retted		Dew-retted	
long fibre			
Quality	Prices EURO/100kg	Quality	Prices EURO/100kg
lower quality	up to 185.92	lower quality	111.55 – 161.13
medium quality	185.93 – 235.50,68	medium quality	161.14– 198.31
		better quality	198.32– 223.10
very good quality	235.51 – 260.29	very good quality	from 223.11
short fibre			
lower quality 12.40 – 16.10 EURO/100kg			
medium quality 16.11 – 22.30 EURO/100kg			
higher quality 22.31 – 27.25 EURO/100kg			
by-products			
<ul style="list-style-type: none"> • wasted parts of the straw; dew retted price: up to 3.10 EURO/100kg • wasted parts of the straw price: 3.72 EURO/100kg • by-products from deseeding price: 2.48 EURO/100kg • short scutched fibre wastes: up to 9.92 EURO/100kg • shives used for particleboard production: from 0.74 EURO/100 kg 			

EUROPEAN SUBSIDY FOR THE CULTIVATION OF FLAX AND HEMP

Submitted by Dir. A. Daenekindt: Algemeen Belgisch Vlasverbond, Oude Vestingsstraat 15, B-8500 Kortrijk, Belgium

1999

Idem 1998 and 1997, with the exception that the amounts are no longer in terms of Ecu but Euro.

Subsidy per hectare (gross = net): **815,86 Euro** (25% farmer/75% scutcher).

2000

Subsidy per hectare (gross = net): **795,46 Euro** (25% farmer/75% scutcher).

2001

With the crop 2001 started a new and completely modified Common Organisation of the Markets in flax and hemp, containing a subsidy for the grower and a subsidy for the primary processor of the flax straw.

1. Grower

Flax and hemp are included in the subsidy system for some arable crops (including the obligation to lay fallow 10% of the arable crops area). Subsidy 2001 (basis) for fibre flax and hemp: 75,63 euro/ton. This amount has to be multiplied by the "historic yield for cereals" that has been fixed for each agricultural region. Belgium, for instance, has 13 different agricultural regions, and the subsidy amount for flax fluctuated between 509 and 275 euro per hectare.

2. Primary processor (scutcher)

A subsidy is given to the primary processor for the quantity of fibres that is produced:

- 100 euro per ton for long flax fibres;
- 90 euro per ton for short flax fibres and hemp fibres.

3. Additional subsidy

In some regions (Netherlands, Belgium and North of France) an additional subsidy is assigned to the fibre producer:

- for northern regions: 120 euro per hectare;
- in southern regions: 50 euro per hectare.

2002

Same system as for the crop 2001, but change of some subsidy amounts.

1. Grower: basis subsidy 63 euro/ton (instead of 75,63 euro);

2. Processor (scutcher):

- 160 euro per ton for long flax fibres;
- 90 euro per ton for short flax fibres and hemp fibres.

3. Additional subsidy (NL/B/F)

- for northern regions: 120 euro per hectare;
- in southern regions: 50 euro per hectare.

COUNTRY DATA ON FIBRE FLAX

BELARUS

	1995	1996	1997	1998	1999	2000
Cultivated area [ha]	96800	78500	73600			81800
Straw yield [t/ha]	2.80	2.80				
Long fibre yield [t/ha]	0.25	0.18				
Long fibre production [t]	15500	14.300				
Short fibre yield [t/ha]	0.36	0.44				
Short fibre production [t]	35100	34600				
Percentage of dew retting [%]	99.2	97.50				
Mill consumption of flax [t]	20800	23800				
Seed yield [t/ha]	0.24	0.30				
Yarn production [t] (wet + dry spinning)	16056	16600				
Production of textiles [1000 m]	35100	35800				
Particleboards production [m ²]	3000	2237				
Export of seed [t]	°	°				
Export of yarn [t]	°	-				
Export of fibre [t]	194000	18100				
Export of linen textiles (fabrics) [1000 m]	3900	1260				

sent by: S.P. Tkachev, A.V. Krugliakov, A. Lopatyniuk, BELINTERGROPROM, Minsk, Belarus (data from 1993-1995),
P.P. Gulevich, Ministry of Agriculture of the Rep. of Belarus, Minsk, Belarus (1996)
I.J. Jarmolovitch, Ministry of Statistics and Analysis of RB, Minsk, Belarus (2000)

BULGARIA

	1996	1997	1998	1999	2000	2001	2002
Cultivated area [ha]	300	200	58	58	300	210	470
Straw yield [t/ha]	3.05	2.5				2.4	
Long fibre yield [t/ha]	°	°					
Long fibre production [t]	29	12	12			25	
Short fibre yield [t/ha]	°	°					
Short fibre production [t]	341	33	49			57	
Percentage of dew retting [%]	0	0					
Mill consumption of flax [t]	1471		697			116	
Seed yield [t/hm ²] [t/ha]	0.72	0.40					
Yarn production [t] (wet + dry spinning)	1045	456	398			84	
Production of textiles [1000 m]	2598	973	1935			1080	
Particleboards production [m ²]	0	0					
Export of seed [t]	0	0					
Export of yarn [t]	21	0					
Export of fibre [t]	0	0					
Export of linen textiles (fabrics) [1000 m]	257	350	577			600	
Export of cloth (1000 m ²)	1095	405	639			903	
Import of fibre [t]	689	396	884			82	
Import of yarn [t]	40	°	50			3	
Import of textiles [1000 m]	°	°					
Import of seed [t]	°	°				16	
Import of linen cloth [1000 m]	°	°					

sent by: Dr. A. Balabanova, AgroBioInstitute, 2232 Kostinbrod-2, Bulgaria

CZECH REPUBLIC

	1997	1998	1999	2000	2001	2002
Cultivated area [ha]	2155	4117	5348	6302	7095	5900
Harvested [ha]	2090	3719	5232	5911	5566	
Straw yield [t/ha]	3.19	3.01	3.34	2,36	3,23	
Long fibre yield [t/ha]	0.32	0.3	0,39	0,35	0,24	
Long fibre production [t]	1739	1235	2098	2235	1591	
Short fibre yield [t/ha]	0.53	0.5	0,53	0,42	0,44	
Short fibre production [t]	2586	1835	2797	2661	3141	
Percentage of dew retting [%]	100	100	100	100	100	
Mill consumption of flax [t]	17354	11200	17484	16811	18526	
Seed yield [t/ha]	0.51	0.51	0.56	0,50	0,5	
Yarn production [t] (wet + dry spinning)	4081	3850	4835	5301	4300	
Production of textiles [1000 m]	10166	12160	*	*	*	
Particleboards production [m ²]	31070		0	0	0	
Export of seed [t]	1100	730	1340	3421	2526	
Export of yarn [t]	1487	1202	1364	1839	1430	
Export of fibre [t]	168	100	90	267	207	
Export of linen textiles (fabrics) [1000 m]	8124	°	*	*	*	
Export of cloth (more than 85% linen) [t]	1705	1830	2138	2470	1996	
Export of cloth (less than 85% linen) [t]	211	180	184	264	183	
Import of fibre [t]	1516	2248	2925	3001	3303	
Import of yarn [t]	81	79	349	456	279	
Import of textiles [1000 m]	1354	°	*	*	*	
Import of seed [t]	40	771	561	449	356	
Import of linen cloth (more than 85% linen) [t]	289	16	512	609	514	
Import of linen cloth (less than 85% linen)[t]	58	28	76	103	78	

sent by: H. Suchomelová, P. _mirous, S. Krmela, ATOK Praha, Flax Union CR, _umperk-Temenice, Czech Republic

ESTONIA

	1995	1997	1999	2000	2001	2002
Cultivated area [ha]	185	323	115	137 ¹⁾	27 ¹⁾	30
Straw yield [t/ha]	0,870	0,198	0,513	0,577	3,9 ^{**)}	
Long fibre yield [t/ha]						
Long fibre production [t]	°					
Short fibre yield [t/ha]						
Short fibre production [t]	°					
Percentage of dew retting [%]	°					
Mill consumption of flax [t]	°					
Seed yield [t/ha]	°0,373	0,303	0,513	0,212 ¹⁾		
Yarn production [t] (wet + dry spinning)	°					
Production of textiles [1000 m]	°-	10	3910	7070		
Particleboards production [m ²]	°					
Export of seed [t]	°	276	452	71	317 ³⁾	
Export of yarn [t]	°34358	13868	50970	132339	99786 ³⁾	
Export of fibre [t]	0399	454	236	1282	2002 ³⁾	
Export of linen textiles (fabrics) [1000 m]	°					
Export of cloth [1000 m ²]	°17217	180	166217	249532	296539 ³⁾	
Import of fibre [t]	33322	5123	62834	137460	148850 ³⁾	
Import of yarn [t]	1662	886	19775	22568	6895 ³⁾	

sent by: Mr. Einar Kikkas, Department of Agriculture, Ministry of Agriculture, Tallinn, Estonia

FINLAND

	1997	1998	1999	2000	2001	2002	2003
Cultivated area [ha]	943	800	850	1067	405	202	97
Straw yield [t/ha]							
Long fibre yield [t/ha]							
Long fibre production [t]							°
Short fibre yield [t/ha]							°
Short fibre production [t]							°
Percentage of dew retting [%]	100	100	100	100	100		°
Mill consumption of flax [t]	300	300	300	300	300		°
Seed yield [t/ha]							°
Yarn production [t] (wet + dry spinning)							°
Production of textiles [1000 m]							°
Particleboards production [m ²]							°
Export of seed [t]							°
Export of yarn [t]							°
Export of fibre [t]							°
Export of linen textiles (fabrics) [1000 m]							°
Export of cloth (less than 85% linen)[t]							°
Import of fibre [t]							°
Import of yarn [t]							°
Import of textiles [1000 m]							°
Import of seeds [t]							°
Import of linen cloth (more than 85% linen) [t]							°
Import of linen cloth (less than 85% linen) [t]							°

sent by: Juha Pirkkamaa, Agropolis Ltd, Agropolis-Engineering, FIN-31600 Jokioinen, Finland

LATVIA

	1996	1997	1998	1999	2000
Cultivated area [ha]	1240	1600	220/2200	200/2000	300/1600
Straw yield [t/ha]					
Long fibre yield [t/ha]	0.59	0.62	0.62	1.06	0.77
Long fibre production [t]	790	960	1340	2100	1100
Short fibre yield [t/ha]	°				
Short fibre production [t]	°				
Percentage of dew retting [%]	°				
Mill consumption of flax [t]					
Seed yield [t/ha]	0.33	0.23	0.30	0.29	0.32
Yarn production [t] (wet + dry spinning)	°				
Production of textiles [1000 m ²]	623	606	411	545	262
Particleboards production [m ²]	°				
Export of seed [t]	-	-	-	-	0.0
Export of yarn [t]	136.8	739.2	632.7	790.9	829.4
Export of fibre [t]	362.8	913.2	844.8	830.7	679.5
Export of linen textiles (fabrics) [%]	...	...	...	...	...
Export of cloth [1000 m ²]	....	516.3	1584.5	1613.9	2911.4
Import of fibre [t]	438.6	2002.3	1786.3	2087.0	1715.0
Import of yarn [t]	15.9	36.5	465.7	360.2	794.4
Import of textiles [1000 m]	...	...	...	...	...
Import of seed [t]	104.7	135.0	82.6	159.7	128.5
Import of linen cloth [1000 m]	...	259.3	221.0	264.6	480.9

sent by U. Apels, Department of Information, Ministry of Agriculture of the Republic of Latvia, Republic Sq. 2, Riga, LV-1981,

LITHUANIA

	1997**	1998	1999**/	2000**/	2001	2002
Fibre Flax Cultivated area [ha]	6100	6500	8 800	8 600	9600	9300
Fibre Flax Harvested area [ha]					3637	
Straw yield [t/ha]	3.1	3.4	1,8	3,2	3,8	
Long fibre yield [t/ha]	0.33	0.36	0,20	0,34	0,38	
Long fibre production [t]	2030	2300	1 720	2 900	1400	
Short fibre yield [t/ha]	0.50	0.54	0,30	0,50	0,59	
Short fibre production [t]	3033	3500	2 580	4 300	2130	
Percentage of dew retting [%]	100	100	100	100		
Mill consumption of flax [t]	5063	5800	4 300	7 200		6000
Seed yield [t/ha]	0.47	0.43	0,42	0,31	0,35	
Yarn production [t] (wet + dry spinning)	2917		3 128	2 735		
Production of textiles [1000 m]	11781		20 000	17 700		
Particleboards production [m ²]	-					
Export of seed [t]	-					
Export of yarn [t]	204		219	162		
Export of fibre [t]	199			9 380		
Export of linen textiles (fabrics) [1000 m]	76					
Export of cloth (1000 m ²)	9098		15 800	14 486		
Import of fibre [t]	1399			8 385		
Import of yarn [t]	3					
Import of textiles [1000 m]	1					
Import of seed [t]	0	10			35	
Import of linen cloth [1000 m]	-					

sent by: */ calculated data

*/ O. Juknevičienė, Minist. of Agricul., Dep. of Strategy of Plant Production, Prospekt Gediminas 19, Vilnius, Lithuania; completed by Dr. Director Algimantas Endriukaitis, LIA – The Lithuanian Institute of Agriculture Upyte Research Station, Panevėžio, 7, Upyte Panevezys Distr., LITHUANIA

POLAND

	1998	1999	2000	2001	2002	2003
Cultivated area [ha]	2548	1223	5093	5200 ha (fibre flax 4520 ha, linseed 600 ha).	5100	6000
Straw yield [t/ha]	3.4	3.0	°	°	°	4.0
Long fibre yield [t/ha]	0.6	°	°	°	°	0.7
Long fibre production [t]	2192 ¹	759	°	°	°	4200
Short fibre yield [t/ha]	°		°	°	°	0.35
Short fibre production [t]	898.4 ¹	196	°	°	°	1500
Percentage of dew retting [%]	100	100	100	100	100	100
Mill consumption of flax [t]	5074.8	1882	°	°	6880	6760
Seed yield [t/ha]	0.7	0.6	°	°	°	0.4
Yarn production [t] (wet + dry spinning)	3024	889	°	°	6669	7400
Production of textiles [1000 m]	7658	4607	°	°	8772	4500
Particleboards production [m ²]	°	°	°	°	°	°
Flax/Hemp Export of seed [t]	°	°	°	°	°	39/1
Flax/Hemp Export of yarn [t]	458	°	°	°	°	3800/2
Flax/Hemp Export of fibre [t]	°	°	°	°	°	820/12
Export of linen textiles (fabrics) [1000 m]	4875	69%	°	°	°	760
Export of cloth [1000 m ²]	°	0	°	°	°	°
Flax/Hemp Import of fibre [t]	2052	803	°	°	°	3790/24
Flax/Hemp Import of yarn [t]	339	345	°	°	°	840/1
Import of textiles [1000 m]	°	0	°	°	°	867
Import of seed [t]	°	0	°	°	°	3967/319
Import of linen cloth [1000 m]	°	°	°	°	°	°

Source: H. Smarzynski, Polish Flax Foundation, Institute of Natural Fibres, Poznan, Poland (to 1999)

*/ estimated data; **/ in 1000m²; ^{1/} includes rural fibre produced in 1997 and 98. Data from 2000-2003 by Polish Flax and Hemp Chamber. Year 2003; data in files 1-11-prognosis by Polish Flax and Hemp Chamber, 12-22-data for 9 months of 2003 acc. to data of the Ministry of Agriculture and Rural Development and of Ministry of Economy.

RUSSIA

	1996	1997	1998	1999	2000	2001
Cultivated area [ha]	153460	113860	107340	104050	107610	127 361
Straw yield [t/ha]	1.74	0.95	1.43	1.02	2.11	
Long fibre yield [t/ha] ¹	0.43 ⁴	0.25 ⁴	0.43 ⁴	0.36 ⁴	0.55 ¹	
Long fibre production [t] ¹	58990 ²	23400 ²	33540 ²	23700 ²	51170 ²	58000 ²
Short fibre yield [t/ha]	°	°				
Short fibre production [t]	°	°				
Percentage of dew retting [%]	°	°				
Mill consumption of flax [t]	°	°				
Seed yield [t/ha]	0.14	0.13	0.08	0.10 ⁵	0.17	
Yarn production [t] (wet + dry spinning) single -thread yarn	36632 ³	31565 ³	17093 ³	20108 ³	19806 ^{3,4}	16787
Production of textiles [mln m ²]	111	105	68.8 ¹	90,4 ²	113 ⁴	98,4
Particleboards production [m ²]	°	°				
Export of seed [t]	0.2	-	49			
Export of yarn [t]	212	906	433			
Export of fibre [t]	181	1934	969			
Export of linen textiles (fabrics) [1000 m]	12829 ³	13932 ³	30214 ³			
Export of cloth (1000 m ²)	-	-				
Import of fibre [t]	6764	11932 ³	11682			
Import of yarn [t]	49	570	456			
Import of textiles [1000 m]	4782 ³	5692 ³	61365 ³			
Import of seed [t]	24	19	147			
Import of linen cloth [1000 m]	°	°	°			

sent by: Alexander Goncharov, Deputy Chief Of Department Of Foreign States Statistics And International Cooperation
Goskomstat Of Russia, Moscow, Russia

¹/for 1ha harvested area; ²/data for long fibred flax; ³/unifilar linen production; ⁴/data for I-X/2001

UKRAINE

	1996	1997	1998	1999	2000	2001	2002
Cultivated area [ha]	54500	39975	31200	21 900	1930	28200	28200
Straw yield [t/ha]	2.08	1,9	2,4		2.4	2.6	2.4
Long fibre yield [t/ha]	0.10	0.12	0.155		0.19	0.18	0.15
Long fibre production [t]	5440	4680	4836		2509	5076	4323
Short fibre yield [t/ha]	0.22	0.17	0.205		0.29	0.34	0.29
Short fibre production [t]	11900	6196	6396		5597	8598	8357
Percentage of dew retting [%]	100	100	100		100	100	
Mill consumption of flax [t]	17000						
Seed yield [t/ha]	0.18	0.15	0.18		0.29	0.30	0.28
Yarn production [t] (wet + dry spinning)	7630						
Production of textiles [1000 m]	19.80 [*]						
Particleboards production [m ²]	90						
Export of seed [t]	°						
Export of yarn [1000 \$ USA]	353						
Export of fibre [t]	°						
Export of linen textiles (fabrics) [1000 \$ USA]	2813						
Export of cloth [1000 m ²]	°						
Import of fibre [t]	°						
Import of yarn [t]	°						
Import of textiles [1000 m]	°						
Import of seed [t]	°						
Import of linen cloth [1000 m]	°						

sent by Prof. Dr. :I. Karpets, Agriculture Institute of Ukrainian Academy of Agrarian Sciences, Chabany, Ukraine

^{*}/ in mln m²

STATISTICAL DATA ON LINSEED

LINSEED AREA HARVESTING [ha]

Linseed Area Harv [ha]	Year			
	1999			
Total World	3,489,786			
Total Europe	598,111			
Linseed Area Harvesting in Individual Countries (ha)				
Afghanistan	39,000		India	930,000
Argentina	101,000		Iran, Islamic Rep of	744
Australia	4,400		Iraq	590
Bangladesh	69,820		Italy	1,000
Belarus	70,000		Kazakhstan	50,000
Belgium-Luxembourg	10,000		Kenya	900
Brazil	17,000		Latvia	2,200
Bulgaria	58		Lithuania	6,100
Canada	811,500		Mexico	2
Chile	1,000		Nepal	55,000
China	570,000		Netherlands	4,000
Croatia	15		New Zealand	500
Czech Republic	2,017		Pakistan	7,974
Ecuador	75		Poland	3,724
Egypt	15,000		Romania	2,504
Eritrea	3,000		Russian Federation, in 1997 – 92,360; in 1998 – 60,500	61,250*
Estonia	323		Slovakia	322
Ethiopia	71,000		Spain	91,000
France	44,500		Sweden	14,100
Germany	110,048		Tunisia	2,200
Hungary	200		Turkey	300
			Ukraine	26,000
			United Kingdom	101,000
			United States of America	135,170
			Uruguay	2,500
			Uzbekistan	3,000

Source: FAOSTAT Database Results – <http://apps.fao.org>

* A. Surinov, General Director, State Commit. of the Rus. Federat. on Statist., (GOSKOMSTAT of Russia),
Dep. of Foreign States Statistics and
Intern. Cooper., Moscow, Russia

STATISTICAL DATA ON LINSEED (FLAXSEED)

Data about linseed cultivation area, provided by certain countries:

Czech Republic	1997	1998	1999	2000	2001	2002
Cultivated area [ha]	600	646	2251	1700	3280	2385

sent by: H. Suchomelová, P. _mirous, S. Krmela, ATOK Praha, Flax Union CR, _umperk-Temenice,
Czech Republic

Finland	1997	1998	1999	2000	2001
Cultivated area [ha]	2207	2051	2079	1372	1558

sent by: Juha Pirkkamaa, Agropolis Ltd, Agropolis-Engineering, FIN-31600 Jokioinen, Finland

Latvia	1997	1998	1999	2000	2001
Cultivated area [ha]	1600	220	200	300	

sent by U. A. pels, Department of Information, Ministry of Agriculture of the Republic of Latvia,
Republic Sq. 2, Riga, LV-1981,

Russia	1997	1998	1999	2000	2001
Cultivated area [ha]	92360	60500	62000	87630	

Sent by: Alexander Goncharov, Deputy Chief Of Department Of Foreign States Statistics and
International Cooperation Goskomstat Of Russia, Moscow, Russia

STATISTICAL DATA ON INDUSTRIAL HEMP

HEMP HARVESTED AREA

Fibre Hemp Area Harvested [ha]	Year			
	1996	1997	1998	1999
Bulgaria		48	8	8
Canada	0***	0***	2000***	1200***
Chile	4,200	4,200	4,200	4,200
China	58,000***	15,000	15,000	15,000***
Croatia	14	14	14	14
Hungary	1,200***	900***	1,077	1,077
Korea, Dem People's Rep	17,000	17,000	17,000	17,000
Korea, Republic of	250	250	250	250
Romania	1,000***	2,000***	3,080	3,000***
Russian Federation	11,490*	9,490*	6260*	10,230*, 16,980*in 2000
Ukraine	4,000***	3,500***	2,000	2,000
Yugoslavia, Fed Rep of	679	1,000***	1,000***	1,000***

Source: FAOSTAT Database Results – <http://apps.fao.org>

*A. Surinov, General Director, State Commit. of the Rus. Federat. on Statist., (GOSKOMSTAT of Russia), Dep. of Foreign States Statistics and Intern. Cooper., Moscow, Russia

**H. Smarzynski, Polish Flax Foundation, Institute of Natural Fibres, Poznan, Poland

***Michael Dr. Karus, nova –Institut für politische und ökologische Innovation, Nachwachsende Rohstoffe, Thielstr. 35, 50354 Hürth Germany

HEMP HARVESTED AREA IN EUROPEAN UNION COUNTRIES AND IN POLAND

COUNTRY OF EU	Fibre Hemp Area Harvested [ha]					
	1996*	1997*	1998*	1999*	2000/2001**	2001/2002**
Austria	661	938	974	289	287	860
Belgium			0	1	0	0
Denmark			26	23	7	7
Finland	2	53	1218	93	59	2
France	7588	10980	9682	9515	7700	6900
Germany	1362	2766	3553	3993	2967	1948
Italy	0	0	255	197	151	200
Ireland	0	23	28	22	6	0
Luxembourg	5	13	13	0	0	0
Netherlands	893	1322	1055	872	806	946
Portugal			770	185	4	0
Spain	1450	4828	19860	13473	6103	784
Sweden					0	0
UK	1697	2293	2556	1517	2245	2566
Switzerland	150	200	250	250	250*	
Total area in EU	*13658	*23216	*39990	*30179	**20404	**14213
Poland	1296	240	158	36	53	154 In 2002–2000ha

Source: *Michael Dr. Karus, nova –Institut für politische und ökologische Innovation, Nachwachsende Rohstoffe, Thielstr. 35, 50354 Hürth Germany

**Mr. Jordi Petchamé Ballabriga, Administrateur, Olives, huile d'olive et plantes textiles, D.G. VI.C.4 - Loi 130 7/126, European Commission, Rue de la Loi 200, B- 1049, Bruxelles, Belgium

RUSSIA, HEMP CULTIVATION IN RUSSIAN FEDERATION IN 1995-1999

Year	Hemp cultivated area in Russia	Summary output of hemp fibre
	Total [ha]	[tonnes]
1995	9170	4300
1996	11490	4030
1997	9490	2980
1998	6260	2190
1999	10230	4140
2000	16980	7070

sent by: A. Surinov, General Director, State Commit. of the Rus. Federat. on Statist., (GOSKOMSTAT of Russia), Dep. of Foreign States Statistics and Intern. Cooper., Moscow, Russia

EUROFLAX – PROFILES

Dr. Michel Larbier
ESCORENA Secretary
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Highlights from Mr. Larbier's Curriculum Vitae

Prof. Larbier, a French national has a Degree in Agricultural Sciences from the National Institute of Agronomy (INA-Paris). He also has a Ph. D. in Poultry Nutrition from the University of Paris VI and a Science Doctorate in Animal Physiology from the University of Tours. His research in the field of animal production has been the subject of over 160 scientific papers and a book (350 p.), Nutrition and Feeding of Poultry, which has been translated into English, Polish and Romanian.

From 1992-1998, he was responsible for INRA's international relations with the Mediterranean countries (southern Europe, North Africa and Near East). During this period he created and coordinated 18 multidisciplinary research networks (GRAM: Mediterranean Agricultural Research Group).

From 1998 to October 2002, he headed the Poultry Research Station, which included 40 researchers, 60 technicians and 15 research students. At the same time, he served as Advisor to the Ministry of Finance, the to the French Agency for Food Safety (AFSSA). On the international level, Prof. Larbier has been Chairman of the Working Group on Poultry Nutrition of the World's Poultry Science Association since 1996



Future plans

2003

1. Flax workshop connected with the 50th anniversary of Experimental Farm of the Institute of Natural Fibres in Sielec Stary (1953-2003) entitled: "*Evaluation of economical and agricultural value of fibre and oil flax cultivars grown in Europe*", Poznan/Sielec Stary, Poland, June, 20-21, 2003
2. International Conference "Flax and Allied Bast Fibre Plants for Human Welfare". National Research Centre (NRC), to be held on 8-11 December 2003 in Cairo, Egypt.
3. Co-organisation of the periodical conference: 6th All-Russia Fair-Exhibition-Conference "Russian Flax 2003", Vologda, Russia, March.

2004

3rd GLOBAL WORKSHOP (GENERAL CONSULTATION) OF THE FAO EUROPEAN COOPERATIVE RESEARCH NETWORK ON FLAX AND OTHER BAST PLANTS, entitled: "*BAST FIBROUS PLANTS FOR HEALTHY LIFE*", October 24-28, 2004, in Banja Luka, Bosnia and Herzegovina, Republika Srpska.

REMINDER

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Prof. Dr. Ryszard Kozlowski (Newsletter Editor)

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