

INTRODUCTION

Dear Readers,

As you are aware, through China's entry to the World Trade Organization (WTO) and the lifting of textile quotas at the beginning of this year, the textile industry in Europe has been facing big challenges. The sharp increase in imports of many Chinese textiles has alarmed European countries, and negotiations were taken up by the European Union with China to respond to this unexpected situation and to find a mutually acceptable solution to all concerned. The EU – China textile agreement of 10 June 2005 restricts China's textile imports to the EU until 2008. On the other hand, this agreement has also restricted those companies who moved part of their processing plants to China. These companies now fear, that due to these same restrictions they will not be able to furnish sufficient quantities of textiles to meet western demand. I would like to enquire if there is a possibility to find a better compromise between European producers and importers from China and if it was really justified to introduce these import limits on China in a globalized world? According our network information, to date China has been the biggest importer of European flax fibres, about 70 000 tonnes per year (see: Flax and linen industry in China. Present situation and perspectives; published in EUROFLAX No 21). What kind of strategies should be developed in the near future by textile producers outside China? My answer is that we have to find a way of coexisting with competition with China. As the ESCORENA Network, working together with Chinese scientists and producers in the area of flax and other bast plants, we should realize that continued cooperation with China will contribute to the effectiveness and usefulness of our network. In this connection, I recall the hemp conference "Bast Fibrous Plants on the Turn of Second and Third Millennium", held in September 2001 in Shenyang City, China, which resulted, for example, in a better use of the available genetic resources in China and other hemp growing countries, to the benefit of all. I do not see any other possibility than coexisting with this competition, otherwise isolation might hinder economic growth. We should opt for a reasonable distribution of work allowing each region and country to produce any goods in the best and most economic way. The establishment of WTO was meant to do just this.



I would like to remind you, that our next conference on textiles for sustainable development will take place in Port Elizabeth, South Africa on October 23-27, 2005 (see call for papers on page 6).

Once again we cordially invite you to attend this event! Experts from 21 countries have registered, with 54 oral and 29 poster presentations, namely from: Brazil, Canada, China, Czech Republic, Cuba, Ethiopia, Germany, Greece, Hungary, India, Iran, Italy, Poland, Portugal, Russia, Serbia & Montenegro, South Africa, Swaziland, Sweden, Turkey and United Kingdom (see preliminary programme on page 8 and further updates on website: www.textileconference2005.co.za).

Looking forward to your contributions.

Yours sincerely,

The Editor, Prof. Dr. Ryszard Kozłowski

STRUCTURE OF THE NETWORK

The European Cooperative Research Network on Flax and other Bast Plants is one of the eleven active networks working within ESCORENA (European System of Cooperative Research Networks in Agriculture). The contact person for ESCORENA in FAO is Ms. Jutta Krause, Regional Representative for Europe, FAO Regional Office for Europe (REU), Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, 00100 Rome, Italy. General information on ESCORENA, the network coordinators, and publications of network results in the REU Technical Series is available on the website of REU

http://www.fao.org/world/regional/reu/Content/Escorena/index_en.htm

COORDINATION CENTRE OF THE NETWORK: Institute of Natural Fibres, 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

Network Coordinator – Prof. Dr. Ryszard Kozłowski, General Director of the Institute of Natural Fibres, Centre of Excellence on Natural Lignocellulosic Fibrous Raw Materials “CELLUBAST”, Poznan, Poland, tel.: +48(0) 61 8480-061



Secretary of the Network – Maria Mackiewicz-Talarczyk M.Sc. (Agr.), Institute of Natural Fibres, Poznan, Poland, tel.: +48(0) 61 8455 823

At present, the whole Network brings together 357 experts from 52 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, Croatia, 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, Serbia and Montenegro, Romania, Russia, Slovak Republic, Spain, South Africa, Sweden, Switzerland, Thailand, Turkey, UK,

Ukraine, and the USA.

The Network is represented in South America by Prof. Dr. Alcides Leão (UNESP-Universidade Estadual Paulista, SP-18603-970 Botucatu, Brazil, tel. +55 14/6802 7163, fax +55 14/6821 3438, e-mail: alcidesleao@fca.unesp.br), and Ing. Agr. Daniel Sorlino, Cátedra de Cultivos Industriales, Facultad de Agronomía, Universidad de Buenos Aires, Av. San Martín 4453 (1417) Cap., Ph: 4524-8074/8040, fax: 4514-8739, e-mail: dsorlino@mail.agro.uba.ar, in North America by Dr. Paul Kolodziejczyk, Lead Scientist, New Crops & New Products, Olds College Centre for Innovation, 4500 -50th Street, Olds, Alberta, Canada T4H 1R6, Ph: (403) 507-7970, fax: (403) 507-7977, e-mail: paulk@admin.oldscollege.ab.ca, www.occ.ab.ca, in the Near East by Prof. Dr. Dardiri Mohamed El-Hariri, National Research Centre, El-Tahrir str., Dokki Cairo, Egypt, Ph. +202/ 33 77164, fax: +202/ 33 70931, e-mail: elhariri_d_m@menanet.net. Dr. Rajesh Anandjiwala represents Network in Africa [National Fibre, Textile & Clothing Centre (NFTCC), CSIR, Manufacturing & Materials Technology Unit, e-mail: Ranandi@csir.co.za, Rajesh.Anandjiwala@upe.ac.za, fax: ++27-(0) 41-583 2325, Ph.: ++27-(0) 41-508 3273, Address: CSIR, P.O. Box: 1124, Gomery Avenue, Summerstrand, Port Elizabeth 6000, South Africa]

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WG/4. Quality

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The reports of the developments of the quality activities within European program: the COST Action 847: TEXTILE QUALITY AND BIO-TECHNOLOGY, coordinated by Prof. S. Sharma were described in some previous issues (WG News).

WG/5. Non-Textile Applications

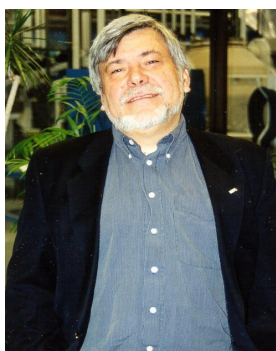
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Networks' Representatives pictures:

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In the Near East – Prof. Dr. Dardiri Mohamed El-Hariri, National Research
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WORKING GROUP NEWS

Please note!

The more detailed description regarding the activities of the WG1/, WG/2 and WG/4 was given in the issue 22, other Working Groups' reports were provided in all previous editions of this bulletin and can be provided on request by the Network Coordinator.

Activities of the Network are aimed at solving the following problems:

- Development and cultivation of bast fibrous plants is a specific niche production, which can provide with comfort for human body due to eco-friendly properties of natural fibres.
- Reduction in the deficit of lignocellulosic fibrous raw material in Europe.
- Contribution to the reduction in over-production of food in Europe.
- Utilization of by-products such as linseed for the production of agro-fine-chemicals applied to healthy food and nutrition.
- Reclamation of industrial areas polluted with heavy metals by the cultivation of heavy metal-absorbing bast fibrous plants (non-food crops)
- Contribution to sustainable development of rural areas of Europe and other regions.



FLAX, HEMP AND ALLIED FIBRES IN THE WORLD

Co-operation with the FAO, Rome, Italy

Possible Year of Natural Fibres. Contact person Mr. Brian Moir, FAO, Rome, Italy

The possibility to hold an International Year of Natural Fibres (probably in 2009) under auspices of FAO has been discussed in the correspondence between Mr. Brian Moir, Secretary Intergovernmental Group on Hard Fibres, Commodities and Trade Division of the FAO in Rome and Professor Kozłowski, Institute of Natural Fibres, Poland. The goal would be to raise the profile of the natural fibres, emphasising their natural, environmental, wholesome attributes, and thus promote consumption. The previous similar activity was organized by FAO in 2004 - the International Year of Rice.

Advance notice of the Sixth Intersessional Consultation on Natural Fibres, London, 2 December 2005.

The Intergovernmental Groups on Jute and Hard Fibres meet roughly every two years. Intersessional consultations have been held between those meetings to review the market situation, review progress with Common Fund projects on fibres, and consider any other matters, which may arise. The last intersessional meeting was in Rome in March 2004.

We have now made tentative arrangements for the Sixth one-day intersessional meeting to be held at the offices of the International Coffee Organisation in London, Friday 2 December of this year.

This meeting is open to everyone with an interest in hard fibres, jute, and similar natural fibres.

Further information on the meeting will become available on the ESC website, www.fao.org/es/esc, then click on "Jute and Hard Fibres" on the left side.

The agenda for this meeting is likely to include:

1. Market situation and prospects for jute; sisal; abaca; and coir. (FAO presentations, discussion by participants).
2. Review of CFC Project activities on Hard Fibres
3. The proposed International Year of Natural Fibres
4. Other items – please advise me (brian.moir@fao.org) of any other issues which might be included in the agenda.



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

Next Conferences Proposals

FAO/SCORENA

International

Conference Textiles For Sustainable Developments in South Africa

Conference Hosted And Supported

By

CSIR, South Africa, Institute Of Natural Fibres, Poland And South African Government Organizations

at

Port Elizabeth, South Africa

23-27 October, 2005

Conference website: www.textileconference2005.co.za



SCOPE OF THE CONFERENCE

The textile industry is the fourth largest sector in the world, providing direct and indirect employment to millions of people. The potential of generating employment through initiatives in this sector such as agro-economic activities of growing raw material for natural fibres and the efficient processing of them into various products encompassing the whole value chain effectively provides the opportunity for sustainable development, particularly in developing nations faced with problems of unemployment, rural destruction caused by poverty and lack of advanced skills. The present conference entitled “Textiles for Sustainable Development” is aimed at bringing together experts from the fibre, textiles, clothing, agriculture, composite and niche product areas on a common platform for discussing recent progress, dissemination of research and technical findings and to determine the scope of future research for the economic development of South Africa in particular and the whole world at large.

THEMES

The conference will focus on the following themes and cross-cutting research and technical activities:

- Agronomy, economics and market trends for the production of natural fibres.
- Natural fibres and synthetic; their properties, processing and applications.
- Properties, performance and primary processing of natural fibres.
- Textiles and clothing production processes and properties.
- Nanotechnology applications in textile industry
- Comfort - and health - related applications of textiles.
- World trade and marketing of fibres, textiles and clothing.
- Modern and innovative textile processing techniques and technologies.
- Smart textiles.
- New trends in standardization
- Economic aspects in fibre production and processing

The cost of all events (fee) include: attendance to all technical and poster sessions, conference dinner, study tour, entertainment evening, tea/coffee breaks and lunches.

CONTACT INFORMATION:

TECHNICAL AND RELATED TO ABSTRACTS/PAPERS

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Conference Programme

Sunday 23 October 2005

Time	Conference Venue: The Boardwalk Casino & Entertainment World Tsitsikamma Conference Centre, Marine Drive, Port Elizabeth	
15:00	Early Registration & Welcome Cocktail Party	
17:30	Transport:	2 Buses will depart from the Tsitsikamma Conference Centre to the City Hall.
18:00	Venue:	City Hall, Auditorium Foyer.
	Cocktail Party:	The Mayor will host a 'Welcome to our City' function for the conference delegates.
19:30	Transport:	2 Buses will depart from the City Hall and travel via the Holiday Inn to the Tsitsikamma Conference Centre.

Conference Programme

Day 1

Monday 24 October 2005

08:00	1 Bus will depart from the Holiday Inn and travel to the Tsitsikamma Conference Centre	
Time	Venue 1	Venue 2
08:00 - 09:00	Late Registration:	
09:00 -	Conference Spokespersons, Abisha Tembo (CSIR) and Charles Mills (the dti)	
	Welcome Address: CSIR:- Dr P. Mjwala Group Executive Research & Development & Strategic Human Capital Development	
	FAO Network Coordinator:- Prof. Dr. Ryszard Kozlowski, INF, Poland, Director General of the Institute of Natural Fibres	
10:00	The Department of Trade & Industry:- Dr J.F.A Potgieter, Chief Director of Innovation & Technology	
10:00 - 10:25	Refreshment Break	
	Plenary Session, Chairperson: Charles Mills	
10:30 - 10:50	Trends and Developments of the Worldwide Textile Industry, Lutz Trützschler, Trützschler GmbH&Co.KG	
10:55 - 11:15	Overview of the South African Textile Industry, Igsaan Salie, Textfed	
	Parallel Session, Agronomy & Primary Processing, Chairperson: Monde Sotana and Martin Tubach	Parallel Session, Environmental Aspects of Textile Production, Chairperson: Francois Barkhuysen
11:20 - 11:40	Fibre quality of hemp grown on the Swedish Island Gotland - Östbom, G; Svennerstedt, B	South African Government Commitment to Sustainable Development in The Textile Sector:- Visagie, M.; Singh, V
11:45 - 12:05	Important plant parasitic nematodes affecting fibre crops such as cotton and hemp in South Africa:- van Biljon, E.R.	Cleaner production in clothing manufacture: Foure, P; Lundbo, K; Manaka, B; Wullum, B.
12:10 - 12:30	Flax Canada 2015: Going beyond the status quo:- Ulrich, A, Saskatchewan Flax Development Commission and Biolin Research Inc., Saskatoon, Canada	Cleaner production in textile manufacture – results of cleaner textile production project and results of activities to create an ongoing awareness and demand for textile products produced in a more environmentally responsible manner:- Barclay, S; Buckley, C; Foure, P; Lundbo, K; Manaka, B
12:30 - 13:30	Lunch Break	
		Parallel Session, Fibre, Yarn & Fabric Properties Chairperson Lawrance Hunter
13:30 -	Adaptability of European Fibre Flax (Linum Usitatissimum)	Comparison of cotton yarn strength prediction

13:50	Cultivars To South African environmental conditions - Brough, C; Mhlontlo, S; Sotana, M.M.; Blouw, L.S.	methods:- Křemenáková, D; Militký, J.
13:55 - 14:15	Performance of four European hemp cultivars cultivated under different agronomic experimental conditions in the Eastern Cape Province, South Africa. Blouw, S	Using Neuro-fuzzy for Prediction ring spun yarn strength from cotton fiber properties:- Shams-Nateri, S
15:20 - 14:40	Application of osmotic pressure for evaluation of quality and quantity of fibre in flax and hemp:- Kozłowski, R; Konczewicz, W; INF, Poznan, Poland.	Cotton fiber quality index:- Militký, J.
	Parallel Session, Trends in Textile Metrology Chairperson: Martin Tubach	
14:45 - 15:05	A review on the development of rapid analytical techniques for assessing physical properties of modified linen fabric:- Sharma, S; McCall, R; Kernaghan, K	
15:05	Refreshment Break Poster Session 1 Coordinators: Lydia Boguslavsky & Anton Botha	
	Poster - Polymer application in laundering content bleaching agent for wash fastness improvement of dyed fabrics bi-functional Reactive dyes:- Valipoor, P; Yazdanshenas, M.E.; Montazer, M.M.; Saadatjou, N.	Poster - Preparation of enzymatically modified flax fibre to production of rotor-spun yarn for apparel:- N. Sedelnik N. ¹ ; S. Zareba St ² ; J. Szporek J. ^{2, 1} INF, Poznan, Poland, ² ZAMATEX, Lodz, Poland
	Poster - Designs to save our environment:- Foure, P; Janisch, C; Kruger, H; Lundbo, K; Manaka, B	Poster - Biopreparation Of Fabrics From Bast Fibres:- Csiszár, E; Szakács, G; Koczka, B; Bezúr, L.
	Poster - Hemp (Cannabis sativa L.) as fibre crop for South Africa in perspective:- Brough, C.S.M.	Poster - Fit assessment of slopers for women with bottom heavy figures:- Magagula, N; Zwane, P
	Poster - Identification and development of Indigenous fibre plant species for small-scale farmers De Bruin, J. N.	Poster - Embellishment of Madhubani designs with Indian traditional embroideries:- Surana, N
16:00	1 Bus will return to the Holiday Inn from the conference venue	
18:00	2 Buses to depart from the Tsitsikamma Conference Centre and travel via the Holiday Inn before going to Lake De la Vie	
19:00	Gala Dinner:- Lake De la Vie - Dress: Black tie, Cash Bar available	
22:30 - 23:00	2 Buses to Return to the Tsitsikamma Conference Centre and travel via the Holiday Inn	

Conference Programme

Day 2

Tuesday 25 October 2005

08:00	1 Bus will depart from the Holiday Inn and travel to the Tsitsikamma Conference Centre	
Time	Venue 1	Venue 2
	Plenary Session, Chairperson: Rajesh Anandjiwala	
08:30 - 09:00	Eco Friendly Natural Fibre Textiles For Sustainable Development, Sabu Thomas, Mahatma Gandhi University, India	
09:05 - 09:35	Cottons Role in Sustainable Textiles, Lawrance Hunter, CSIR, South Africa	
	Parallel Session, Textile Processing (Mechanical) Chairperson: Miguel Angelo Carvalho and Elspa Hovgaard	Parallel Session, Textile Processing (Chemical) Chairperson: Judit Borsa and Amit Rawal
09:40 - 10:05	A new bale cutter breaks the bottle neck of the bast fiber plants processing:- Munder, F; Fürll, CH; Hempel, H	Compatibility of cotton/nylon and cotton/polyester warp-knit terry toweling with industrial laundering procedures:- Gericke, A; Viljoen, L; de Bruin, R, Univ of Stellenbosch, SA
10:10 - 10:30	Refreshment Break	
10:30 - 10:50	Geometrical and dimensional properties of knitted fabrics: the effect of spinning systems and blending ratios:- Shahbaz, B; Ahmad Jamil, N; Farooq, A	Influence of corona treatment on linen fabric dyed with natural dyestuffs: - Schmidt-Przewozna, K; Zimmiewska, M; Kozłowski, R, INF, Poznan, Poland
10:55 - 11:15	Technical innovations from bale to sliver:- Selker, H	Effect of corona treatment on finishing processes of

		linen fabrics:- M. Zimniewska ¹ , R. Kozłowski ¹ , N. Carneiro ² , P. Souto, ² R. Marszalek, E. Mazur, ¹ INF, Poland, ² Universidade do Minho, Portugal
11:20 - 11:45	The effect of course edge on worsted spinning performance and yarn properties:-Botha,A.F; Hunter, L., CSIR, SA	Development of a new vat dyeing process for cellulose materials pre-treated with Corona:- Souto, A; Carneiro, N; Mendes, F; Dias, P
11:45 - 12:05	Digital Printing On Silk Fabric: Surana, N; Philip, R	Liquid ammonia treatment of linen and cotton/linen fabrics:- Csiszár, E; Dornyi, B; Somlai, P; Sajo, I
	Parallel Session, Functional Properties of Textiles / Smart Textiles Chairperson: Ryszard Kozłowski and Thomas Stegmaier	
12:10 - 12:30	The Development Of Multifunctional Fibrous Structures For Technical Applications:- de Araujo, M; Fangueiro, R; José Galdes, M	Comparison of the alkaline hydrolysis of poly (trimethylene terephthalate) and poly (ethylene terephthalate):- Nouri, M; Mehrabli, B
12:30 - 13:00	Lunch Break	
13:35 - 13:55	Antibacterial cotton fibre:- Borsa, J., Lázár, K.	
14:00 - 14:25	Influence of fabric construction, lignin content and other factors on UV blocking:- M. Zimniewska, R. Kozłowski, J. Batog, J. Biskupska, A. Kicinska, INF, Poznan, Poland	
14:25 - 14:50	Towards the comfort of flexible upholstery fire barriers:- Kozłowski, R; Muzyczek, M; Mieleniak, B; Zimniewska, M, INF, Poznan, Poland	
14:50 - 15:15	Smart Cellulosic Fibres and Fabrics:- B. Laszkiewicz ¹ , R. Kozłowski ¹ , P. Kulpinski ² , B. Niekraszewicz ² , P. Czarnecki ² , M. Rubacha ² , ¹ INF, Poznan, Poland, ² Technical University of Lodz, Poland	
15:15	Refreshment Break Poster Session 2 Coordinators: Anton Botha & Vera Soukupova	
	Poster - Enabling smallholder farmers to produce cotton using non-GMO (Bt) cotton varieties:- Cornelissen, A.P.F ; Mabula, L.G.	Poster - Breeding and cultivation of fiber flax In sustainable agriculture:- K. Heller, A. Andruszewska, S. Rolski, INF, Poznan, Poland
	Poster - Blended yarns with high content of flax, obtained by pneumomechanical spinning:- W. Cierpucha ¹ , Z. Czaplicki ¹ , J. Mankowski ¹ , J. Kolodziej ¹ , S. Zareba St ² ; J. Szporek J. ² , ¹ INF, Poznan, Poland, ² ZAMATEX, Lodz, Poland	Poster - Prevention against mildew growth in natural fibres:- J. Walentowska, R. Kozłowski, INF, Poznan, Poland
	Poster - Application of fibrous plants to the bioremediation of industry-contaminated soil:- J. Gasiorek, R. Kozłowski, A. Andruszewska, Cz. Ogurkowski, INF, Poznan, Poland, M. Haubold-Rosar, D. Landgraf, Research Institute for Post-Mining Landscapes Inc., Finsterwalde, Germany	Poster - Phenotypic variation for functional characteristics of some fibre flax cultivars:- M. Praczyk, G. Silska, INF, Poznan, Poland
	Poster - Flax cultivars resistant to fusarium wilt from the collection of the Institute Of Natural Fibres:- A. Andruszewska, M. Byczynska, INF, Poznan, Poland	Poster - New self-propelled harvester for fibrous hemp:- R. Kaniewski, A. Kubacki, INF, Poznan, Poland
	Poster - Trends in flax and linseed varieties development in the Czech Republic:- Pavelek, M; Tejklová, E	Poster - Enhancing beauty of Rajasthai prints (Sanganer And Bagru) with different techniques:- Surana N.* and Sharma R.
16:00	1 Bus will return to the Holiday Inn from the conference venue	
17:45	2 buses to depart from the Tsitsikamma Conference Centre, travel via the Holiday Inn to the CSIR, Gomery Ave, Summerstrand	
18:00	CSIR Site Visit & Light Supper, Dress Casual	
20:30	2 buses return to the Holiday Inn traveling via the Tsitsikamma Conference Centre	

Conference Programme
Day 3
Wednesday 26 October 2005

08:00	1 Bus will depart from the Holiday Inn and travel to the Tsitsikamma Conference Centre	
Time	Venue 1	Venue 2
	Plenary Session, Chairperson:	

08:30 - 08:50	Textiles for Performance, Samir Mukhopadhyay, SANS Fibres	
	Parallel Session, Economical Aspects of Textile Production Chairperson: Shekhar Sharma	Parallel Session, Applications Development Chairperson: Sabu Thomas and Samir Mukhopadhyay
08:55 - 09:15	Improved profitability through industrial upgrading of Bastfibers:- Tubach, M; Alex, R; Kohler, R; Kessler, R.	Development of hemp fibre reinforced polypropylene composite:- Rácz, I; Hargitai, H; Anandjiwala, R
09:20 - 09:40	Newest achievements in curaua processing and applications – A sustainable option to Amazonian region:- Leao, A; Sartor, S.M.; Kozlowski, R; Manys, S; Appeltauer, J; Janosik, S; Maixner, V; Cizmark, L	Fibrillation of natural fibres - Increasing the specific surface for high performance composites :- Nebel, K; Kohler, R;
09:45 - 10:05	HEMP SYS: Design, development and up-scaling of a sustainable production system for hemp textiles: an integrated quality systems approach. How to affect hemp fibre quality?:- Amaducci, S; Müssig, J	Biodegradable/compostable composites from ligno-cellulosic fibers:- Kamath, M.G. ; Bhat, G; Mueller, D; Parikh, D.V.
10:05 - 10:25	Refreshment Break	
10:30 - 10:50		Surface modification of polyester fibers:-Wiener, J
	Parallel Session, Clothing Comfort & Health Aspects of Textiles Chairperson: Pinkie Zwane	
10:55 - 11:15	High Performance in sewing – Guaranteeing seam quality through control of sewing dynamics:- Carvalho, M.A.F.; Ferreira,F.B.N.	Biodegradable wipes made by hydroentanglement bonding technique:- Soukupova, V; Boguslavsky, L; Anandjiwala, R, CSIR, SA
11:20 - 11:40		Raw materials based on linseed oils for polyurethane synthesis:- R. Kozlowski ¹ , J. Pielichowski ² , A. Prociak ² , M. Marek ² , ¹ INF, Poznan, Poland, ² Technical University of Krakow, Poland
	Parallel Session, Nanotechnology in Textiles, Chairperson: Gajanan Bhat	
11:45 - 12:05	Continuous yarns from electrospun fibers – Recent developments:- Smit, E; Sanderson, R.D	Tensile properties of composites made of polyester and PALF (pine apple leaf fibre):- de O. Alexandre, M. E.; Ladchumananandasivam, R; de carvalho, L.H.; Cavalcanti, W.S.
12:10 - 12:30	Nanostructured nonwovens from water soluble polymers via electrospinning:- Thomas, H; Voigt, W; Heine, E; Möller, M	
12:30 - 13:30	Lunch Break	
13:30 - 13:50	Nano-cellulosic fibres, preparation, properties and directions of application:- B. Laszkiewicz ² , R. Kozlowski ² , P. Kulpinski ¹ , ¹ Technical University, Lodz, ² INF, Poznan, Poland	
13:55 - 14:15	Decreasing flammability of polymeric materials :- Zaikov, G.E.	
14:15	Refreshment Break - Poster Session 3 Coordinator: Vera Soukupova	
	Poster:- Research Tasks on Flax Cultivation for Sustainable Agriculture by Dr. Igor Uschapovsky	Poster:- Technological Aspects of Flax Harvesting by Dr. Michail Kovelev
	Poster:- Technological aspects of flax harvesting:- Kovalev, M.M.	Poster:- Research tasks on flax crop in conception of sustainable agriculture:- Uschapovsky I.V.
	Poster:- Bast Fibers Represents a Significant Raw Material Source for the World:- Wei, W.	Using Neuro-Fuzzy to Color Matching Belends of Pre-colored Fiber in Gray Scale : Shams-Nateri, A; Amirshahi, SH; Latifi, M.
15:15	1 Bus will return to the Holiday Inn from the conference venue	
16:00	2 buses depart from the Tsitsikamma Conference Centre and travel via the Holiday Inn to the Kragga	

	Kamma Game Park
16:00	Evening of African Entertainment, Game Drive, South African Braai at Kragga Kamma Game Park - Dress Casual (Local beer, ciders, wine and soft drinks available plus cash bar)
21:40	Return to the Tsitsikamma Conference Centre, traveling via the Holiday Inn

Conference Programme
Day 4
Thursday 27 October 2005

08:00	1 Bus will depart from the Holiday Inn traveling to the Tsitsikamma Conference Centre	
Time	Venue 1	Venue 2
	Plenary Session, Chairperson: Abisha Tembo	
08:30	Proposal Of Conversion Of The FAO/SCORENA European Cooperative Research Network On Flax And Other Bast Plants Into A Platform For Natural Fibres:- Kozlowski, R; Mackiewicz-Talarczyk, M	
09:45 - 10:00	Closing of the Conference, Dr Ryszard Kozlowski and Dr Rajesh Anandjiwala, Conference Co-coordinators	
10:00 - 10:25	Refreshment Break	
10:30	<p style="text-align: center;">2 hour Site Visit to Coega</p> <p>The Coega Industrial Development Zone (IDZ) is South Africa's premier location for new industrial investments. Located within the Nelson Mandela Metropolitan Municipality, the initiative is a multi-billion dollar industrial development complex covering 28 000 acres (11 500 hectares) and includes a deepwater Port.</p>	

Proposal of event with the Network involvement in 2006

Dr. Ing. Gustavo Cobreiro Suárez - the rector of Instituto Superior Politécnico José Antonio Echeverría in Havana proposed (in November 2004, during the personal meeting of the University Dean with the Network Coordinator), to co-organize and host the next Network - conference devoted to breeding, production and the novel applications of bast fibrous and lignocellulosic raw material with a special focus on tropical plants, e.g. henequen (*A. fourcroydes*) and transfer of technology from Europe, to be held in Cuba, Havana, in 2006.

POSSIBILITIES OF COOPERATION WITH OTHER NETWORKS AND ASSOCIATIONS ON INDUSTRIAL CROPS

1. The E-mail Forum: Information Exchange on Natural Fibres, operated by FAO's Commodities and Trade Division, contact person: Brian Moir, 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 forum, send an email to mailserv@mailserv.fao.org, leave the subject line blank, with the message: subscribe Fibres-Indy-L. Website: <http://www.fao.org/es/esc/>
2. INFORRM-IENICA – Industry Network for Renewable Resources and Materials – Interactive European Network for Industrial Crops and their Applications in the new Millennium. Coordinator: Mr. Melvyn F. Askew, Defra, Central Science Laboratory at York, SAND HUTTON, YORK, UK Y041 1LZ, tel. 44-1904-462309; fax: 44-1904-462029, E-mail: m.askew@csl.gov.uk, For more data see www.ienica.net and www.industrialcrops.eu.com.
3. Flax Council of Canada; The Council is based in Winnipeg, with Mr. M. Barry Hall as President. The previous president Mr. Donald H. Frith 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, Nonwoven 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.occ.ab.ca
10. Agrofibre Network, Finland, contact person: Antti Pasila, University of Helsinki, e-mail: antti.pasila@helsinki.fi

GRiCI (Research Group on Industrial Crops) headed by Prof. Dr. Gianpietro Venturi, Full Professor of Agronomy and Crop Science, Department of Agroenvironmental Science and Technologies (DiSTA), University of Bologna – ITALY, Ph: +39 051 2096652, Fax: +39 051 209 6241

GRiCI is a group within the Department of Agroenvironmental Science and Technology (DiSTA) dedicated to the research on industrial crops, both food and non-food ones. Its activities cover sugar crops like sugar beet; fibre crops like hemp, kenaf and fibre sorghum; oilseed crops like sunflower, soybean and many Brassicaceae; annual and pluriennial energy crops like sorghum, maize, Miscanthus, giant reed, switchgrass and cardoon; crops for colorants and dyes; crops for sweeteners; biocide and aromatic plants.

For all the crops the aim is to evaluate the adaptability of new genotypes and to define a sustainable crop husbandry as related to different end uses.

More specifically, the effects of environmental and of growth factors are assessed in terms of physiological response, plant features, crop yield and quality, and environmental impact.

The whole chain is taken under investigation as for sustainability studies, from the agricultural phase through subsequent transformations, to the end use.

Current research activities involve 4 European projects and 9 national or local ones, with public and private financing (see "research activities").

The skills of the group members have grown thanks to a long experience, often in close contact with the operative world, playing important roles in the proposal of new ideas, such as the introduction of sugar beet monogerm seeds and of the soybean crop in Italy.

Several national and international projects have been/are being coordinated by group members, such as PRiSCA, The Oilseed crops Project and its Soybean Subproject for the Italian Ministry of Agriculture; CITECA and ABSOV for the Italian National Council of Researches (CNR), others. Website: <<http://www.dista.agrsci.unibo.it/grici/>>



SPECIAL STUDIES, NEWS, FORUM OF THE DISCUSSION

Upgrading Flax Stagnant Ancestral Knowledge.

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IN THE NAME OF GOD THE CLEMENT, THE MERCIFUL ABSTRACT

Inconsistency of specifications, irregularity of textile characteristics, recurrent scarcity of convenient qualities, added to exorbitant price levels drove to the decline of demand for textile flax fibers. The unanimous belief that these drawbacks were related to the nature of flax fibers did not encourage remedial attempts to positive beneficial results.

However, recent applications of a new vegetal fibers' extraction method succeeded to constantly obtain flax fibers in a pure form, completely liberated from all other plant's tissues. Amazingly, the produced fibers had consistent excellent homogeneous textile characteristics, mainly thickness, strength and suppleness. The ancestral belief that the heterogeneous characteristics of flax fibers were due to their nature was practically refuted as unfounded. Flax stagnant ancestral knowledge has been revised, amended and updated, accordingly.

Introduction.

The biggest and most influential consumers of flax fibers, paying the highest prices sustaining the whole fiber-flax existence, have been and would still be the SPINNERS. But, since the seventies of last century, more than 75 % of flax spinning mills, reduced their production rate or closed down or shifted to other “problem-free” textile raw materials, more-homogeneous, easier-to-spin and cheaper-in-prices, to the detriment of fiber-flax existence.

The perpetual INCONSISTENCY of flax fibers’ specifications and the recurrent SCARCITY of the desired qualities are at the basis of this drastic unfortunate situation, generating all the problems and causing uncompetitive price levels of fibers and resulting yarns and fabrics.

The NATURE of flax was unanimously blamed for this inconsistency of quality, which conducted to desperation and submission to fate, which did not encourage any attempt aiming at practical effective salvation.

However, recent applications of a new more-controllable method of vegetal fibers’ extraction (using Osmotic Pressure instead of Bacteria or Molds and Fungi), succeeded to constantly obtain “PURE” flax filaments with homogeneous, favorable textile characteristics. This amazing TRANSFIGURATION of flax fibers practically REFUTED the ancestral established BELIEF, that inconsistency and heterogeneity of these characteristics were due to their own nature, and proved that this belief was unfounded. This new situation necessitated prompt action, through new approaches, to establish the truth about flax fibers’ natural POTENTIAL characteristics.

Becoming partly doubtful, EXISTING data about flax had to be carefully revised, amended whenever needed, according to recent confirmed innovations, for the benefit of updating scientific flax data, to serve as a sound basis for future studies, aiming at redressing and consolidate the most unfortunate present situation of flax fibers, by improving their reputation as favorable textile raw materials, unjustly condemned.

Thanks to the assessment, evaluation and acknowledgement of THE new more EFFICIENT method of vegetal fibers’ extraction, it’s SUCCESSFUL implementation and the resulting constant production of PURE Single Flax Filaments having excellent consistent favorable textile characteristics, flax fibers are to be considered, from now on, having potentially natural consistent favorable textile characteristics, with homogeneous fineness, strength and suppleness, suitable for the production of all kinds of yarns up-to the finest possible, according to the variety.

Adequate and efficient processing SHOULD disclose these potential benefits. Discrepancies, appearing in the actual fibers produced, are really caused by DEFECTIVE fibers’ extraction operations, producing irregularly CONGLOMERATED fibrous units incompletely separated from the other plant’s tissues, which hinder the appearance of the excellent NATURAL characteristics of the fibers.

UPDATED FLAX DATA

Cultivation

Providing there is sufficient nutritive elements and water, the plant *LINUM USITATISSIMUM*, under favorable weather conditions, would grow normally until completing successfully its whole cycle of life. The entire cycle of life of the plant is composed of two main phases as follows:

The first phase is a fundamental VEGETATIVE growth, starting with germination of the seeds, followed by implantation of roots, erection of upright stems (containing fibers) and shooting out of leaves, to form the necessary NUTRITIVE SYSTEM of the plant. This nutritive system is mandatory needed for the plant’s growth during each of the two phases.

This First phase needs a moderately COOL weather (around 22 degrees Celsius), for a minimum period of four weeks, and would last as long as this favorable weather predominates.

For the production of long flax filaments, required for the production of Line flax yarns, stems should have a minimum of 70 centimeters length (before branching). This is attained by a successful vegetative growth for a period of about 12 favorable weeks.

The Second Phase is a concluding REPRODUCTIVE growth, comprising two dependent periods:

a) A preparatory period, beginning by building up secondary branches, to bear flowers, appearing in the early morning, being self-pollinated within few hours to give birth to seeds growing inside capsules.

This period needs a comparatively WARM weather (about 26 degrees Celsius), to initiate a chain reaction beginning by a consecutive flowering and pollination, followed by the formation of capsules containing seeds and would last as long as the warm weather persists.

b) A finishing period leading to the development, maturation of already formed seeds, and maximization of their oil content.

This period needs a HOT weather (over 30 degrees Celsius), for not less than six weeks, after the formation of each capsule, to subsequently reach full maturity of the seeds they contain.

In case of long flowering periods and persisting very hot weather, first-formed capsules would over-dry and be exposed to crack, letting the seeds fall down, while later-formed capsules will still be in maturation. This mishap has to be taken in consideration in determining the best date of harvesting which would maximize the amount of seeds obtained. Generally, only the capsules formed during two consecutive weeks are guaranteed collectable unbroken. If, at that time, the weather is cooler at night, an additive previous-week’s capsules could hopefully be added to the chosen two weeks, which would increase the seeds’ crop.

FLAX CROPS

Flax crops depend greatly on the suitability of the prevailing weather conditions during each of the two phases of the plant's actual lifetime. Normally, the Vegetative growth would give straw containing fibers and the Reproductive growth would give seeds containing oil, according to the following circumstances:

CASE ONE: Under, consecutively favorable weather conditions, during the time needed for the two phases of flax natural life (as the case of "Egypt's" flax cultivation), the plant would successfully complete its normal cycle of life and would, conclusively, produce a substantial dual-crop, composed of both: Straw (containing Fibers) and Seeds (containing Oil).

The actual QUALITY of the resulting fibers and oils would evidently and steadily be equal to their full potential natural consistent characteristics, according to the variety. Noting that the quality of the fibers is NOT, in any way, affected by the amount of seeds produced and the quality of the oil is NOT affected by the amount of fibers produced.

The QUANTITY of straw, containing fibers and the QUANTITY of seeds containing oil are governed by the variety, the time during which the favorable weather persisted and the density of the plants' population in the field, determining the thickness of the stems. The thinner the stems, the higher the fibers' yield and the lower the seeds' yield and vice versa.

CASE TWO: In case, the weather conditions are quite favorable for a prolonged Vegetative phase, but not fully favorable for the reproductive phase (as the case of "Northern Europe's" flax cultivation), the plant would give a main substantial crop of fibers, as a result of a sufficient successful Vegetative growth, but would give, a minimal quantity of incompletely matured seeds, as a result of insufficient favorable weather during the reproductive phase.

CASE THREE: In case, the weather conditions are quite favorable for the minimum required Vegetative growth phase, but sufficiently favorable for a Reproductive phase (as the case of "India's" and "Canada's" flax cultivations), the plant would give a main substantial crop of seeds (containing oil), with a mediocre crop of short straw (containing fibers).

In above-mentioned cases, all produced straws and completely matured seeds, would normally contain respectively fibers and oils having, as regards qualities, their full potential natural characteristics. As regards quantities, the yields would differ according to the different circumstances and varieties.

FLAX FIBERS

Inside the plant, flax fibers are in "FILAMENT" form of different lengths. Each filament is composed of a number of single pointed-ends' fiber-cells evenly joined length-wise, so that each cell under-lays 50 % of the preceding one and overlaps 50 % of the following one, tightly tied together all along, to form single filaments of same regular fine thickness, but of different lengths. A set of ten single filaments is serving each leaf of the plant, running downward to the root-end of the stem. These ten-some filaments have different lengths equal, in each case, to the distance from every leaf to the root-end. They are NOT tied together, but only grouped in bundles, regularly distributed circularly around a sustaining central wooden-cylinder, and completely embedded into a holding tissue, which fills the whole inner space between the wooden cylinder and the outer skin.

SINGLE flax filaments have naturally consistent excellent FINE textile characteristics most favorable for the successful production of regular finer yarns.

To be available for use, single flax filaments have to be smoothly extracted from the plant's other surrounding tissues, without affecting their OWN potential favorable natural characteristics. Unfortunately, conventional fibers' extraction methods, commonly used did not produce currently single filaments but generally produced conglomerated ones, composed of random numbers of un-separated filaments irregularly sticking to different parts of the plant's tissues, mainly the outer-skin. These conglomerated filaments, being composed of variable numbers of filaments sticking to different parts of other plant's tissues, generally had inconsistent textile characteristics, and usually appeared unevenly thicker than needed, with insufficient strength and poor suppleness, and were actually unsuitable for easy or fine spinning.

Morphologically, fibers, wooden cylinder and outer skin are made-up of Static cells. Differently, the holding tissue is made-up of Dynamic cells, having semi-permeable membranes.

In contact with WATER, Static cells (forming the wooden cylinder, the fibers and the outer skin) are NOT affected, apart from being wet, up to saturation. Under same condition, Dynamic cells (forming the holding tissue) are DEEPLY affected, up to causing their own complete DESTRUCTION. These different reactions of the fibers' cells and the holding tissue's cells, when in contact with water, led to the discovery of a NEW vegetal fibers' extraction method, using Osmotic Pressure generated inside Dynamic cells, to destroy the whole holding tissue's cells, and thus, the filaments are smoothly and completely liberated, without affecting their favorable textile characteristics.

Natural Characteristics of Flax Filaments

The potential characteristics of flax filaments are established by Nature according to the prospective functions of these filaments, to serve the plant during its normal life. These natural characteristics may differ partly or completely from the actual characteristics of flax fibers produced, according to the efficiency and success of the fibers extraction operations.

The initial functions of the filaments inside the plant are:

1. Acting as a STABILIZING system, to flexibly maintain the plant's stem in the up-right position and make it retrieve this position, in case of deviations caused by outside surrounding conditions or winds.

To fulfill these functions successfully the filaments should necessarily have:

- * FLEXIBILITY and Freedom of individual movements (completely detached to allow sliding on each other).
- * Sufficient STRENGTH to counteract surrounding circumstantial moving forces.
- * Sufficient NUMBER of individual filaments to encircle evenly and completely the supporting central wooden cylinder.

* Excessive FINENESS to enable the numerous filaments to lodge in the tiny space available inside the plant.

2. Acting as fast transportation DUCTS, momentary RESERVES and quick multi-delivery POSTS, for the nutritive SAP already prepared in each leaf, keeping it easily available for the adjacent plant's cells to take.

To fulfill these functions successfully the filaments should necessarily:

* Have a high capacity of ABSORBENCY, to be able to quickly absorb and momentarily keep the nutritive sap, to be gradually taken by the different plant's cells.

* Be as NUMEROUS as possible, to maximize the absorbing, reserving and distribution surfaces.

* Be excessively FINE, to fit in the limited tiny space available inside the plant.

* Have different LENGTHS for the ten-some filaments, to go from each leaf, according to its level, downward to the root-end.

* Have the same lengths for the single filaments, forming each ten-some filament

Cross sections of the flax stems, done at the root-end and below all the leaves, would show all the filaments inside the plant, other higher up cross sections would show a lesser number of filaments, according to the number of leaves situated over the level of the cross sections made. The ten-some filaments of the leaves, below the level of the cross section made, would not appear. The least number of ten-some filaments would appear at the cross section near the top crop-end.

These logically deduced Characteristics have been in fact CONFIRMED by actual repeated production of constant pure single flax filaments having tangibly the same deduced characteristics, as follows:

1. Homogeneous except for lengths of different ten-some filaments.

2. Individually fully separated.

3. Excessively thin: Thickness not more than 24 microns.

4. Strong: Tenacity: not less than 60 grams per TEX.

5. High Suppleness.

6. Having a high hygroscopic capacity and can retain up to 12 % humidity

7. Number of 10-some filaments = Number of leaves.

8. Number of single filaments = Number of leaves X 10.

EFFICIENT EXTRACTION OF VEGETAL FIBERS

Though the plant "LINUM USITATISSIMUM" contains NATURALLY superb fine fibers, having POTENTIALLY all the hoped-for excellent textile characteristics, the conventional methods of vegetal fibers' extraction, using Bacteria, in Water-retting or Molds and Fungi, in Dew-retting, could NOT for centuries, GUARANTEE the constant production of pure favorable single flax filaments, disclosing all their potential homogeneous excellent textile characteristics. Favorable single filaments appeared ONLY occasionally and in small quantities, mixed with other conglomerated heterogeneous ones of lower qualities. This is why these conventional methods did NOT sustain flax fibers in their recurrent critical situations, allowing other textile raw materials to replace flax fibers in spinning.

To remedy to these imperfections and guarantee the CONSTANT production of the most desired high quality flax single filaments, the newly discovered WATER treatment, using OSMOTIC PRESSURE, is recommended to replace efficiently conventional Bacteria Water-retting.

To greatly improve the unstable and unsatisfactory results of the flax Dew-retting, it is recommended to do the following changes:

Instead of being spread FLAT on the soil of the field, the straw has to be gathered and TIED into BEETS, then, arranged in an upright standing position, close together in big lots.

By this means, when rains come, the falling raindrops would go down, by gravity, repeatedly through the cavities between the upright-stems to the inside of the straw of the closely packed beets, water surface tension would guarantee a slow regular down flow leading to full impregnation of all the stems uniformly and at the same time. The benefits of this improved DEW-retting, when experimented, were found to be as follows:

* Wetting the whole batch of flax straw EVENLY and at the SAME time.

* Keeping EVENLY the humidity, inside the whole batch of straw, for a longer effective continuous time

* Preventing FAST DRYNESS, through evaporation during windy or warmer periods.

* Regularizing the course of the treatment to the benefit of homogeneity.

* Minimizing the time of occupancy of the fields.

* Maximizing capability of improving the textile characteristics of the resulting fibers.

Before trying to extract flax fibers, it is important to be aware that these fibers are in form of 10-some filaments of different lengths, grouped in bundles composed of various numbers of these filaments, and completely surrounded by a holding tissue, tying them to the inner wooden cylinder on one side and to the outer-skin on the other side. During the extraction operation, the separation begins from the inside and goes toward the outside in consecutive stages:

Stage one, liberating the 10-some filaments from the wooden cylinder.

Stage two, liberating the 10-some filaments from the outer-skin.

Stage three, liberating the 10-some filaments into single ones.

Stage four, decomposing the single filaments into their components: single short fiber cells.

If the process were stopped after the completion of the first stage, the fibers obtained would be in long heterogeneous bundles in ribbon form of various irregular width, high apparent strength, uneven thickness and lacking divisibility and flexibility.

If the process were stopped after the completion of the second stage, the filaments obtained would be in long regular TEN-SOME filaments of homogeneous fine thickness, good strength and good suppleness, but of different lengths.

If the process were stopped after the completion of the third stage, the filaments obtained would be in long regular SINGLE filaments form of homogeneous finest thickness, best strength and highest suppleness, but of different lengths.

If the process goes to the completion of fourth stage, the fibers obtained would be in homogeneous ONE-CELL short cottonized flax fibrous units (similar to cotton), excessively fine, strong and supple. In this new form the fibers would need a quite different technology to deal with them, as the present technology has been constructed to deal with long filaments.

Flax fibers extraction GENERATES the actual specifications of the resulting fibrous units, according to the stage attained in the process. Furthermore the course of the separation does not go at the same rate in the straw of different characteristics, according to variety, thickness, maturity, etc... This is why it needs much care, patience and a lot of experience,

COTTONIZED FLAX FIBERS

To remedy to the textile disadvantage of the different lengths of the produced flax fibrous units, many attempts have been made. The most known is the one used in the preparation stage before spinning flax raw materials, it consists of several repeated drawing and doubling of the slivers, aiming at regularizing the different lengths of the filaments in these slivers, through gradually and systematically reducing the pulling distance, to cut out the surplus lengths in every step. Recently, this has been tried by directly cutting slivers made up of the different irregular filaments, to the required uniform length (Cottonization), but the results obtained have not been quite satisfactory, owing to the fact that the obtained regular lengths of the cut-slivers were formed of a mixture of whole cells and partly-cut damaged ones, which affected negatively the strength of the produced material and increased the spinning wastes.

Genuine more useful cottonized flax could be successfully obtained by any means capable of disassembling smoothly the fibrous cells forming the filaments, without affecting their ENTITIES. Only then, the resulting material would be most similar to Cotton fibers and could be used as such, for blending in any percentage and for being spun on cotton spinning machinery without major problems.

CLASSIFICATION OF FLAX FIBROUS UNITS

Classification of flax fibrous units has always been a very complex and difficult job. For centuries, it remained localized, entirely depending on long personal specific human experiences and never succeeded to be Universal. The insurmountable obstacle was the lack of homogeneity and the inconsistency of the textile characteristics of the flax fibrous units, commonly produced. These defects also hindered the conception of specific flax fibers' effective testing machines, to facilitate impartial scientific evaluation of flax textile fibrous units

Thanks to the recent improvement of the method of vegetal fibers' extraction, allowing the constant production of pure single flax filaments with consistent homogeneous textile characteristics, CLASSIFICATION became quite possible with these new textile regular fibrous units. For the first time, a UNIVERSAL grading of flax filaments is now within reach, to serve many purposes and minimize the chances of disputatious dissensions in national and international transactions and make it easier, for the spinners to satisfactorily pick, for the production of any specific yarn, the most suitable textile flax raw material offered.

The practical and most useful flax filaments classification should be based on two groups of characteristics:

1. The first group would comprise the ESSENTIAL and DECISIVE specifications necessary to establish the basic suitability of the material for the production of prospected specific yarns; this group would comprise the following fibrous units specifications:

THICKNESS not to exceed ONE FIFTH or ONE SIXTH the thickness of the prospected yarn, according to the required strength.

STRENGTH not less than 60 grams (or else, according to the specific use of the prospected yarn) per TEX.

High SUPPLENESS.

LENGTH (for filaments in HANDFULS form) not less than 65 and not more than 80 centimeters, to be suitable for existing hackling machines and could be prepared on long flax drawing frames.

LENGTH (for filaments in TOW form) not less than 35 centimeters, to be suitable for CARDING and could be prepared on tow drawing frames.

CLEANLINESS: not less than 99 %, free of sticking shives and foreign matters.

HUMIDITY: not to exceed 12 % and not less than 8 %.

2. The second group comprises specifications affecting the value (price) of the flax textile raw material as: General aspect, Color, Odor, Density (Weight), Etc.

FLAX YARNS AND LINEN FABRICS

To be useful and have a high economical value, a yarn must technically be regular and have a relative minimum tenacity. This is attained when the yarn is theoretically, made up evenly of three over lapping layers of homogeneous fibrous units, given the convenient sufficient twist to maximize the friction between the units. The theoretical number of fibrous units necessary to form the demanded yarn should then be either 27 units, in case the structure is two layers around one central core unit or 37 units, in case the structure is two layers around three central core units. In the first case, the diameter (thickness) of the most suitable textile fibrous units should not exceed ONE FIFTH the diameter of the prospected yarn, and ONE SIXTH in the second case.

A cross section of a yarn would clearly show, according to the structure of the fibrous units, that the full diameter of the yarn is made up of five or six fragment diameters of the fibrous units forming the three required fundamental layers.

Conventional flax yarns have never been of regular thickness, as being made up of heterogeneous conglomerated textile fibrous units, causing random thicker parts and thinner ones. Fabrics, made up with these irregular yarns, were always of heterogeneous irregular texture, but amazingly have always been accepted as such, even favored for this natural characteristic specialty.

Linen fabrics, made up with the new PURE single filaments would be differently of regular homogeneous texture, much more supple, without the known particular rigidity of flax, causing the high tendency to wrinkle easily and necessitating frequent tiresome and expensive ironing.

PROCESSING MACHINERY

The present MACHINERY used for breaking the treated flax straw and for cleaning the fibers would need alteration, so as not to damage the new homogeneous finer fibrous units resulting from the flax straw being treated by the newly improved fibers' extraction method producing high quality DELICATE flax filaments. The main alterations would be based on lessening the breaking force and the scutching time and efforts to suit the new FINER material processed. Attempts to solve these problems are in course.

CONCLUSION

The recent discovery of a more efficient method of VEGETAL fibers extraction, when used on flax, disclosed clearly the most important following facts:

During the complete cycle of its life, the plant (*Linum Usitatissimum*) normally produces FIBERS, during its Vegetative Growth and produces OILY SEEDS, during its Productive Growth.

As regards QUALITY, the produced fibers and oily seeds have POTENTIALLY their fixed specific natural characteristics inherent to the variety. This quality (textile characteristics) exists potentially in all fibers contained in the straw of the plant whatever it is planted for fibers or for seeds or for dual purpose, differences would be in the yields of these fibers only.

The excellent natural textile characteristics of the fibers are not affected by the amount of the oily seeds produced and vice versa.

As regards QUANTITY, the amount of straw containing fibers and the amount of seeds containing oil are determined by the Variety, the time the favorable weather conditions prevailed and the thickness of the stems.

The thick nesses of the stems are governed by the actual density of the plants in the field (population): the higher the density the thinner the stems and vice versa.

The thinner the stems the higher the yield of fibers and the lower the yield of oily seeds and vice versa

The thinner the straw, the shorter the time needed for the successful extraction of the fibers and vice versa.

Under most favorable weather conditions for a complete successful cycle of flax life, (as Northern Egypt's cultivation,) the ideal DENSITY, for producing a substantial best quality dual crop, is 2500 plants per square meter, producing one millimeter stem thickness, without risk of lodging.

The NEW fibers' extraction method guarantees the constant production of pure VEGETAL fibers, disclosing all their FAVORABLE consistent potential natural textile characteristics, when the conventional methods failed to obtain the same results. The fibers produced are suitable for the SUCCESSFUL production of the finest yarns cotemporary possible.

Flax fibers are reliable textile raw materials, provided they have efficiently been extracted from the plants' other surrounding tissues.

The existing processing machines have to be altered to suit the new specifications of the new water-treated straw and the finer more delicate fibers produced.

Flax Spinners should renew their faith in flax fibers and encourage the producers wherever they are to make the change in the way fibers are extracted and adopt the new OSMOTIC PRESSURE method to guarantee the production of flax fibers having all the hoped-for textile characteristics. Furthermore, this would help much to REVIVE flax cultivation, its processing and reliable textile raw material production, all over the countries where flax cultivation would find the needed favorable conditions for full success. Flax fibers users would thus have, at all times, so many good sources of excellent textile raw material to choose from, and prevent harmful scarcity of the material and occasional excessive high.

News from the Institute of Natural Fibres, Poznan, Poland

1. Involvement of the Institute of Natural Fibres in the EU projects.

MULTIFUNCTIONAL BARRIERS FOR FLEXIBLE STRUCTURES (TEXTILE, LEATHER, PAPER)

Acronim: FLEXIFUNBAR

Contract nr 505864 (NMP2-CT-2004-505864) **Integrated Project**

Coordinator: DUFLOT INDUSTRIE S.A. – Caudry, France

The period of realization: 10.2004 – 09.2008

Countries participating: Belgium, Finland, France, Germany, Great Britain, Greece, Ireland, Italy, Poland, Portugal, Spain, Sweden.

Partners: 50

FLEXIFUNBAR is an integrated project directed at small and medium enterprises.

The objective of FLEXIFUNBAR is to develop and promote flexible structures for use in many multi-sectorial industrial applications in the health sector as well as in the building construction and transportation industries.

The general aim of the project is initiating the development of new generation of flexible structures, which would be able to guarantee the effect of barriers towards the large range of hazards from the environmental conditions, aiming at better care of human health, well-being and comfort.

The innovation of Flexifunbar lies in the principle of associating in the same material several functionalities:

The flexible structures, generally based on paper, leather or textile are usually treated to serve only one barrier effect.

Nevertheless, the will to maximize the level of safety in building, transportation and to ensure the well-being of European citizens, requires a whole re-design of flexible structure functions what is the main purpose of FLEXIFUNBAR.

It is predicted, that the flexible structures would provide at least three barrier effects against unfavourable conditions and risky atmosphere.

Some examples of barrier effects are the following: the fire protection, biological protection of the organisms, protection against electro-magnetic radiation, control of the electrostatic phenomena, filtration etc.

The care about environment protection would be combined with the interest in natural materials while introducing the novel, composed (complex) substances and materials.

The innovation of Flexifunbar lies in the principle of associating in the same material several functionalities:

The institutions that will promote his new directions through application of natural fibres towards multifunctionalisation of barrier effect are: Pasteur Institute, Linificio, Procotex, Ecco, Tretex and the Institute of Natural Fibres.

The co-operation between 50 partners, participating in this project, is conducted within 13 thematic groups. The Institute of Natural Fibres takes active part in 3 of them.

Professor Dr. Ryszard Kozłowski, Director of the Institute of Natural Fibres acts as co-chairman of the group, involved in the modification of natural raw materials.

Moreover, he is the member of the Scientific Committee, which role is to take care about the scientific progress in the scope of FLEXIFUNBAR project.

2. Dyeing process based on dyes from plants

The Institute of Natural Fibres is one of few research institutions in Poland who are interested in applying natural dyes development an optimized dyeing process based on dyes from plants.

For the last eight years the research program on natural dyestuffs has been carried out in the Institute of Natural Fibres in Poznan. The research has been based on historical sources and laboratory trials. Approximately 50 dyestuffs of plant origin were tested in this period for possible application in natural raw materials. The project is carried out by Studio Natural Art INF in cooperation with herbal companies. In 2003 the Experimental Farm of the Institute of Natural Fibres started a plantation of dyeing plants. The dyeing garden is supposed to be the center of experiments and training programs both presenting traditional methods of dyeing and promoting creation of totally natural fabrics.

Dye identification can provide information on where and how historic and archaeological textiles were made. This information, together with data from trade archives and the design and textile knowledge may determine its provenance, authenticity as well as original faded colour. One of the main subjects of the program Studio Natural is creation of colour cart for natural fibres, introduction of cultivated plants for dyeing and promotion of our result in modern textile design. The re-interest in natural dyestuffs is triggered by the fashion for noble raw materials, which are much closer to human being and to environment as well.

Since 1993, the Studio of Natural Art at the Institute of Natural Fibres in Poznan, have promoting flax, hemp, silk and wool. "Natural fibres have accompanied man for centuries, offering warmth and survival. They have provided clothing and protection from the outside world and have been a challenge to our imagination".

Using the natural materials of the organic world: flax, hemp, silk and wool the designers from the Studio creates original compositions with interesting colours, textures and forms. Weaving and painting on silk have been the area of their search for an inimitable weave, colour nuance or spatial interrelations.

Drawing on classical weaving techniques she develops and challenges traditional artistic canons. Designer has studied the structure of the material carefully and seeks to bring out its natural beauty.

Careful about the precision of her workmanship, yet relying on her intuition and imagination she feels free to emphasise the appeal of the fibre and its creative possibilities. The combination of weaving architecture is a source of creative solutions for the artist in which the interior and the tapestry constitute a whole.

Abstract, linear compositions with vibrant pastel colours lend a spatial character to her work. Spatial illusion is enhanced by her sculptural approach to the formation of the tapestry surface and reliefs.

Her painting on silk is interesting both in respect of colour and form.

The artists creates subtle, delicate, airy spaces, frequently in various tones of blue, handling the material with intuition and sensivity.

Colour play an important role for artists and designers. In recent years we have observed visible come back of the **interest in** natural raw - materials and techniques which had been often completely forgotten.

The aim of our program is creation of colour cart for natural fibres, introduction of cultivated plants for dyeing and promotion of our result in modern textile design.

The main aim of the research was to reactivate old and often forgotten dyeing methods, testing of dyes for their durability to weather factors, testing of their efficiency on the one hand and to develop our own dyeing technique and its application to the natural fabrics on the other.

The natural dyestuffs are not superior to the synthetic ones, they are often economically not viable, difficult to obtain, however they are very attractive for the quality of noble shades.

The re-interest in natural dyestuffs is triggered by the fashion for noble raw materials, which are much closer to human being and to environment as well.

Emphasizing of the obvious qualities of linen, hemp wool and silk clothes by using exclusive natural dyes is the best promotion for those textile raw materials.

Some other topics:

- Remediation of the lands polluted by the industries through the cultivation of bast fibrous plants and obtaining the methanol from such plants (and from other non-food crops), as well as energetic utilization of bast plants,
- Utilization of by-product plant fats for the production of bio-diesel and heating oil
- Utilization of dusts from energy industry for soil improvement (in connection with lake bottom mud),
- Explosion protection (against dusts) in several industries

3. The attempt to produce the pulp and paper mass from hemp fibre

At the moment the production of domestic chemical paper pulp and also the production of paper is based mainly on logged spruce-pine pulpwood. Having in regard the growing ecological consciousness of the society, manifested by environment protection, as well as forest protection, an alternative to wood utilization should be created. Such alternative could be the use of domestic fibre crops, especially hemp, which yields 10 t/ha of straw, and ca 2,5 t/ha of fibre. The hemp fibre contains about 75 % of cellulose. Its dimension, especially the length above 15 mm, as well as the chemical composition confirmed high usefulness hemp fibres as a raw material for the production of long fibre cellulose mass for production of high quality papers. The long fibre cellulose mass, produced from hemp fibres, are characterized by high mechanical endurance, resistance to tearing and bending, high elasticity, and porosity. The INF conducts the research in that scope, especially in production of decorticated hemp fibre, with properties appropriate for long fibre cellulose mass.

SOURCES OF INFORMATION

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

- a. http://www.fao.org/world/Regional/REU/Content/Escorena/index_en.htm [Website of ESCORENA , FAO – Regional Office for Europe]
- b. <http://www.inf.poznan.pl> [Institute of Natural Fibres, Poznan, Poland]
- c. <http://www.csl.gov.uk/ienica>, <http://www.ienica.net> [IENICA – Interactive European Network for Industrial Crops and their Applications in the Changing Millennium]
- d. <http://www.vtt.fi/bel/cost847/> — COST ACTION 847 “Textile Quality and Biotechnology”

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)

A new FAO Statistical Bulletin on Jute, Kenaf, Sisal, Abaca, Coir and Allied Fibres has just been released and it is on FAO website at: http://www.fao.org/es/esc/en/20953/21005/21524/highlight_28807en.html

www.agrofibrecomposites.com - Agrotechnology and Food Innovations website on natural fibre composites

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 (more pieces of information see COST Action 847 news in some previous issues of the bulletin).
- *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 funded 3-b project, started in April 2001.

The EC/Brussels merged two independently submitted *INFORM* and *IENICA* projects to act jointly and in close cooperation (*within Concerted Actions*).

IENICA is the Interactive European Network for Industrial Crops and their Applications in the Changing Millennium. Coordinator: Mr. Melvyn F. Askew, Defra, Central Science Laboratory at York, SAND HUTTON, YORK, UK Y041 1LZ, tel.: 44-1904-462309; fax: 44-1904-462029, e-mail: m.askew@csl.gov.uk, <http://www.ienica.net>). It is a 3-year project, which is the first market-driven overview of the prospects for alternative crops and the industrial crop situation in Europe. There are 26 member countries involved in *IENICA*, throughout Europe and its accessing and associated states. It contributes to accessing and discovering the fascinating potential Europe has at its disposal in creating more sustainable industrial growth for future generations. The *IENICA* project is now coming to a close, and all work carried out by the project can be found on the website – www.ienica.net. It is highly recommended to study the content of the web page of the project, which contain a very large set of information such as: Background info, *IENICA*: Partners, Reports, Newsletters, Events, Diary, Plant Data base, Useful Data, Commercial, Policy, Enquiries (!), Biofumigants, Education.

INFORM is an Industry Network for Renewable Resources and Materials. The activities were coordinated by ACTIN in the UK (Alternative Crops Technology Interactive Network) and the project ran for two years. It was conceived to provide the first strategic information gateway to further aid data access across the RRM sector. *INFORM* was the first RRM project, to be funded by the European Commission, to provide the opportunity for a commercial-style review of the whole sector and develop a new technique to 'future proof' best practice in ICT (Information and Communication Technology).

NEWS ABOUT THE EUROPEAN PROJECTS WITH INVOLVEMENT OF NETWORK MEMBERS

COST ACTION 847 "Textile Quality and Biotechnology"

See Website: <http://www.vtt.fi/bel/cost847/> and previous issues of the bulletin.



NEWS REGARDING PUBLICATIONS ON NATURAL FIBRES

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

A publication that was probably the only one in the world, which contained scientific publications regarding natural fibres (an English-Polish version yearbook), edited by the Institute of Natural Fibres – Coordination Centre of the FAO Network. Since 2004 *Natural Fibres* is replaced by a new quarterly *Journal of Natural Fibers*.

"JOURNAL OF NATURAL FIBERS"

Journal of Natural Fibers, a quarterly edition, is published by the recognized publishing house The Haworth Press, Inc. Binghamton, NY, USA [for more details see: www.haworthpressinc.com]. **All scientists are welcome to publish relevant papers in this publication.** Contact: Prof. Dr. Ryszard Kozłowski- Editor-in-Chief, 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. For information on the contents, publication schedule, submission requirements, please check - <https://www.haworthpress.com/store/product.asp?sku=J395%20>.

The publication is advised by the international team of Honorary Editors: A.M. Allam/Egypt, A. Atanassov/Bulgaria, S. K. Batra /USA, A. Bledzki/Germany, N. Chand./India, A. Daenekindt/Belgium, D. M. El-Hariri/Egypt, H.P. Fink/Germany, L. Hes/ Czech Republic, Z. A. M. Ishak/Malaysia, Z. Izsaki/Hungary, U. Kechaiga/Greece, R. Kessler/Germany, P. Kolodziejczyk/Canada, F. H. Ko/USA, R. Kotek/USA, J. Lappage/New Zealand, M. Lewin/USA, G. Mackie/Northern Ireland, T. Matsuo/Japan, C. Morvan/France, F. Munder/Germany, K. Perepelkin/Russia, A. Pretova/Slovak Rep., D. Radhavan, A. Riva/Spain, R.M. Rowell/USA, Shen Anjing/China, D. Sorlino/Argentina, H. Tokura/Japan, G. Venturi/Italy, V.V. Zhivetin/Russia. The Polish Honorary Editors: H. Burczyk, P. Baraniecki, J. Barriga -Bedoya, R. Fiedorow, K. Heller, B. Mac, I. Maciejowska, M. Mackiewicz-Talarczyk, M. Muzyczek, A. Wlochowicz, I. Wojciechowska.

Journal of Natural Fibers (ISSN: 1544-0478), Content of Volume 1, Issue: 3 2004

1. Dihaploid production in flax by anther and ovary cultures, Bohus Obert, Zuzana Bartosova, Anna Pretova
2. Application of 2-chloroethylphosphonic acid to breeding of monoecious hemp, Lidia Grabowska, Grazyna Mankowska¹ Nikolai N. Orlov And Ludmila G. Orlova
3. A Review on Natural Fibre Based Composites Part II: Application of Natural Reinforcements in Composite Materials for Automotive Industry, D. Puglia, J. Biagiotti, J. M. Kenny
4. Sustainability and Profitability through intelligent Value Chain Management in Bastfiber Processing, R. Alex, R. Kessler, R. Kohler, G. Mayer, M. Tubach
5. Assessment, Evaluation & Acknowledgement of A New More Controllable Method for Extracting Vegetal Fibers, Anwar M. Allam.
6. The report on the International Conference of the FAO/SCORENA European Cooperative Research Network on Flax and other Bast Plants "Flax and Allied Fibre Plants for Human Welfare". National Research Centre (NRC), December 8 – 11 2003 in Cairo, Egypt, Maria Mackiewicz-Talarczyk

Journal of Natural Fibers (ISSN: 1544-0478), Content of Volume1, Issue: 4 2004

1. Partition of photosynthates and energy production in different flax cultivars, El-Hariri, D.M, Al-Kordy, M.A., Hassanein, M.S. and Ahmed, M.A.
2. Survey of Czech breeding methods, development of the new Czech flax (*Linum usitatissimum*L.) variety Venica – the way of breeding and agronomical properties of flax and linseed cultivars registered in the Czech Republic, Pavelek Martin, Tejklová Eva

3. Protection of fibre flax crop against flea beetles and seedling blight using compound seed-dresser, Z. Jankauskiene, E. Gruzdeviene, A. Endriukaitis
4. Effect of Nutrient Supply on the Quality of Linseed and Hempseed, Zoltán Izsáki and Ildiko Iványi
5. Information about the latest patents at the Institute of Natural Fibres in Poznan, Ryszard Chmielewski
6. Heavy metal polluted areas as a source of alternative raw material for pulp, Przemyslaw Baraniecki, Ryszard Kozłowski

Note: Content of Issue No 1 and 2 in the EUROFLAX No 22 and on the request.

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

EUROFLAX Newsletter

Information Bulletin *EUROFLAX Newsletter* – 23 issues since 1994 (200 printed copies, reaches subscribers and Network members in 52 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, Zemědělská 16, 787 01 Šumperk, 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
- CD Proceedings of “Bast Fibrous Plants for Healthy Life”, October 24-28, 2004, Banja Luka, Bosnia and Herzegovina, Republic of Srpska

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

- Proceedings of the Workshop of the FAO/ESCORENA Network: Mapping of European Germplasm for International Flax Data Base Creation, use in Breeding for different Flax and Linseed Varieties, September 18 – 19, 2002, Šumperk, Czech Republic
- CD Proceedings of the Conference “Flax and Allied Fibre Plants for Human Welfare”, December 8-11, 2003, NRC, Cairo, Egypt
- CD Proceedings of the Conference 11th International Conference on Renewable Resources and Plant Biotechnology NAROSSA® 2005, Institute of Natural Fibres, Poznan, Poland, June 6-7, 2005

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, tel.: (403) 507-5206, fax: (403) 507-7977, e-mail: relvestad@admin.oldscollege.ab.ca, www.occia.ab.ca
- Polish Flax and Hemp Chamber bulletin - Biuletyn Informacyjny Polskiej Izby Lnu i Konopi: “LEN I KONOPIE”, ISSN 1731-4828, Poznan, Poland, e-mail: hempflax@inf.poznan.pl (bi-annual)
- 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
- The newest issue of the Journal of Textile and Apparel, Technology and Management (JTATM), is available (<http://www.tx.ncsu.edu/jtatm>)
- Kozłowski R, Władysław-Przybylak M.: Chapter 10 Natural Polymers Wood and Lignocellulosic. – in book “ Fire Retardant Materials” ed. by Horrocks, Woodhead Publishing Limited, Cambridge, Great Britain, 1999
- Kozłowski R., Władysław-Przybylak M.: Chapter 14 Uses of Natural Fiber Reinforced Plastics in book "Natural Fibers, Plastics and Composites” ed.by F.T. Wallenberger and Norman E.Weston Kluwer Academic Publishers, Boston, Dordrecht, New York, London 2004
- Cook Gordon J.: Handbook of Textile Fibres. 5th ed. Cambridge England: Woodhead Publishing Ltd., 2001
- Schenk Anton: Naturfaser Lexikon. Frankfurt am Main: Deutscher Fachverlag, 2000
- V. V. Zhivetin, L. N. Ginzburg, O. M. Ol’sanskaja: Len i Jego Kompleksnoje ispol’zovanie (Flax and its Complex Utilization- publication in Russian). M.: Inform-Znanije, 2002. Moscow, Russia
- Daniel Nilsson: Analysis and Simulation of Systems for Delivery of Fuel Straw to District Heating Plants. ACTA UNIVERSITATIS AGRICULTURAE SUECIAE.. SWEDISH UNIVERISTY OF AGRICULTURAL SCIENCE. AGRARIA 205. doctoral thesis, Uppsala 1999
- Gennady E. Zaikov (N. M. Emanuel Institute of Biochemical Physics, Moscow, Russia), Ryszard Kozłowski (Institute of Natural Fibers, Poznan, Poland) - Editors: CHEMICAL AND PHYSICAL PROPERTIES OF POLYMERS , NOVA SCIENCE PUBLISHERS, INC., NY, USA, 2005. ISBN: 1-59454-206-6.

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
- Henryk Burczyk: Hemp Cultivated for Seeds – The Manual for Hemp Farmers (available at the Institute of Natural Fibres, Poznan, Poland)
- Mathias Broeckers: Cannabis. Hanf. Hemp. Hanvre. Cañamo. Nachtschatten Verlag, 2002, Für die Deutsch Sprachige Ausgabe. AT Verlag, Aarau, Schweiz.
- Paolo Ranalli: Advancements in Hemp Research. Haworth Press Inc., USA. 1999

INFORMATION ABOUT INTERNATIONAL CONFERENCES ON NATURAL, LIGNOCELLULOSIC FIBRES AND TEXTILES

2005

FAO/SCORENA International Conference “*Textiles for Sustainable Development*”, organized by FAO/SCORENA European Cooperative Research Network on Flax and other Bast Plants, to be hosted and co-organized by CSIR, Centre for Fibres, Textiles & Clothing Manufacturing & Materials Technology, Port Elizabeth in South Africa, October 23-27, 2005. or more details see: www.textileconference2005.co.za

Contact: TECHNICAL AND RELATED TO ABSTRACTS/PAPERS: Dr. Rajesh Anandjiwala, national Conference Co-ordinator, National Centre for Fibre, Textile and Clothing, Manufacturing and Materials, CSIR, P.O. Box 1124, Gomery Avenue Summerstrand, Port Elizabeth 6000, South Africa, Phone: ++27-41-508 3200, fax: ++27-41-583 2325 or ++27-41-508 3268, e-mail: ranandi@csir.co.za or Rajesh.Anandjiwala@upe.ac.za

Prof. Dr. Ryszard Kozłowski, Coordinator of FAO/SCORENA European Cooperative Research Network on Flax and other Bast Plants, General Director, Institute of Natural Fibres, 60-630 Poznan, Poland, Phone: +48 61 8 480-061, fax: ++48 61 841 7830, e-mail: sekretar@inf.poznan.pl

- June 7-9, 2005. *TECHTEXTIL - International Trade Fair for Technical Textiles and Nonwovens - and AVANTEX - International Innovation Forum for Innovative Apparel Textiles*, Frankfurt am Main, Germany. Contact: Messe Frankfurt GmbH Techtexstil/Avantex Team, Postfach 150210, D-60062 Frankfurt am Main, tel.: +49 69 7575-6179, -6712, -6840, fax +49 69 7575-6541, e-mail: techtexstil@messefrankfurt.com, avantex@messefrankfurt.com, Website: www.techtexstil.com, www.avantex.de
- June 27-29, 2005. *World Textile Conference AUTEX2005*, Portorož, Slovenia. Organized by University of Maribor, Faculty of Mechanical Engineering. Contact: tel.: +386 (0) 222 07 910, +386 (0) 222 20 7896, <http://autex2005.ts.uni-mb.si>
- July 13-15, 2005 *2nd International Technical Textiles Congress*, Istanbul, Turkey. Contact: Ass. Prof. Dr. Merih SARIŞIK, President of the Congress Committee, Dokuz Eylül University Engineering Faculty, Textile Engineering Department, 35100 Bornova, İzmir / TURKEY, Phone: +90 (232) 388 28 69, fax: +90 (232) 388 78 67, e-mail: tekniktestil2005@deu.edu.tr, <http://web.deu.edu.tr/ttk>
- September 7-9, 2005. *5th International Conference IN-TECH-ED, Innovation - Technics - Education in the Textile, Garment, Leather, Paper, Printing, and Packaging Industries*, Motto: ‘With competitive knowledge for the future’, Budapest, Hungary. Contact: Livia Kokas Palicska, Budapest tech, RKK, Tel.: 361 3887 400, fax: 361 3886 730, e-mail: kokas.livia@rkk.bmf.hu, <http://inteched.rkk.bmf.hu>
- September 14-17, 2005. *5th International Scientific Conference on Production Engineering RIM2005*, Bihac, Bosnia and Herzegovina, Contact: Faculty of Technical Engineering, Bihac, Dr. Irfan Ljubijankić, tel./fax: +387 37 226 273, 226 271, 226 270, e-mail: tfb@bih.net.ba, www.rim-2005.ba
- September 17-21, 2005. *International Conference on Industrial Crops and Rural Development 2005* Association for the Advancement of Industrial Crops (AAIC) Annual Meeting, Murcia, Spain. Contact: Dr. Maria Jesus Pascual-

Villalobos, tel: 34 968 366768, fax: 34 968 366792, e-mail: MJesus.Pascual@carm.es, website: www.aaic.org/2005mtg.htm

➤ September 2005, *TECHTEXTIL Rossija, International Trade Fair for Technical Textiles, Nonwovens and Protective Clothing*, Moscow, Russia, Organiser: Messe Frankfurt RUS O.O.O. For more information please contact: Messe Frankfurt RUS O.O.O, ul. Profsoyuznaya 23, 117997 Moscow, Russia, tel.: +7 095 721 1057/ -58/ -59, fax: +7 095 783 2326, Mrs. Oksana Yavorovskaya, e-mail: oxana.yavorovskaya@russia.messefrankfurt.com, Mrs. Lisa Schuertzmann, e-mail: lisa.schuertzmann@russia.messefrankfurt.com

➤ September/October 2005, *60th Anniversary of the Textile Research Institute in Lodz, Scientific Session 'New Faces of Textile Science and Industry in Relation to the Needs of Economy'*, Lodz, Poland, Organiser: Textile Research Institute, Lodz, Poland, Contact: Textile Research Institute, ul. Brzezinska 5/15, 92-103 Lodz, Poland, tel.: +48 42 616 31 00, fax: +48 42 679 26 38, e-mail: info@mail.iw.lodz.pl

➤ October 4-5, 2005. *International symposium 'Nanotechnologies in textiles' INTERNANO-TEX*, Lodz, Poland, Organisers: Technical University of Lodz, Faculty of Textile Engineering and Marketing, Department of Man-made Fibres; Trade Union of Employers of Knitting Industry, Chairman of the Organising Committee: Prof. Bogumil Laszkiewicz, Ph.D., D.Sc. Contact: Piotr Kulpinski, Ph.D., Tel.: +48 (42) 631 33 62, fax: +48 (42) 637 20 40, e-mail: internanotex@mail.p.lodz.pl

2006

- March 22-24, 2006. The 61st Flax Institute conferences. Contact: Ms. Lisa Johnson, NDSU Plant Science, Fargo, USA.
- April 5-6, 2006. Wood and Natural Fibre Composites Symposium, Kongress Palais, Kassel-Stadthalle, Germany. Contact: University of Kassel, Tel.: +49 561/804-3675, fax: +49 561/804-3692, E-mail: m.murr@uni-kassel.de
- May 8-10, 2006. 5th European Motor BioFuels Forum, Hilton Newcastle-Gateshead. Contact: EUROPOINT, Congress & Exhibition Organisers, Ms. Marieke Bouman, P. O. Box 822, 3700 AV ZEIST, The Netherlands, Tel.: +32 (0) 30 6933 489, fax: +32 (0) 30 6917 394, e-mail: mbouman@europoint-bv.com, web: www.europoint-bv.com
- June 4-7, 2006. 4th International conference on Textile Biotechnology, Seoul, Korea, contact person: Ms. Eun Kyung Choe, KITECH, Seoul, Korea, e-mail: ekchoe@cosmos.kitech.re.kr, www.intb.org

REPORTS ON THE EVENTS

Report on the 11th International Conference on Renewable Resources and Plant Biotechnology NAROSSA@2005

The 11th International Conference on Renewable Resources and Plant Biotechnology NAROSSA@2005 took part on June 6–7, 2005, this time at the Institute of Natural Fibres, Poznan, Poland. The Honorary guests represented the Ministry of Agriculture and Environment of Saxony-Anhalt, Magdeburg, Germany; the Ministry of Economic Affairs and Labour, Poland; Wielkopolska: Voivodeship and Municipal authorities.

The conference comprised the following thematic groups:

1. Biotechnology and breeding for non food applications
2. Fibres and fibrous plants for textiles and composites. Renewable raw materials production and processing
3. Processing, characterisation and application of secondary plant substances (agro-fine chemicals from plants)
4. Biomass for energy production
5. Environmental impact and miscellaneous

The event was co-organized by: Dr. Frank Pudel and his team of ÖHMI Consulting GmbH, Magdeburg, Germany and Prof. Dr. Ryszard Kozłowski and his team of the Institute of Natural Fibres, Centre of Excellence “CELLUBAST”, Poznan, Poland, as well as the BIO Mitteldeutschland GmbH Halle/Saale.

In conference took part 100 experts from 12 countries: Belarus, Canada, Czech Republic, Latvia, Germany, Great Britain, Poland, Switzerland, Russia, Romania, Vietnam, USA. The experts delivered 35 oral presentations during Plenary Session and 8 scientific, parallel sessions. Eighteen posters were presented. The sessions have been chaired by 17 moderators. The host Institute presented 11 papers and 6 posters. The proceedings of the conference are provided on CD. All information at: www.narossa.de

Prepared by: Mrs. Maria Mackiewicz-Talarczyk, Network Secretary



STATISTICAL DATA ON FLAX

FLAX CULTIVATED AREA IN THE WORLD [ha]

FIBROUS FLAX

	1999	2000	2001	2002	2003	2004	2005 Est.
AUSTRIA	*350	*450	*130	154 ^x	142 ^x	110	
BELARUS	***70000	81800	°	67333 [°]	71708 [°]	79146	80000
BELGIUM	**12176	****13355	****16990	15567 ^x	19250 ^x	19800 ^{*/}	19000
BULGARIA	***58	300	210	470	150 [°]	70	
CHINA	***101000	°	°	°	°		
CZECH REPUBLIC	6348	6302- linseed; 2240-fibre flax	7095	5885	5900	5500	4690
DENMARK	11	*45	*19	0 ^x	0 ^x		
EGYPT**	14500	°	°	°	°		
ESTONIA	115	137	89	30	17	0	Fibrous Flax 0, Linseed 91ha
FINLAND	850	*1067	*405	202 ^x	97 ^x	67	
FRANCE	*49129	****55629	****67970	68416	76439 ^x	80000 ^{*/}	80000
GERMANY	*570	402 [*]	*297	299 ^x	225	180	
IRELAND	°	°	****0	°	°		
ITALY	°	°	****1	0 ^x	20 ^x	80	
LATVIA	***2000	300-linseed; 1600-fibre flax	°	°	°	2400	4500
LITHUANIA	8600	8600	9 600	9346	9444	5600	
NETHERLANDS	*3570	*4016	*4415	4000 ^x	4615 ^x	4.500 ^{*/}	4600
POLAND	1223	4082	4900	4900	6000	6345 (fibrous flax : 5745, linseed 600 ha)	est. 6823
PORTUGAL	4678 [*]	****3522 [*]	****0	0	°		
RUSSIA	104050	107 610	127 340	110820	118060	112300	100000
SPAIN	*122400	****13595	*342	60 ^x	2 ^x		
SWEDEN	*1327	*21	****32	25	0	30	
UKRAINE	***21900	19300	28280	28200	27000 [°]	38290	50000
UNITED KINGDOM	*14000	****11816	*4430	156 ^x	175 ^x	1820	

Total flax cultivated area in 15 EU countries: in 2000 ****103867 ha, in 2001 ****94631ha, in 2002 : 88 885ha, in 2003: 98 965. Source: Generally, 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

***** Polish Flax and Hemp Chamber

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

note : in all tables the mark °/ 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, 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: albert.daenekindt@vlasverbond.be.

Scutched flax

Water-retted		Dew-retted	
long fibre			
Quality	Prices EURO/100kg	Quality	Prices EURO/100kg
lower quality	up to 161.13	lower quality	99.00 - 148.75
medium quality	161.14 - 185.92	medium quality	148.76 - 185.90
better quality	185.93 - 198.31	better quality	185.91 - 210.70
very good quality	bonus	very good quality	from 210.71
short fibre			
lower quality 14.85 - 18.60 EURO/100kg			
medium quality 18.61 - 24.80 EURO/100kg			
better quality 24.81 - 37.20 EURO/100kg			
higher quality from 37.21 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: 4.0 EURO/100kg • by-products from deseeding price: 2.48 EURO/100kg • short scutched fibre wastes: from 10.00 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

The 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.

2003 and 2004

Same system and amounts as for the crop 2002.

1. Grower: basis subsidy 63 euro/ton;
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.

The possessed data regarding acreage of cultivated flax is provided in the general table: FLAX CULTIVATED AREA IN THE WORLD [ha]. We will try to up-date the other data in the next issues of the Newsletter. In this issue we are providing only the set of country data, which are complete and up-dated.

BELARUS

	1998	1999	2000	2001	2002	2003	2004
Cultivated area [ha]	80000	70000	81800		67333	71708	79146

sent by: P.P. Gulevich, Ministry of Agriculture of the Rep. of Belarus, Minsk, Belarus (1996, 1997)

L.J. Jarmolovitch, Ministry of Statistics and Analysis of RB, Minsk, Belarus (2000)

National Academy of Sciences of Belarus, Institute of Genetics and Cytology, Minsk, Belarus

BULGARIA

	1996	1997	1998	1999	2000	2001	2002
Cultivated area [ha]	300	200	58	58	300	210	470

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

CZECH REPUBLIC

	1998	1999	2000	2001	2002	2003	2004	2005
Cultivated area [ha]	4117	5348	6302	7 124	5885	6003	5499	4 690*
Harvested [ha]	3719	5232	5911	7 124	5825	5953	5 499	
Straw yield [t/ha]	3.01	3.34	2,36	3,23	2,73	2,32	3,6	
Long fibre yield [t/ha]	0.3	0,39	0,35	0,24	0,35	0,32	0,53	
Long fibre production [t]	1235	2098	2235	1591	2100	1884	2 930	
Short fibre yield [t/ha]	0.5	0,53	0,42	0,44	0,42	0,32	0,51	
Short fibre production [t]	1835	2797	2661	3141	2 570	1928	2 850	
Percentage of dew retting [%]	100	100	100	100	100	100	100	
Mill consumption of flax [t]	11200	17484	16811	18526	17 508	15 161	13 150	
Linseed yield [t/ha]*of fibre flax	0.51	0.56	0,50	0,5	0,5	0,5	0,5	
Yarn production [t] (wet + dry spinning)	3850	4835	5301	4300	4150	3894	4020	
Production of textiles [1000 m]	12160	*	*	*	*	*	*	
Particleboards production [m ²]		0	0	0	0	0	0	
Export of seed [t]	730	1340	3421	2526	2187	4 136	3 257	
Export of yarn [t]	1202	1364	1839	1430	1531	2 088	2 029	
Export of fibre [t]	100	90	267	207	226	89	36	
Export of linen textiles (fabrics) [1000 m]	°	*	*	*	*	*	*	
Export of cloth (more than 85% linen) [t]	1830	2138	2470	1996	1854	1 777	1906	
Export of cloth (less than 85% linen) [t]	180	184	264	183	190	176	150	
Import of fibre [t]	2248	2925	3001	3169	3457	2 603	2 960	
Import of yarn [t]	79	349	456	279	202	358	563	
Import of textiles [1000 m]	°	*	*	*	*	*	*	
Import of seed [t]	771	561	449	356	376	527	341	
Import of linen cloth (more than 85% linen) [t]	16	512	609	514	568	353	306	
Import of linen cloth (less than 85% linen)[t]	28	76	103	78	84	74	184	

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

Linseed (flaxseed) in Czech Republic

Czech Republic	1997	1998	1999	2000	2001	2002	2003	2004	2005
Cultivated area [ha]	600	646	2 251	1 700	3 280	2 548	5 345	2 154	3000*

ESTONIA**Fibre Flax**

	1997	1999	2000	2001	2002	2003	2004	2005
Cultivated area [ha]	323	115	137	89	30	17	0	Fibrous Flax 0, Linseed 91ha
Straw yield [t/ha]	0,198	0,513	0,577	1,180	1,971	0	0	
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]								
Linseed yield [t/ha]	0,303	0,513	0,831	0,931	0,916	0,532	0,991	
Yarn production [t] (wet + dry spinning)								
Production of textiles [1000 m]x)	10	3910	7058	9376	
Particleboards production [m ²]								
Export of seed [t]xx)	0	0	0	0	0	0	0	
Export of yarn [t]	79	334	1189	807	896	1266	1200	
Export of fibre [t]	44	17	49	125	223	49	90	
Export of linen textiles (fabrics) [1000 m]								
Export of cloth [1000 m ²]	6	4053	6730	9084	8653	8206	7535	
Import of fibre [t]	154	1486	2822	3021	2440	2553	2607	
Import of yarn [t]	12	179	222	98	518	477	493	

sent by: VORU FLAX-MILL and CENTRAL UNION OF ESTONIAN FLAX, Voru, Estonia (1993-1995)

and Mr. Einar Kikkas, Department of Agriculture, Ministry of agriculture, Tallinn, Estonia

^{*)} data for the previous years are revised; ^{**)} data on export, import are presented by the special trade system; ... data not available

- magnitude nil

SOE presents the data of the flax production from 1993 to 2002 in Estonia. Until 1999 fibre flax was planted. Since 2000 oil flax and fibre flax were planted. Data of oil flax sown area and yield are not included in this table. Stalks yields are estimated on the basis of the production (the quantities) and sown area; At present data of long fibre and shot fibre production are not available, but external trade covers these products from 1995. Production of textiles are evaluated in square metre in Estonia. X) data are confidential, XX) included seeds of oil and fibre flax.

FINLAND

	1998	1999	2000	2001	2002	2003	2004
Flax cultivated area [ha]	613	850	1067	405	202	97	67

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

LATVIA

	1996	1997	1998	1999	2000
Flax cultivated area [ha]	1240	1600	220/2200	200/2000	300/1600

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

LITHUANIA

	1999 ^{**/}	2000 ^{**/}	2001	2002	2003	2004	2005
Fibre Flax Cultivated area [ha]	8 600	8 600	9600	9346	9444 plus 200 ha linseed	5600 plus 200 ha linseed	4300

sent by: ^{*)} calculated data

sent by: ^{**) O. Juknevičienė, Minist. of Agricul., Dep. of Strategy of Plant Production, Prospekt Gedimino 19, Vilnius, Lithuania; completed by Dr. Director Algimantas Endriukaitis, LIA – The Lithuanian Institute of Agriculture Upyte Research Station, Linininku 3, Upyte, 38 294 Panevezys Distr., LITHUANIA}

POLAND

	1999	2000	2001	2002	2003*	2004	2005 Est.
Cultivated area [ha]	1223	5100	4900	5200	3000	6345 fibre flax and 600 linseed	6823
Straw production [thous.t]		11.7	10.8	11.5	7.8	27	0.906
Straw yield [t/ha]		2.75	2.56	3.10	2.53	4.25	4.1
Long fibre yield [dt/ha]	3.7	4.5	3.5	2.9	2.8	8.0	4.23
Short fibre yield [dt/ha]		3.1	3.3	5.2	4.1	3.5	1.54
Total fibre production [thous.t]		3.2	2.9	3.1	2.2	7.5	
Long fibre production [dt]	7664	8777	10454	10780	23200	5000	1510
Short fibre production [dt]	3832	4388	5226	5390	11600	3500	1200
Percentage of dew retting [%]	100	100	100	100	100	100	
Mill consumption of flax [t]	1882	2321°	°6123	6880	6760		
Seed yield [t/ha]	0.6	°	°	°	0.4	0.6-0.7	
Yarn production [t] (wet + dry spinning)	889	1362°	°5950	6669	7400		
Production of textiles [1000 m]	4607	4563°	3953°	4380	4500		
Flax/Hemp Export of seed [t]	°	°	°	°	39/1		
Flax/Hemp Export of yarn [t]	°	°	°	°	3800/2		
Flax/Hemp Export of fibre [t]	°	°	°	°	820/12		
Export of linen textiles (fabrics) [1000 m]	4480	3241°	°2371	°2550	3100		
Export of linen fibre [t]							1355,990*
Flax Export of yarn [t]							2678,136*
Flax Import of fibre [t]	803	°	°	°	3790/24		3480,610*
Flax Import of yarn [t]	345	°	°	°	840/1		857,622*
Import of fabrics [1000 m]	0	°	°	°	867		528,495*
Import of seed [t]	0	°	°	°	3967/319		

Source: H. Smarzyński, 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. 2004-official data of the Agencja Restrukturyzacji i Modernizacji Rolnictwa (ARMIR)

RUSSIA

	1998	1999	2000	2001	2002	2003	2004
Cultivated area [ha]	107340	104050	107610	127340	110820	118060	112300
Straw yield [t/ha] ¹	1.98	1.62	2.43	2.24	2.09	2.85	2.46
Long fibre yield [t/ha] ¹	0.43	0.36	0.55	0.5	0.47	0.66	0.58
Long fibre production [t] ²	33540	23700	51170	58000	37730	55290	58020
Short fibre yield [t/ha]							
Short fibre production [t]							
Percentage of dew retting [%]							
Mill consumption of flax [t]							
Seed yield [t/ha] ¹	0.15	0.20	0.21	0.21	0.20	0.18	0.17
Yarn production [t] ³ (wet + dry spinning) single-thread yarn	17093	20108	19806	22012	23189	25067	26088 ⁵⁾
Production of textiles [mln m ²] ⁴⁾	68,8	90,4	113	125	143	157	159 ⁵⁾
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 (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: Alexander Goncharov, Deputy Director, Department for Public and International Relations, Federal Service of State Statistics of the Russian Federation, Moscow, Russia

¹⁾for 1ha harvested area; ²⁾data for long fibred flax; ³⁾unifilar linen yarn; ⁴⁾linen textiles finished; ⁵⁾ data for year 2004 are preliminary.

UKRAINE

	1998	1999	2000	2001	2002	2003	2004
Cultivated area [ha]	31200	21 900	1930	28200	28200		117000

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

*/ in mln m²

STATISTICAL DATA ON INDUSTRIAL HEMP

HEMP HARVESTED AREA IN EUROPEAN UNION COUNTRIES AND IN POLAND

COUNTRY OF EU	1996*	1997*	1998*	1999*	2000/2001**	2002*	2005 est.
Austria	661	938	974	289	287	277	
Belgium			0	1	0	0	
Denmark			26	23	7	0	
Finland	2	53	1218	93	59	0	
France	7588	10980	9682	9515	7700	7729	10000
Germany	1362	2766	3553	3993	2967	2035	2050
Italy	0	0	255	197	151	300	
Ireland	0	23	28	22	6	0	
Luxembourg	5	13	13	0	0	0	
Netherlands	893	1322	1055	872	806	2100	100
Portugal			770	185	4	0	
Spain	1450	4828	19860	13473	6103	691	
Sweden					0	0	
UK	1697	2293	2556	1517	2245	1413	
Switzerland	150	200	250	250	250*		
Total area in EU	*13658	*23216	*39990	*30179	**20404	**14584	
Poland –data by CSO (Central Statistical Office of Poland)	200	300	78	100	111	83 In 2003– 101 ha* In 2004 –909 ha*	319,09

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

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PRODUCTION OF FLAX AND HEMP FIBRE IN EU COUNTRIES IN THE CAMPAIGN 2004/2005

Country	Long flax fibre [tons]	Short flax fibre [tons]	Hemp fibre [tons]
Belgium	19 029	11 893	-
Czech Rep.	2 930	3 550	-
Germany	112	116	2 358
Spain	-	-	1 570
France	105 000	75 000	14 000
Italy	-	128	424
Lithuania	317	753	-
Latvia	2 553	3 795	-
Hungary	-	-	944
The Netherlands	4 516	3 333	81
Austria	82	136	446
Poland	151	120	146
Finland	-	100	8
UK	-	121	1 583

Source: data of the Management Committee for Natural Fibres of the EC

FUTURE PLANS

2005

- FAO/SCORENA International Conference “Textiles for sustainable development”, hosted and supported by CSIR, South Africa, Institute of Natural Fibres, Poland and South African Government Organizations, Port Elizabeth in South Africa, October 23-27, 2005.

Future endeavors: Efforts towards creation of the European Platform for Natural Fibres, Contributing to the organization by FAO the International Year of Natural Fibres, Searching for projects - to support financially the Network activities

REMINDER

Subscription orders and contributions for the next EUROFLAX Newsletter can be sent directly to the Editor by letter, fax or e-mail.

Attention

It is possible to order a translation of selected parts (contributions) of each EUROFLAX Newsletter's issue in French, Polish or Russian for which a charge is made. Send orders to the Coordination Centre of the Network in Poznan.

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