

# “CONTRIBUTIONS OF INCDTP TO THE REALIZATION OF THE STRATEGICAL OBJECTIVES REGARDING THE PROCESSING TECHNOLOGIES DEVELOPMENT OF THE BAST YARNS IN THE WEAVING MILL”

Maria Dan, Emilia Visileanu, Iuliana Dumitrescu – INCDTP Bucharest  
 Rodica Neagu – ICEM Bucharest  
 Aurel Varzari, Stejarel Doru Lupu – SC NATROM PROD - IMPEX SRL Bucharest  
 Francisc Nagy – SC MICRO P ELECTRO SRL Cluj - Napoca  
 Veronica Craiu –INCDMF-CEFIN - Bucharest  
 Paul Vasile, Margareta Robe – SC PRODIN SA Bucharest

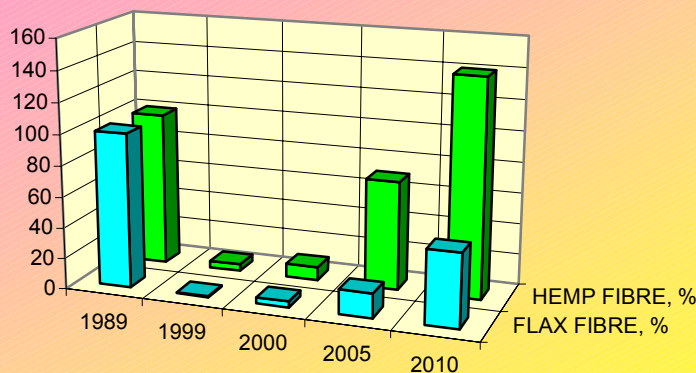
## 1. THE STRUCTURE OF THE FLAX-HEMP SECTOR IN ROMANIA, ITS EVOLUTION AND PERSPECTIVES UP TO 2010

The hemp sector in Romania has the subsectors such as Agricultural subsector, Preindustrialisation, Textil and Nontextil ones, where the raw material that come from the flax and hemp cultures for fibres and seeds, is rendered valuable. The range of sorts of the textile subsectors is involved in all groups of the CAEN code, and the production of thin fabrics by 51 –100% flax / hemp and ecological / classical finishings, is entirely exported.

During 1990 – 2000, the flax –hemp cultures dramatically decreased, depriving the subsectors of primary and industrial processing of own raw materials; the textile industry of flax and hemp imported scutching tows.

INCDTP has elaborated the Strategy of sector development until 2010, that aims at the re-establishing of the flax-hemp cultures (fig.1) by supporting governmental policies, the redimentioning and retehnologising of the upstream industrial subsectors, under the specific market economies; the raw materials resulted from the cultures that will be transformed in performance textile and nontextiles, according to the tendencies that globally occur.

FIG.1 THE EVOLUTION OF THE FLAX AND HEMP FIBRES PRODUCTION TILL 2010 - PROGNOSIS, %  
 -REFERENCE YEAR: 1989-



|               | 1989 | 1999 | 2000 | 2005 | 2010  |
|---------------|------|------|------|------|-------|
| FLAX FIBRE, % | 100  | 0.6  | 3.9  | 15.7 | 47.2  |
| HEMP FIBRE, % | 100  | 4.4  | 8.8  | 70.2 | 140.5 |

## 2. "CONTRIBUTIONS OF INCDTP TO THE REALIZATION OF THE STRATEGICAL OBJECTIVES REGARDING THE PROCESSING TECHNOLOGIES DEVELOPMENT OF THE BAST YARNS IN THE WEAVING MILL"

INCDTP contributes at the flax-hemp sector by its researches within two strategical objectives:

a) "Superior, textile and nontextile valorification of the products resulted from the flax-hemp cultures", by the realization of ecological and huma friendly products, by clean technologies;

b) "Optimization of the present technologies of mechanical and textile chemical processing of the bast fibres", by elaboration of new technologies, devices, installations and automations.

The flax and hemp yarns have important variations of the diameter, so that they are processed by small speeds and efficiencies, as comparative to those of cotton and wool; the breaks are determined by thickenings (that bloke between disks) and thinnesses (weak areas) of the yarn. The tension application by help of the classical tensioning devices, with disks and grids, involves the path of the yarn between narrow spaces so that the yarn irregularities frequently generate breaking

The functional principle of the tensioning devices with a ball was considered more appropriate for the bast fibres, because the positive and negative variations of their diameter pass easier under a ball, than between two disks/grids pressed by arc (fig.2)

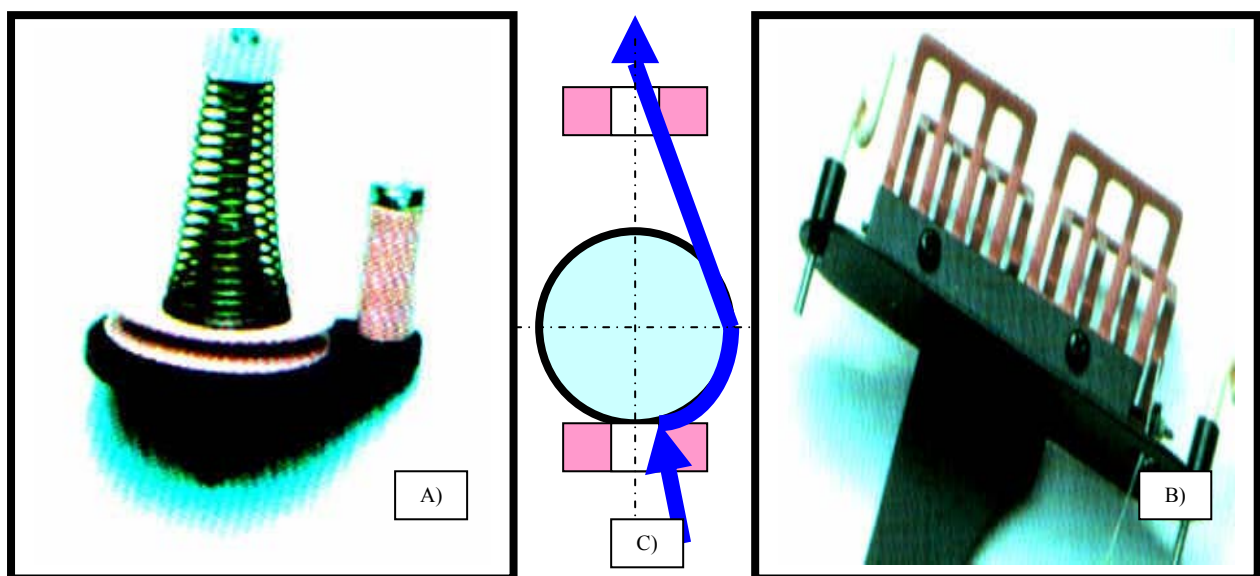


Fig.2 Yarn tensioning devices

- A) B) Classical tensioning devices with disks and grid;  
C) Functioning principle of the ball tensioning device (INCDTP)

There realized and integrated a device of this type (in course of pateting) within an existing bobbin machine, which is highly spread in the weaving mills in the country.

The technological testing of the device aimed at the confirmation of the caressing application of the tension and was carried out in collaboration with SC PRODIN Bucharest, an outstanding mill in the Flax-Hemp sector in Romania. The 100% 66tex(Nm 15) dyed linen yarns were processed on the same machines, under the same technological conditions ( the same stages of yarn dyeing, of fabric finishing) and they were named such as:

- Test 1 – rebobbed yarns with tensioning device INCDTP;
- Test 2 - rebobbed yarns with existing tensioning device (with disks)

Fig. 3 and 4 confirm the caressing application of the yarn tensioning with device INCDTP by the better values of Test 1, as compared to Test 2: production indices, mechanical –physical characteristics of the yarns and fabrics.

