# Fibre update



*Tencel's colour forecast for autumn/winter 2002-03 is based on rational simplicity and attention to detail, with colours shown in calm considered groupings. From the five formats, the All Eyes on Red story is illustrated - three reds playing with light and shade while winter pink is 'sweet and full'. Cosmetic surfaces are shimmering or matt in finest wovens and dense jersey.*

## Now DuPont gets polymer from corn

DuPont (Wilmington, DE) has successfully manufactured a critical ingredient for its newest polymer, Sorona, using a fermentation process based on corn sugar, a renewable resource. Before this development, the substance could only be produced from petrochemicals.

The chemical, PDO, also known as 1,3 propanediol, was produced by DuPont and Tate & Lyle scientists at a pilot plant located at Tate & Lyle's Decatur, Ill., facility. Tate & Lyle, a major corn-based products company and one of the world's largest sugar companies with expertise in fermentation processes, is one of two DuPont development partners in the effort. The other is Genencor International, which is developing the innovative biocatalyst for the process at its Palo Alto, Calif., research centre.

PDO is a key ingredient in the manufacture of DuPont Sorona 3GT polymer, which can then be spun into apparel-grade textile fibres. Fabrics made with the new fibre are said to be soft to the touch, exhibit excellent stretch and recovery characteristics, can be dyed readily and feature the easy care attributes of polyester.

"We are extremely pleased with this development because it offers solid proof that biotechnology can and will deliver far-reaching, transformative benefits in a wide variety of areas," said Ellen J.Kullman, DuPont group vice president and general manager of DuPont Bio-Based Materials. "Sorona is the newest polymer platform from DuPont and the first in what we believe will be a family of bio-based products with exciting consumer and industrial applications."

DuPont recently started up a new continuous polymerisation plant at Kinston, N.C., for the manufacture of the polymer. The PDO used in that process is made for DuPont from petrochemical feedstocks by Degussa, a German company. The new Kinston plant has the capability to switch to corn- based PDO once process economics and market demand justify the change. Sorona is the first product developed by the company's Bio-Based Materials business and is seen by the company as one of its most significant new polymers in recent years. The Bio-Based Materials unit serves as the company's focal point for the application of modern biology to industrial markets.

With chemical company Cargill-Dow also using corn for its Natureworks, the fibre generated from polylactic acid which also comes from the same plant, farmers worldwide might see corn as the cash crop of the future.

## Now milk

If the farmer's goats eat the corn, all is not lost apparently. Canadian company Nexia Biotechnologies expects to generate high performance fibres from goat's milk, using a breed of small African goats. If true, it will be the result of genetic engineering, and the ability to implant recombinant protein genes into the DNA of goats. It has been found that the silk-like material spun by spiders in the formation of their webs is one of the strongest biomaterials known with high tensile strength and said to be ten times stronger than steel. It has a break strength 3.5 times that of paramid fibres. The product is called BioSteel.

As spider farming is not a practical solution, this is where DNA and genetics come into play. Laboratory tests have proved that the spider-silk protein can be extracted from the milk and spun into strong fibres. It is stated that since 1992 some $25 million has been invested in the company and its research. Nexia has three farms raising the goats, two outside Quebec and one in New York state. Finance is available for further development work for the next two years.

## Meryl Skinlife

Nylstar is currently testing a new bacteriostatic fibre called Meryl Skinlife. It is designed to provide biological comfort by maintaining the body's natural balance of bacteria on the skin and utilises polyamide 6.6. According to Nylstar, the bacteriostatic agent is infused into the yarn's polymer matrix, making it a permanent feature. Unlike surface post-treatments, there is no danger of chemical migration from the fabric to the skin or a reduction in performance. The fibre will be suitable for garments which come into skin contact.

## Unifi's Augusta and Sorbtek fibres

Major fibre producer Unifi has introduced its Augusta fibre, seen as a technological breakthrough in filament-textured yarns. It allows the fabric producer to create the feel and drape of fine spun yarns with a far easier to process filament yarn. It provides the ease of care associated with synthetic yarns but with a soft, natural hand. Augusta is designed for use in seamless apparel, intimate and sports apparel as well as other end uses.

Another Unifi fibre recently introduced is its Sorbtek for total moisture control. Using either nylon or polyester, Sorbtek can be woven or knitted only where it is needed which can determine the level of moisture control. It moves moisture to where it can be most quickly evaporated, eliminating the need for applying a moisture control finish. In addition to being the fastest drying available, fabrics made from Sorbtek are also highly breathable, lightweight, shrink resistant and easy to care for.