

Press Release

*Universities and companies jointly develop new natural paints, yarns and toys*

### **Eastern Netherlands to work on bio-based products**

**The eastern Netherlands has taken a major step towards producing bio-based products. Eleven companies, three universities and a college of higher professional education in the eastern Netherlands will jointly develop bio-based pigments, paints, brushes and yarns. This will result within three years in concrete product concepts, which are expected to capture the market in subsequent years.**

Bio-based is the collective name for products made of natural raw materials that are biodegradable and harmless to both people and the environment. Experts believe that bio-based owns the future, although many bio-based products are still in the research phase. The Netherlands aims to play a pioneering role in the development of bio-based technology, with Dutch companies as the market leaders.

The fifteen collaborating parties in the eastern Netherlands intend to move from concepts to tangible products within three years. The parties involved are jointly investing 1.1 million Euros in the 'Eastern Netherlands Bio-based Economy & Technology' project and will receive more than 1.1 million Euros in subsidies on top of this as co-financing from the state and the provinces of Gelderland and Overijssel in the Netherlands. The new bio-based products are expected to generate 40 million Euros in revenues by 2015.

The 'Eastern Netherlands Bio-based Economy & Technology' project will focus on four areas of application:

- Paints** - development of natural paints from bio-based materials;
- Brushes** - development of paintbrushes from bio-based yarns;
- Toys** - use of bio-based pigments and packaging in the toy industry;
- Geotextiles** - development of bio-based degradable yarns for geotextiles that will be used for projects such as the construction and reinforcement of dykes.

### **Bio-based paints and brushes**

Synthetic, chemical paints contain harmful additives and solutions that may produce symptoms such as allergies, eczema and sometimes even brain damage. Increasing numbers of additives are therefore being banned, but as a result the quality of the dye is rapidly declining. Before the appearance of synthetic paints, properties were painted using linseed oil paint, a natural, sustainable paint that provides protection for at least twelve years. The disadvantage of linseed oil paint, however, is its long drying time and satin matt appearance, which many consumers find unattractive. It is also inconvenient for painters and decorators, due to the waiting time required between applying coats of paint. In the project, work is being carried out on the revival of linseed oil paint. New technologies and other bio-based oils are intended to produce a new bio-based paint that will dry faster and have a glossier finish, resulting in its extensive use worldwide. Painting and maintenance company *Gebroeders van der Geest* and *Rolsma Lijnolieverven* (Linseed oil paints) in Enschede are, together with the Universities of Wageningen and Twente (NL), taking the lead in this development process.

Brushes made of pig bristles are a natural product. *Van Dam's Kwastenfabriek* (Brush factory) in Culemborg is the only producer of such quality brushes in the Netherlands. As pig bristles are becoming ever scarcer and thus more expensive, the factory will search for an alternative as part of the project. A feasibility study will be carried out on a bio-based brush: a brush based on biopolymers with the quality of a pig-bristle brush. In addition, joint efforts with the University of Twente (NL) will be directed towards making a more ergonomic brush handle.

Radboud University in Nijmegen (NL) is participating by conducting research into the medical impact of materials that come into contact with the skin and it will develop measuring equipment for this purpose. This should result in a skin-sensitivity indication for materials.

### **Bio-based yarns and geotextiles**

Geotextiles too will benefit from the use of the most durable yarns, such as those found for example in TenCate Geotube® systems. This woven material is already being used to dewater and consolidate sludge and industrial waste (such as dredged materials, paper pulp and slurry) in a sustainable way. Artificial dyke bodies are also being made with this material. After proven service, many of these systems are left in the ground because their removal is either unnecessary or difficult. In the project TenCate is working on bio-based geotextiles that will spontaneously compost after a pre-set time and thus disappear from the ground. In order to produce the bio-based yarns, TenCate will investigate the suitability of a degradable biopolymer developed by DSM. The bio-based TenCate Geotube® that is envisaged can expect to attract worldwide interest. The new yarn can also be made suitable for functional applications in other durable TenCate products.

### **Bio-based toys**

SES Creative is a Dutch company specialising in creative, high-quality toys. In the project SES will work together with other parties on improved bio-based colour pigments for use in toys and on bio-based packaging materials that will in time replace non-bio-based materials.

### **Innovative character**

The 'Eastern Netherlands Bio-based Economy & Technology' project is of a highly innovative nature. Making the products fully bio-based is a very promising venture, but there is still a long way to go. It is hoped that this project will also enable the companies and universities to establish a lead in knowledge of bio-based products and their marketing. There is growing interest worldwide in sustainable and bio-based products. The production and marketing of bio-based paints, brushes, geotextiles and toys will thus give the eastern Netherlands region an international image of sustainability.

The full list of participants in the 'Eastern Netherlands Bio-based Economy & Technology' project is: Painting and maintenance company Gebr. van der Geest; TenCate; Van Dam's Kwastenfabriek; Kees Rolsma Lijnoliepaints; toy-maker SES Creative; De Woonplaats housing corporation; University of Twente; Saxion College of Higher Professional Education; Radboud University, Nijmegen; Wageningen University and Research Centre; Applied Polymer Innovations (API); TwinX Innovatie and Marketing; Dino, initiator and supervisor of innovation processes; Antworks Engineering Software; Van Weezenbeek Specialities, experts in the field of pigments.

The project was established with the aid of the Eastern Netherlands Development Company and Innovation Platform Twente.

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