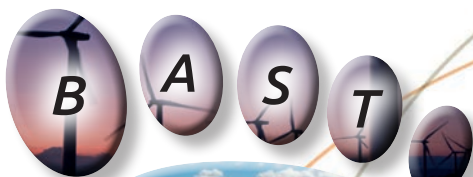




TEXTIL COLOR
WE SURE KNOW TEXTILES

Sustainable textile auxiliaries for a clean future



*Our Best
Available
Sustainable
Technology*

Components of textile auxiliaries

Carbon chains are the basis for many textile auxiliaries, especially when surfactant properties are required with long hydrophobic chains and a hydrophilic part. The sources of carbon chains are animal or vegetable fats and crude oil. Animal fat is often associated with poor animal husbandry and contradicts the vegan lifestyle. The extraction of crude oil and the use of petroleum products can be associated with various environmental problems. Moreover, oil is a non-renewable resource with finite reserves.

Vegetable oils represent a great potential for the production of sustainable textile auxiliaries based on renewable raw materials.

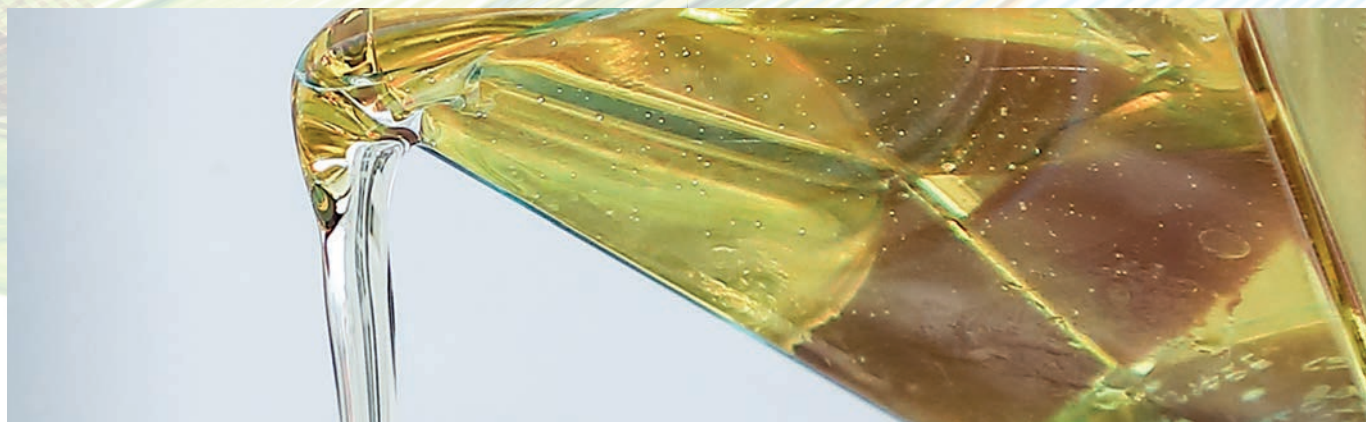
Use of renewable raw materials

Renewable raw materials are agricultural and forestry products that are not used as food or animal feed, but are used for material or energy purposes.

If renewable raw materials are used in the production of textile auxiliaries, the following advantages result:

- Conservation of finite fossil resources
- CO₂ neutrality: bio-based textile auxiliaries extracted from plants release only as much CO₂ during decomposition as they absorbed during the growth phase. This gives them the advantage of CO₂ neutrality compared to petrochemical-based textile auxiliaries.

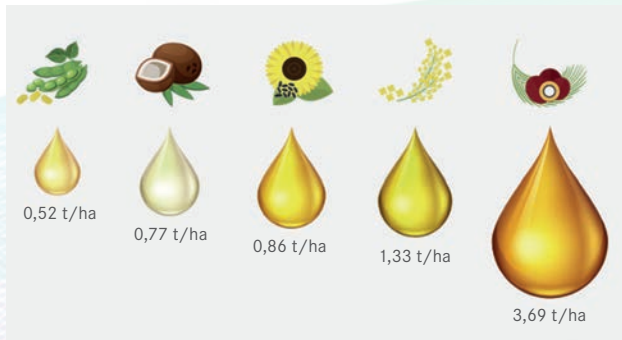
The prerequisite for this is cultivation that is not at the expense of the global food supply, that does not cause soil acidification or nutrient enrichment in waters (eutrophication) and that does not exclusively support monocultures.



Vegetable oil as a renewable raw material

The material use of a plant for a textile auxiliary means that the biogenic oils and fats of a plant are used. Plant oils are obtained by extraction from plant seeds or other parts of a plant. Natural fats consist mainly of triglycerols/a triglyceride mixture with three long-chain fatty acids. The triglycerides contained in the oil palm are rich in palmitic acid and stearic acid.

The oil palm is by far the highest-yielding oil crop and yields up to 3.69 tons of oil per hectare (rapeseed yields 1.33 t/ha, sunflower 0.96 t/ha, coconut 0.77 t/ha and soya plants 0.52 t/ha)^[1].



Yield from the most common plants for vegetable oil production. Source: www.forumpalmoel.org

With around 65 million tonnes produced in 2015, palm oil accounts for more than a third of all vegetable oils produced worldwide^[2].

However, in the case of unsustainable practices, intensive cultivation can be accompanied by large-scale deforestation and pose a risk to valuable habitats, particularly in Indonesia and Malaysia, where 85% of globally traded palm oil is currently produced^[3].

Certified palm oil as a sustainable renewable resource

Organisations such as RSPO (Roundtable on Sustainable Palm Oil), ISCC (International Sustainability & Carbon Certification), Rainforest Alliance and RSB (Roundtable on Sustainable Biomaterials) aim to achieve more environmentally and socially compatible production of palm oil.



In this context, working conditions and the observance of land use rights are taken into account, areas worthy of protection such as rainforest areas and peat bogs are protected from uncontrolled expansion of oil palm plantations, and the rights of indigenous peoples are respected^[4]. Currently 20% of all traded palm oil is RSPO certified^[5].



Cross section of the palm oil fruit with the palm kernel.

The BAST product range from Textilcolor

The following products from Textilcolor form the new **BAST** (Best Available Sustainable Technology) range in which RSPO certified palm oil is used in the production process.

HY-products

- | | |
|------------------|---------------------|
| • Emulgator B-HY | • Losin OC-HY |
| • Lavan C-HY | • Sevocomb C-HY |
| • Lavan N-HY | • Softycon A-HY |
| • Lavan O-HY | • Stabilisator K-HY |
| • Losin O-HY | • Tecotex S-HY |

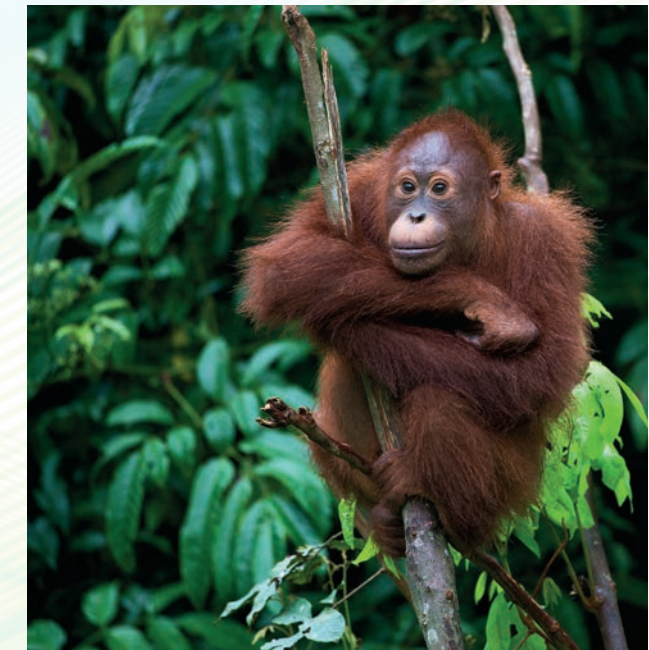
With the addition „HY“ - Hybrid Technology - the products stand out from the respective standard products. The BAST range covers the current performance level of these auxiliaries with a significant proportion of renewable raw materials. The proportion by weight of RSPO-certified molecular building blocks of all active ingredients is already up to 45 percent (as of 2020). By constantly developing and incorporating new technologies, Textilcolor aims to further increase the proportion of renewable raw materials.



Our goal: maximising the use of renewable resources

Textilcolor aims to use renewable resources/certified palm oil in 45% of all its non-ionic surfactants by 2025.

The Bluesign Technologies AG, which is committed to responsible and sustainable textile production, welcomes the fact that Textilcolor, as a bluesign® system partner, uses renewable raw materials for the production of textile auxiliaries and increasingly uses certified palm oil when purchasing raw materials.



Textilcolor AG

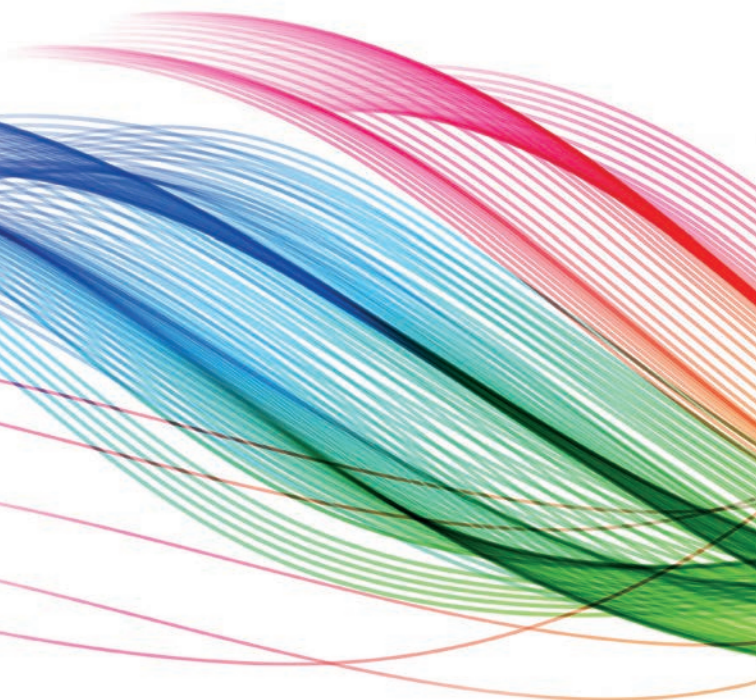
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- [1] WWF (2016). *Oil for the world*. <https://mobil.wwf.de/fileadmin/fm-wwf/Publications-PDF/reading sample-Palmoel-WWF-Magazine-3-2016.pdf>
 - [2] Statista (2019). *Production of the most important vegetable oils worldwide in the years 2005/06 to 2018/19*. <https://de.statista.com/statistik/daten/study/28915/poll/production-vegetable-oils-worldwide-since-2000-01/>
 - [3] FAOStat (2017). *Crops*.
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 - [5] RSPO (2019). *Impact*. <https://rspo.org/impact>