Sustastic Effects

sustastic. Sustainable and fantastic eg. Sustastic effect yarns.

Design begins with material selection, which serves as the primary inspiration: understanding what a material can do, what properties it has, and how it behaves in various structures. A new type of material can open up creative pathways previously unexplored. Effect yarns in knitting, for instance, can create striking textures even in simple stockinette stitch. However, most effect yarns are petroleum-based, relying on non-renewable resources that harm the environment. Biodesign offers an alternative by merging science and art to create modern, innovative products. The Sustastic Effects yarns were created in this spirit, resulting in new, sustainable design solutions.

I developed an experimental effect yarn collection inspired by the open-source work of biodesigners who have pioneered alginate yarns. I created effects by coloring the yarn with natural pigments from spices, juices derived from kitchen waste, vegetable powders, and algae, along with solid ingredients like mica and expired poppy seeds. These choices ensure that the yarns are environmentally friendly and safe for human health. Made from bioplastic, these yarns naturally qualify as effect yarns. This collection demonstrates that with the right materials, we can achieve striking, vibrant colors while creating sustainably, resulting in yarns that are as extravagant in color as they are in texture.

However, the yarns are not yet perfect. To be suitable for broader applications— such as functional textiles or clothing— they need improvements in certain areas, such as water repellency and UV resistance for the colors. Our team is currently working to enhance these properties as part of the MOME Incubation Program.

Most of our findings are intended to be open source. Our goal is to share knowledge and spark conversations among designers in the field of biodesign.

CONNECTION TO EFFECT YARNS





EFFECT YARNS - ENVIRONMENTAL EFFECTS





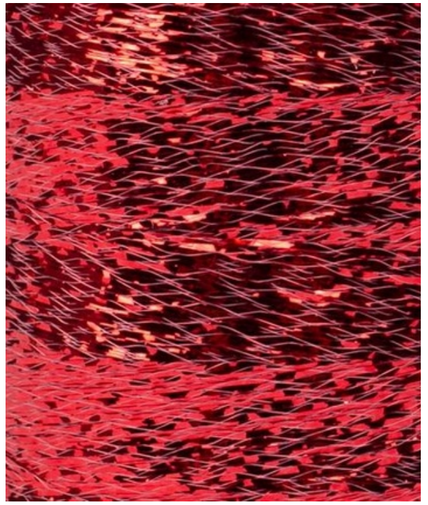






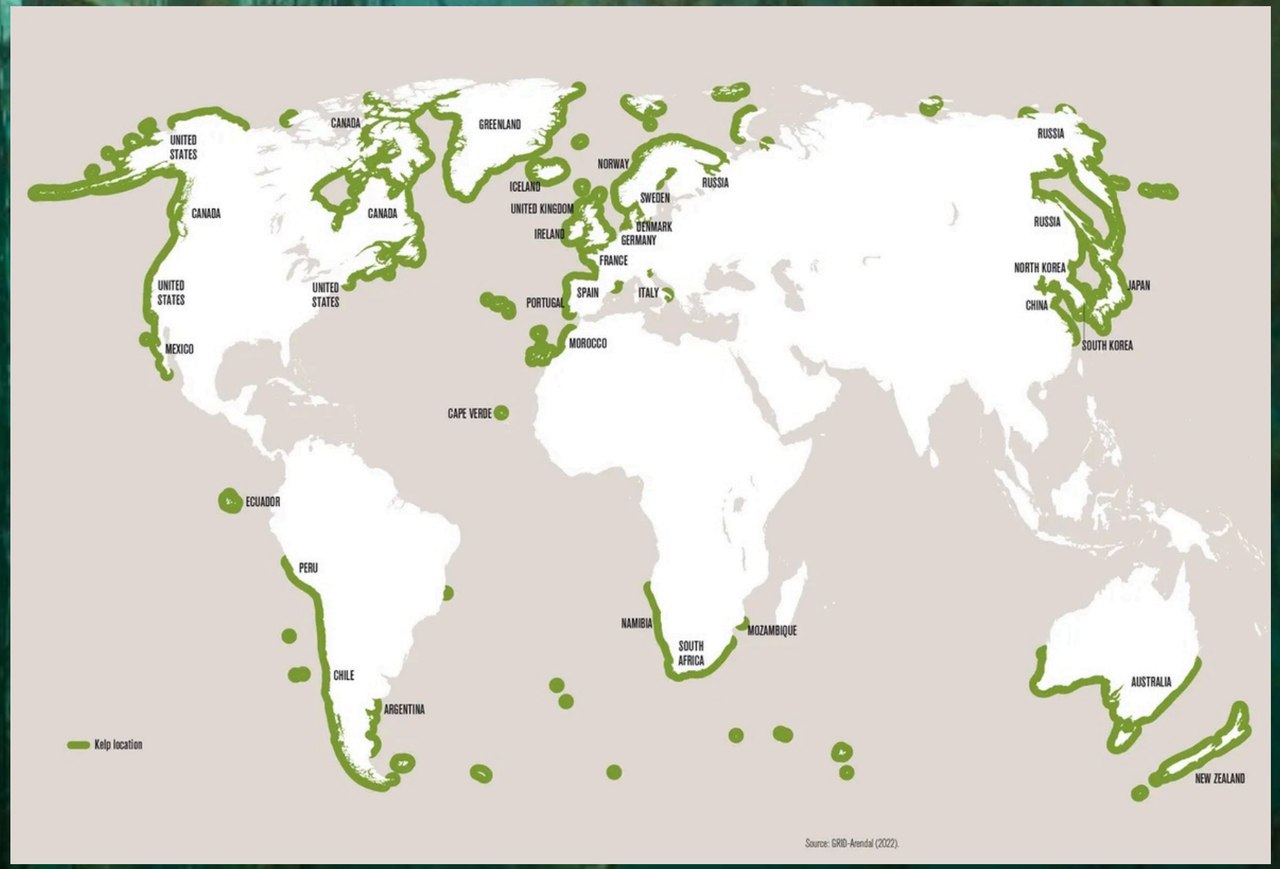






SOLUTION: ALGAE BASED BIOYARNS

Kelp: a fast growing resource with great environmental friendly material alternative potential

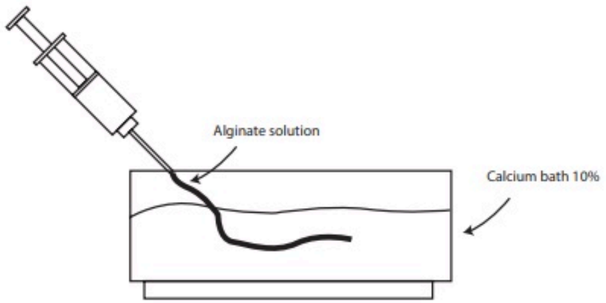


FROM OPEN SOURCE TO OPEN SOURCE

Alginate yarn

Ingredients:
6g Alginate
10g Glycerine
200 g water
5g Sunflower oil
Calcium chloride solution 10%
(30g Calcium Chloride dissolve din 300ml water)

Tools:
Scale
Spoon
Blender
A bowl or jar (for the calcium chloride bath)
60 cc (or more) syringe to extrude the alginate Alginate solu-
tionCalcium bath 10%



1. Preparation
- Weigh your ingredients for the alginate plastic (alginate, glycerine, water, sunflower oil). Optional: use a diluted natural dye instead of water in the same amount for a colored plastic.
- Put the oil, alginate and glycerine in a blender and add a dash of the water. Blend into a thick and homogenous paste. Then add the rest of the water and blend again (this is to avoid lumps).
- Try to leave the mixture overnight to allow the bubbles to come to the surface and pop.
- Make the calcium chloride solution by dissolving 30 gr in 300 gr hot water.

2. Extruding
- prepare the work space by putting out your calcium chloride bath, an empty jar to wrap the string around, a syringe and your alginate mixture.
- fill the syringe with about 50 ml alginate plastic
- extrude the alginate plastic into the calcium chloride bath, try to extrude continuously and uninterupted to created an even, long string. Repeat this process to make more strings.

3. Curing & drying
- leave the string in the bath for a few minutes and then rinse in some tap water.
- the strings will be a bit curly at this stage. Wrap them around a jar to create a spool and stretch them out a little..
- Let it cure until totally dry, you can take the string off the jar if you want to stretch them out into long straight strings.




















BioMenü
Spirulina
aigapor
125g











DRY NG







SH AP ING







CO LOR ING





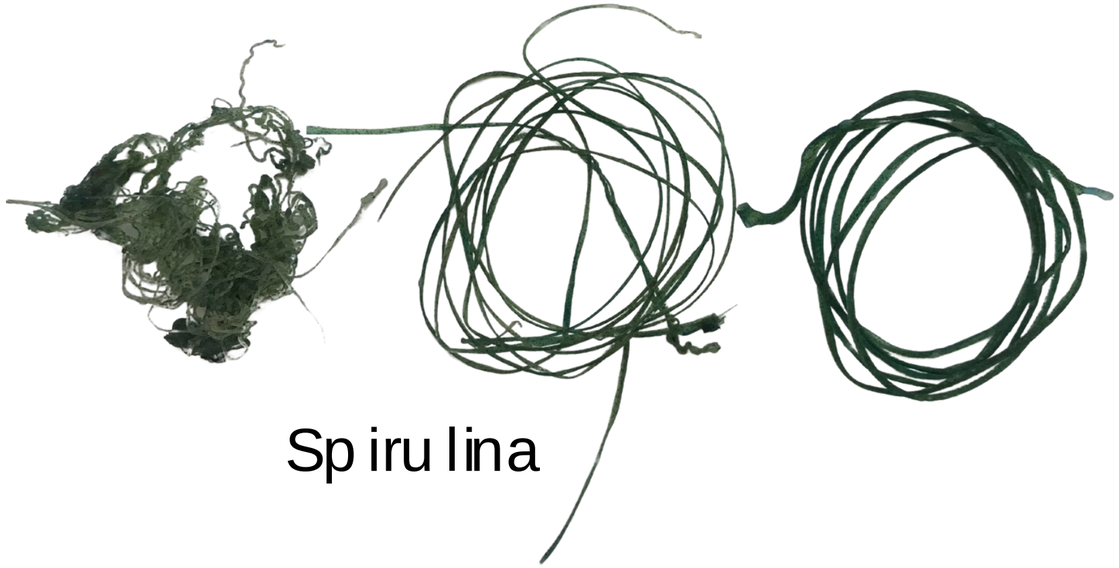








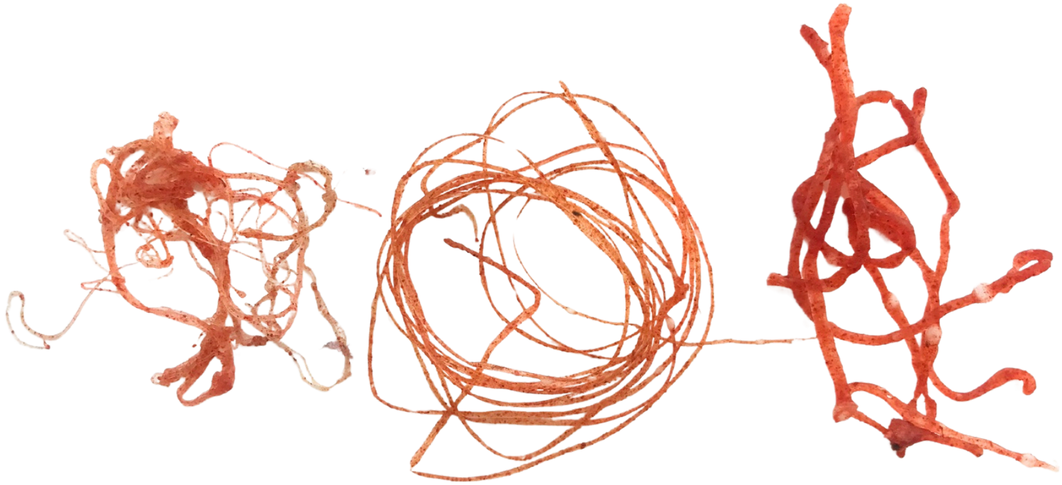
COLORING



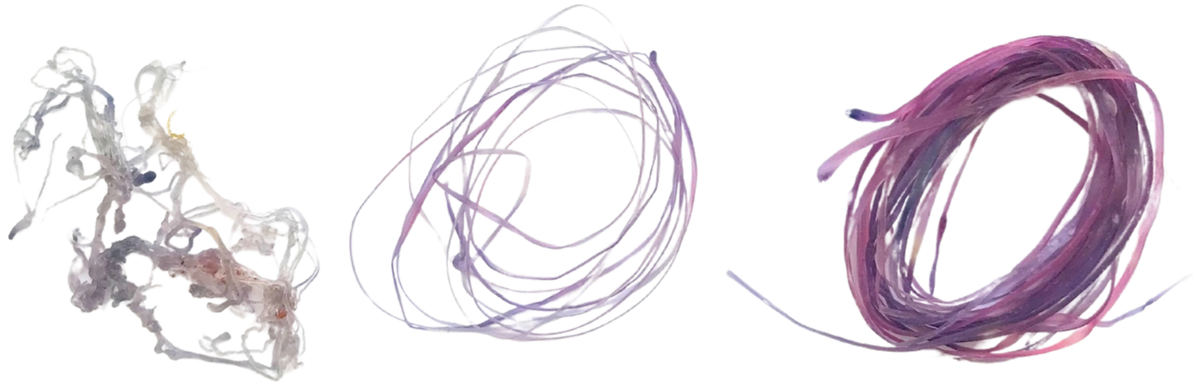
Spirulina



Kurkuma

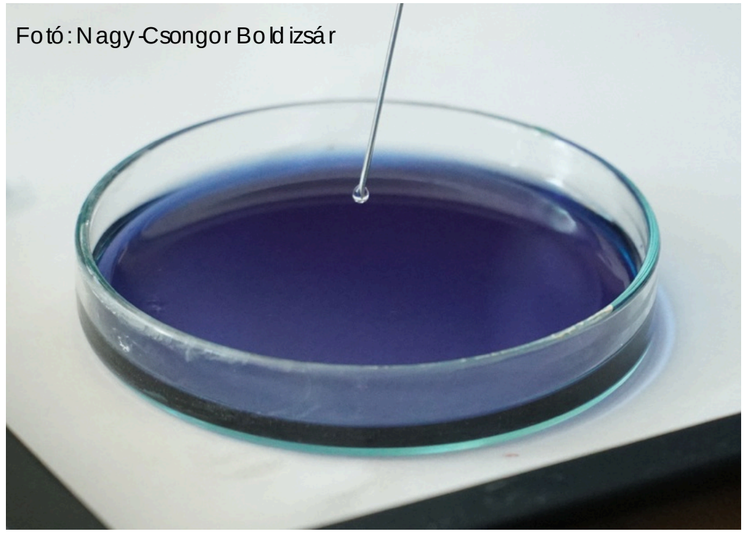


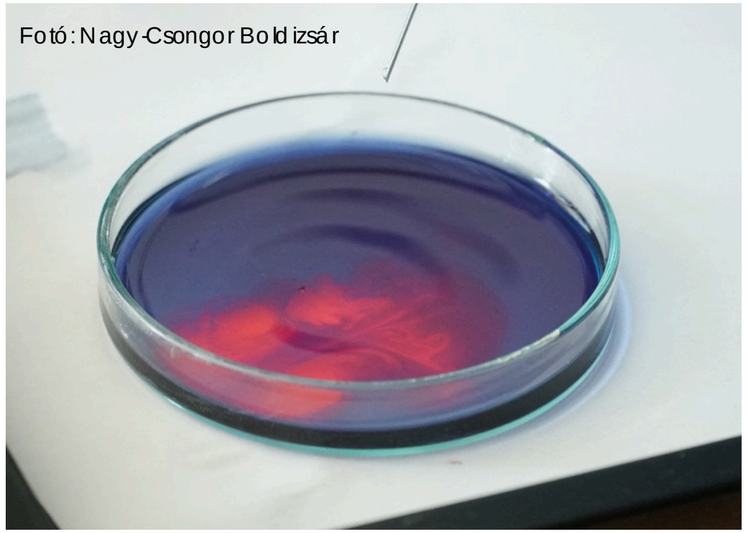
Paprika

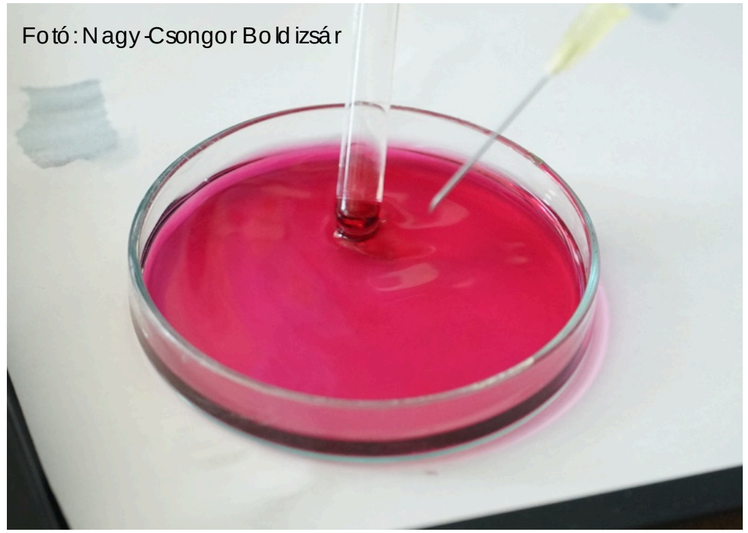


Cabbage

CABBAGE -PH


Fotó: Nagy-Csongor Boldizsár


Fotó: Nagy-Csongor Boldizsár


Fotó: Nagy-Csongor Boldizsár





KNIT AND CROCHET SAMPLES



EFFCETS


Size transition
Glitter
Color gradient
Color strenth
Dots
Spun

COLORS

Alginate







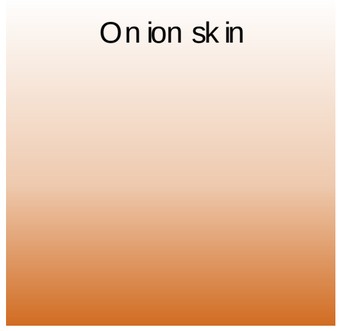




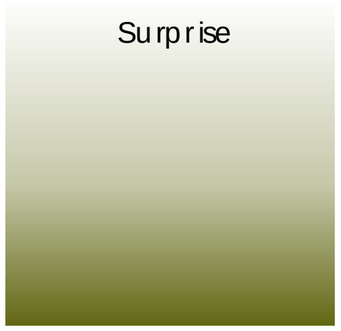












SUSTAINABILITY

Ingredients
Water, sodium-alginate, sunflower oil, glicerin

Effects
Mica, poppy seeds



Colourants
Spices, algaes,

Methods
Energy effici

Byproduct: sa

Sustastic effects

Gulya Nóra

MA Diploma / 2024

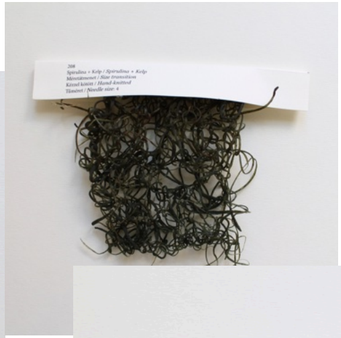
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águ University of






404a
Káposzta - Káposzta + sav / Cabbage - Cabbage + acid
Színátmenet / Colour gradient
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 4


104b
Cékla / Beetroot
Alapszín / Base colour
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 4


208
Spirulina + Kvíz / Spirulina + Kvíz
Mintakötmet / Háw (transzfer)
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 4


602
Sötét spirulina- Kurkuma / Dark spirulina - Kurkuma
Örvény / Swirl
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 6


603
Káposzta + sav - Meglepetés / Cabbage + acid - Surprise
Örvény / Swirl
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 6


109b
Spirulina / Spirulina
Tollaslabda / Szivarvány
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 4


103b
Paprika / Paprika
Alapszín / Base colour
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 4


307k
Káposzta, ezüst / Cabbage, silver
Csillám / Glitter
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 4


310m
Hagymahéj, ezüst / Onion skin, silver
Csillám / Glitter
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 4


301n
Alginát / Alginate
Pötty / Dot
Kézzel kötött / Hand-knitted
Tűméret / Needle size: 4

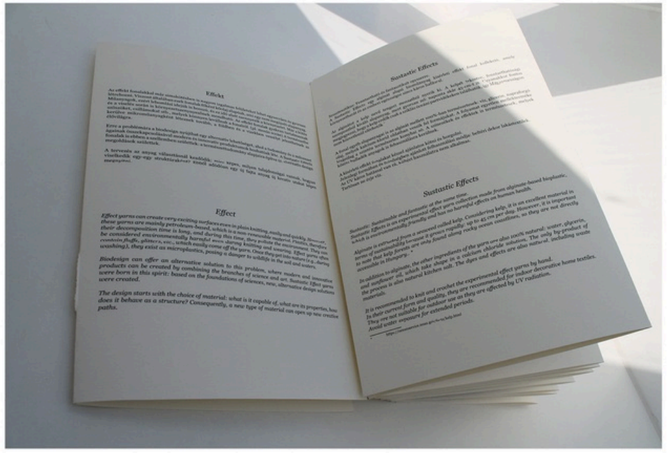



Sustastic effects
Gulyás Nóra
MA Diploma / 2024
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Moholy-Nagy University of Art and Design
Termékgrafika / Compulsory
Kiss Ildikó

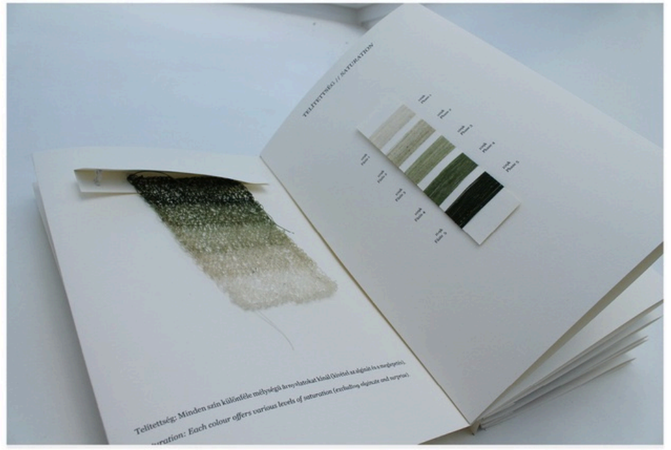

SZÍNÁTMENET // COLOUR GRADIENT
401k Spirulina-Paprika
402k Paprika-Alginát
403k Paprika-Kelp+Spirulina
404k Káposzta+sav-Káposzta
405k Kurkuma-Paprika
406k Cékla-Kukrcuma
407k Hagymahéj-Spirulina
408k Káposzta-Hagymahéj
409k Káposzta+lúg-Kurkuma
410k Cékla-Meglepetés
411k Cékla-Paprika
412k Káposzta-Spirulina
401n Spirulina-Paprika
402n Paprika-Alginate
403n Paprika-Kelp+Spirulina
404n Cabbage+acid-Cabbage
405n Tumeric-Paprika
406n Beetroot-Tumeric
407n Onion skin-Spirulina
408n Cabbage-Onion skin
409n Cabbage+alkaline-Tumeric
410n Beetroot-Surprise
411n Beetroot-Paprika
412n Cabbage-Spirulina




SZÍNÁTMENET // SIDE TRANSITION
203 Paprika
204 Beetroot
205 Cabbage + acid
206 Cabbage
207 Cabbage + alkaline
208 Spirulina + Kelp
209 Spirulina
210 Onion skin
211 Dark spirulina
212
207 Káposzta + lúg
208 Spirulina + Kelp
209 Spirulina
210 Hagymahéj
211 Sötét spirulina
212 Meglepetés


Effekt
Effect
Sustastic Effects
Sustastic Effects

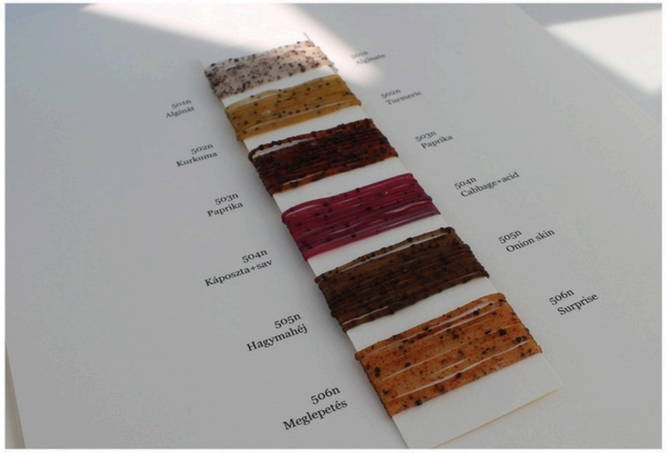

ÁLLATSZŐR // ANIMAL FIBERS


TELÍTETTSÉG // SATURATION

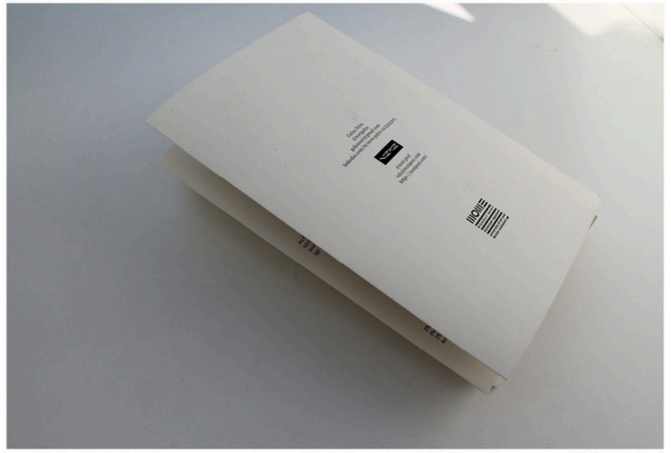

MEGGYÁRNYÉKOT // SEER TRANSITION
212
211 Dark spirulina
210 Onion skin
209 Spirulina
208 Spirulina + kelp
207 Cabbage + alkaline
206 Cabbage
Spirulina + kelp
Kurkuma + sav
Kurkuma
Hagymahéj
Spirulina
Sötét spirulina
Meglepetés




311k
310k Hagymahéj ezüst
309k Spirulina ezüst
308k Spirulina + kelp arany
307k Káposzta + lúg ezüst
306k Spirulina + kelp gold
305n Spirulina silver
304n Onion skin silver
303n Dark Spirulina gold
302n Surprise silver


501n Alginát
502n Kurkuma
503n Paprika
504n Káposzta+sav
505n Hagymahéj
506n Meglepetés
507n Cabbage
509n Turmeric
503n Paprika
504n Cabbage+acid
505n Onion skin
506n Surprise


601 Káposzta-Hagymahéj(cseresznyeszín)
602 Meglepetés-Spirulina+Kelp
603 Káposzta-Alginát
604 Káposzta+sav-Meglepetés
605 Kurkuma-Sötét spirulina
606 Káposzta+lúg-Hagymahéj
601 Cabbage-Onion skin (Cherry)
602 Surprise-Spirulina+Kelp
603 Cabbage-Alginate
604 Cabbage+acid-Surprise
605 Tumeric-Dark Spirulina
606 Cabbage+alkaline-Onion skin




CSILLÁM // GLITTER
3015
Aligátor
arany
3016
Kurkuma
ezüst
3038
Paprika
arany
3048
Cikla
ezüst
3058
Káposzta + sárg
arany
3068
Káposzta
arany
3078
Káposzta + lila
ezüst
3088
Spirulina + Kelp
arany
3098
Spirulina
ezüst
3104
Hagymahéj
ezüst
311k
Sötét spirulina
arany
312k
Meglepetés
ezüst

ONGO ING RESEARCH DEVELOPEM ENTS

