

earth colors



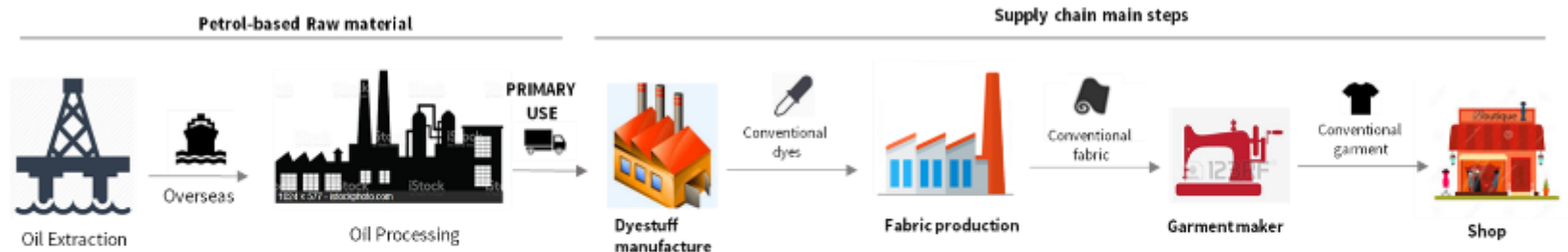
**the petro-chemical industry is the source or raw material for most dyestuff and chemicals used in clothing and textiles.
at ARCHROMA – we would like to challenge that status quo ...**



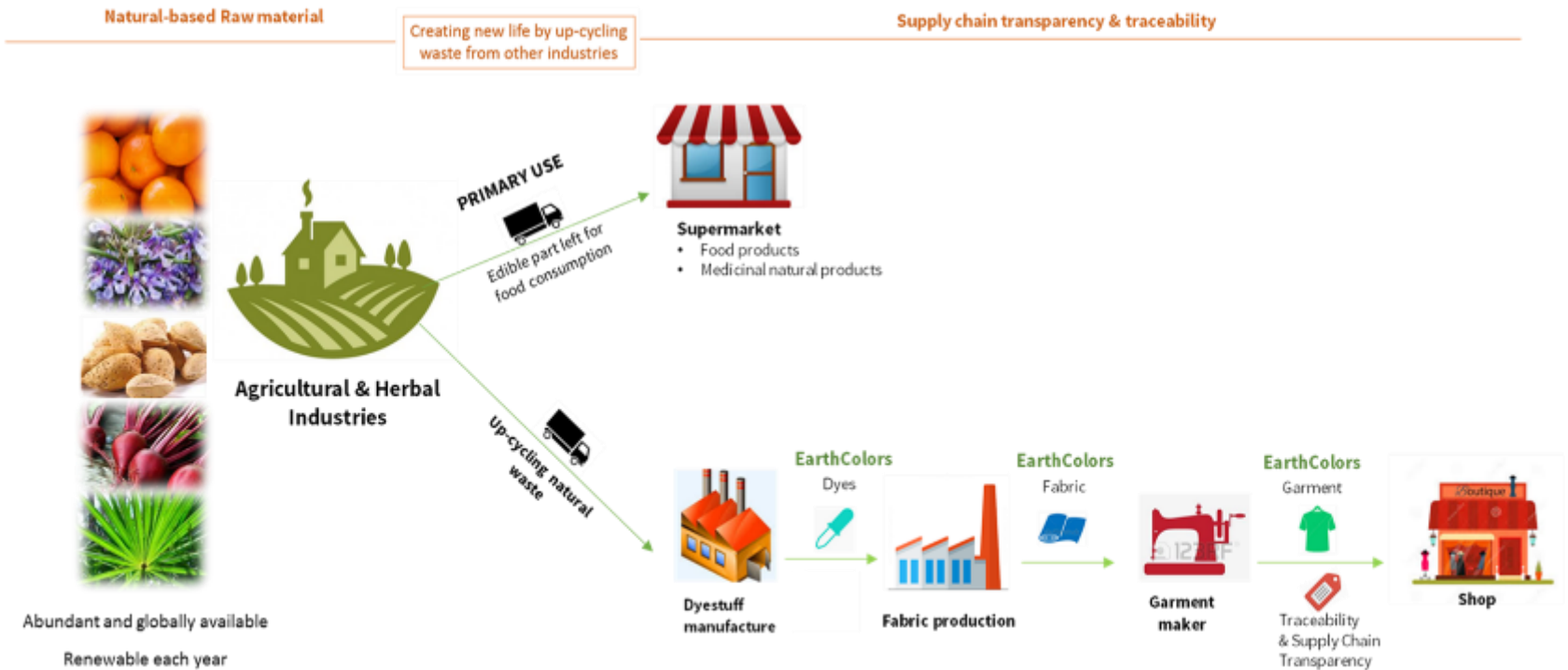
introducing Archroma's EARTHCOLORS
Where the nature and the technology meet

Video Earthcolors

Conventional dyes



EarthColors technology



our 2 pillar approach

1. RAW MATERIAL

- Derived from agricultural crop waste
- No competition with land used for food production
- Renewable each year
- Abundant and globally available
- Suitable for cellulosic fibers
- Performance comparable to existing dyes
- Patent pending technology

2. TRACEABILITY / VERIFICATION

- Minimize risk of fraud
- Supply chain transparency
- Verify use of EARTHCOLOR dyes
- Unique encoded NFC tags
- Data accessible via NFC enabled smartphone or QR code
- Further marketing possibilities ...

EARTHCOLORS – traceable from nature to fashion

Transformed natural waste-based colourants



What's the origin of current Earthcolors dyes?

DIRESUL® EARTH-OAK: manufactured in Group Archroma site in Castellbisbal (Barcelona) using **100% of ALMOND SHELLS** from agriculture industry in Spain.

DIRESUL® EARTH-MAPLE: manufactured in Group Archroma site in Castellbisbal (Barcelona) using **100% of ROSEMARY waste** from herbal industry in Spain.

DIRESUL® EARTH-SAND: manufactured in Group Archroma site in Castellbisbal (Barcelona) using **90% of BITTER ORANGE residues** from herbal industry in Spain along with 10% oil-based Archroma conventional raw materials.

DIRESUL® EARTH-CLAY: manufactured in Group Archroma site in Castellbisbal (Barcelona) using **90% of BEET residues** from agriculture industry in Spain along with 10% oil-based Archroma conventional raw materials.

DIRESUL® EARTH-FOREST: manufactured in Group Archroma site in Castellbisbal (Barcelona) using **90% of SAW PALMETTO residues** from herbal industry in Spain along with 10% oil-based Archroma conventional raw materials.

DIRESUL® EARTH-STONE: manufactured in Group Archroma site in Castellbisbal (Barcelona) using **70% of SAW PALMETTO residues** from herbal industry in Spain along with 30% oil-based Archroma conventional raw materials

the story behind
EARTH-OAK



derived from the shells (or endocarp) of the almond (*Prunus dulcis*) nut, where only the non-edible part that the food industry leaves behind is used

the story behind
EARTH-MAPLE

DIRESL
EARTH-MAPLE



derived from the waste material of the medicinal Rosemary (*Rosmarinus officinalis*) plant, known for its medicinal value, only the part that the pharmaceutical industry leave behind is used

the story behind
**EARTH-FOREST &
EARTH-STONE**

**DIRESUL
EARTH-FOREST**



**DIRESUL
EARTH-STONE**



derived from the waste material of saw palmetto (*serenoa repens*) fruit, a plant known for its medicinal value, only the part that the pharmaceutical industry leave behind is used

the story behind
EARTH-CLAY

DIRESUL
EARTH-CLAY



derived from the waste material of local beet (*beta vulgaris*), also known as beetroot - only the part that the pharmaceutical industry leave behind is used

the story behind
EARTH-SAND

DIRESUL
EARTH-SAND



derived from the waste material of bitter orange (*Citrus maxima & reticulata*), also known as Seville orange - only the part that the pharmaceutical industry leave behind is used

EARTHCOLORS

BY ARCHROMA

DYE
COTTON
WITH
COTTON

ARCHROMA
COLORS



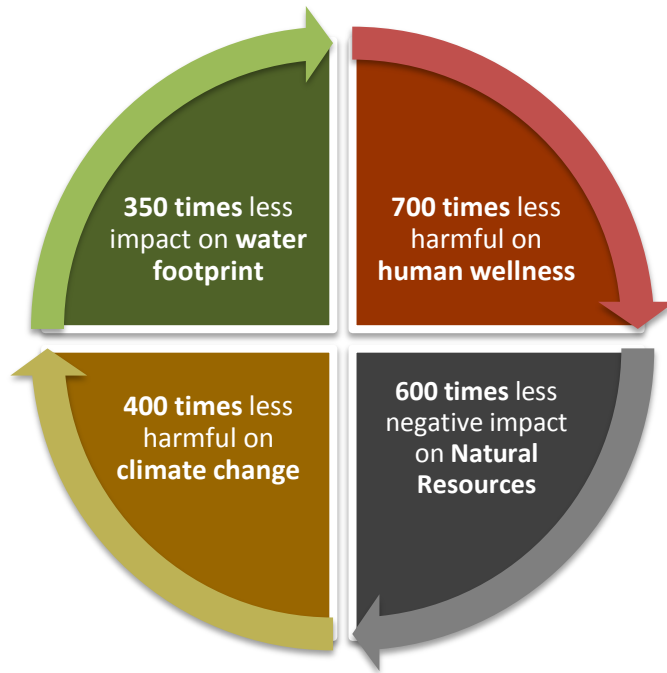
introducing *a new story* ...
an **EARTH COLOR** from cotton waste



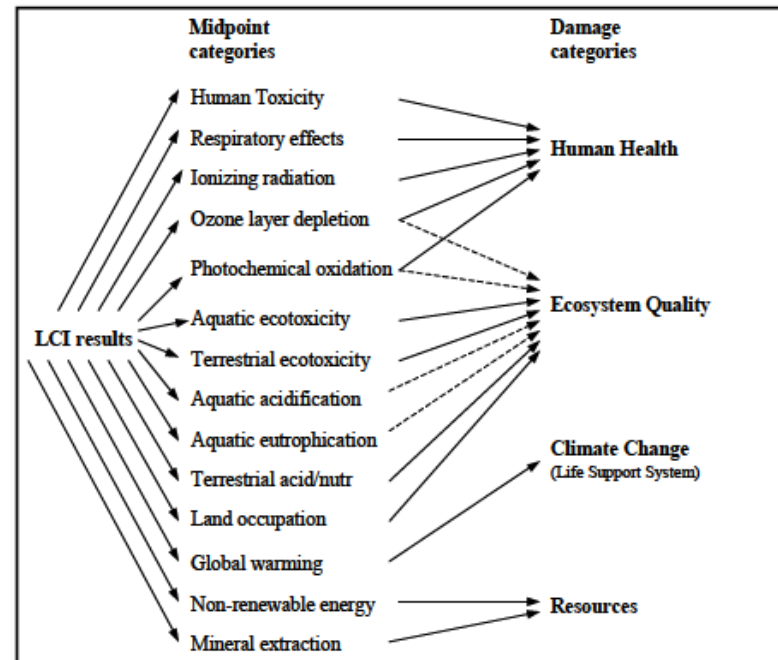
life cycle assessment & traceability

EARTHCOLORS – traceable from nature to fashion

better for the environment ... better for our wellbeing



*Based on Comparative Life Cycle Assessment (**LCA**) and water footprint analysis of an Archroma Sulfur dye (oil based dye) vs. an Archroma Earthcolor dye (natural waste-based dye)



EARTHCOLORS – traceable from nature to fashion

High-performance colors synthesized from nature : 7 dyestuffs for warm ternary shades





EARTHCOLORS – traceable from nature to fashion

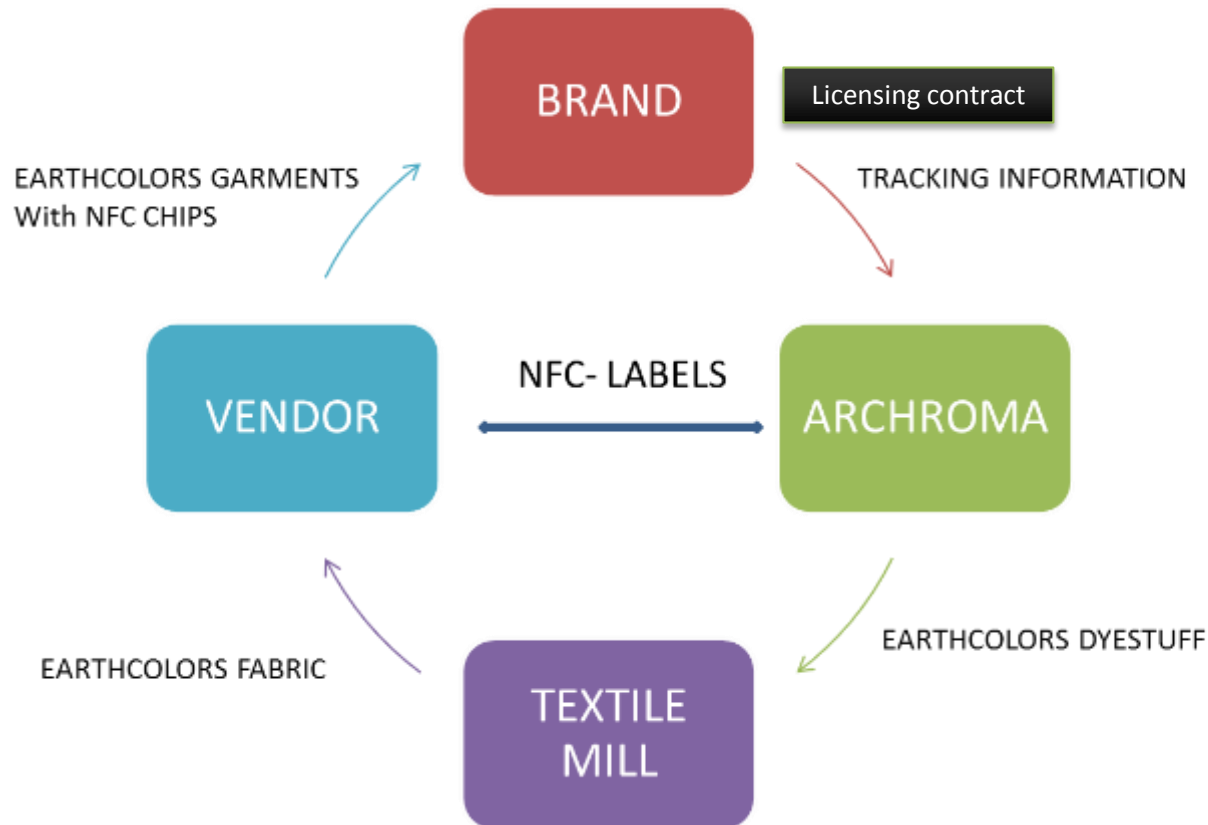
Traceability & garment authentication with NFC chip technology or QR code



www.earthcolors.archroma.com

EARTHCOLORS – traceable from nature to fashion

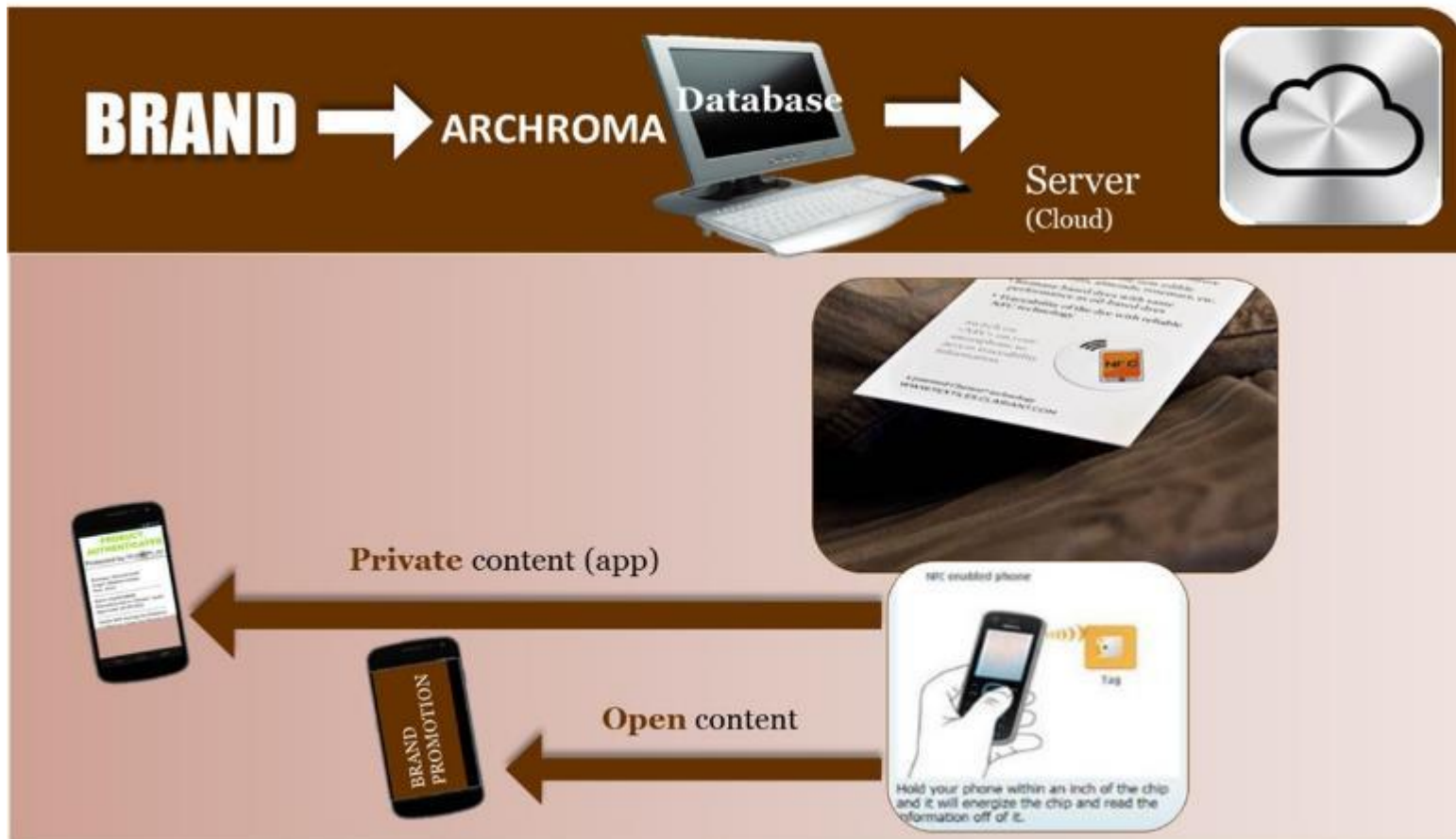
SUPPLY-CHAIN TRANSPARENCY





EARTHCOLORS – traceable from nature to fashion

NFC model explained



EARTHCOLORS – traceable from nature to fashion

Earthcolors Database

Orders - Data Entry - Orders - v 1.0.4.0

Start Administration Progression

Client Permissions Confectioners Mill Dyeing NFC User Page Reader Orders

Tools: Data Entry Tools Mill Tools Dyeing Tools NFC Tools Page Reader Tools Orders Tools

Orders - v1.0.4.0

Home Menu Save View

Export Orders

ENTER SEARCH CRITERIA...

Find Clear Add Order

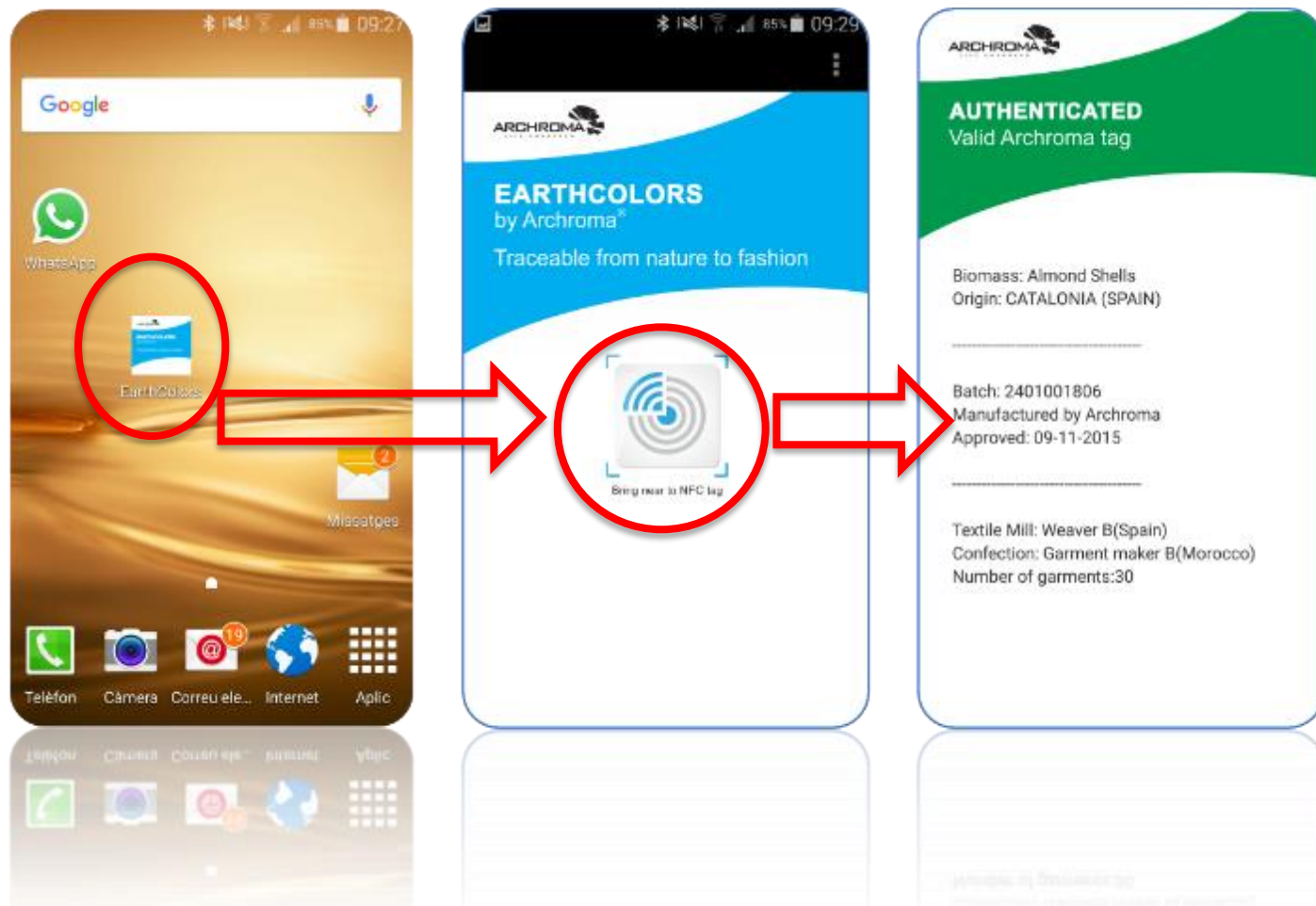
Display orders should here in group by this column

Order ID	Client ID	Client Name	Reference	Archroma ID	Fabric	Weight	Name	Country	Material	Total Weight	Dyeing Type	%	Dyeing	Origin	Batch 1	kg Dyestuff	Dyeing Type	%	Dyeing	Origin	Batch 2
DE0001	CL0001	CL001	1	3000000	Pharmacia	1.5	NE100	Spain	100%	40	Direct Dye	100%	Direct Dye	NE1000000	100%	100%	Direct Dye	100%	Direct Dye	NE1000000	
DE0002	CL0002	CL002	1	3000000	Cotton v...	1.5	NE100	Spain	100%	20	Direct Dye	100%	Direct Dye	NE1000000	100%	100%	Direct Dye	100%	Direct Dye	NE1000000	

Report: Orders - v1.0.4.0

EARTHCOLORS – traceable from nature to fashion

Earthcolors App



A person is sitting on a wooden floor, wearing a light beige button-down shirt, tan trousers, and brown sneakers with white laces. They are holding a pair of sunglasses in their hands, which have dark nail polish. A brown leather bag is next to them. The text "earth color examples" is overlaid in the center.

earth color examples

EARTHCOLORS – Application Process

Application Segment	Machinery	Suitability	Fabric Segment	Garment Segment
Continuous piece dyeing	Pad-Steam, Pad-Ox	Good	Woven fabric	Pants, Shorts, Jackets, Shirts, etc.
Exhaustion piece dyeing	<ul style="list-style-type: none"> • Jigger • Jet 	<ul style="list-style-type: none"> • Medium • Low 	<ul style="list-style-type: none"> • Woven • knitted fabric 	Pants, Shorts, Jackets, Shirts, /Knits
Continuous yarn dyeing	Rope, Slasher, Pad/Sizing	Good	Denim fabric	Jeans, Shirts
Exhaustion yarn dyeing	Package	Low	Knitted fabric	T-Shirts, knitted garments
Exhaustion garment dyeing	Closed atmospheric machines, Nitrogen	Good	Woven and knitted fabric	Pants, Shorts, T-shirts, Shirts, etc.



patagonia®



CALIDA
BODYWEAR



Kathmandu®



**G-STAR
RAW**



Diresul® EARTH-FOREST *dyed on yarn in denim application (warp dyeing)*

*laser, local scraping, grinding and tie wash on the **EARTH COLOR** garment*



**Diresul® EARTH-
OAK** *dyed on yarn in
denim application
(warp dyeing)*

*local scraping, enzyme
and stone wash on the
EARTH COLOR garment*



**Diresul® EARTH-
OAK** on yarn in denim
application (warp
dyeing)

grinding, enzyme and
stone wash on the **EARTH
COLOR** garment



shirt dyed with
**Diresul® EARTH-
FOREST** *in fabric form*
& washed with enzymes.



jeans dyed with
Diresul® EARTH-
STONE *washed*
with enzymes.





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