

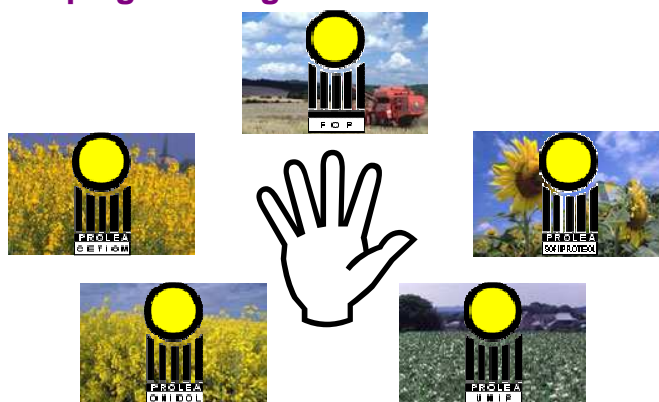
Les ressources renouvelables ont depuis très longtemps été utilisées pour servir les besoins des populations. Que ce soit pour se nourrir, bien évidemment, mais aussi pour se loger, se chauffer, se vêtir et bien d'autres fonctions. Les plantes oléagineuses et protéagineuses, colza, tournesol et pois en tête, ont été et sont utilisées pour servir ces besoins. Le développement croissant des utilisations possibles de ces ressources végétales est au coeur de la mission de Sofiprotéol, organisme financier de la Filière Française des Huiles et Protéines Végétales.



Prolea

S O F I P R O T E O L
Etablissement Financier de la Filière Française des Huiles et Protéines Végétales

PROLEA: The French Oil and Protein Crops global organisation



FOP French Federation of Oil and Protein crops

150 000 farmers

Main activities

- Defends farmers interests at French, European and international (WTO) levels. Is member of the EOA (European organisation)
- Insure permanent trade union information through the different French organisms

- CETIOM, FOP's technical institute, promotes environmentally friendly crops production practices
- SOFIPROTEOL, FOP's financial institution, insure the economical coherence upstream and downstream



CETIOM
Oil crops Inter-professional Technical Centre

Crops studied (Rape, sunflower, soy, flax)
 100 employees
 Major activities
 Partner of oil crops farmers and inter-professional organisations, prepares the future technical innovations
 Improve the competitiveness of oil based culture
 In the field, organised around a network of expert close to production areas. Maintains close relationship with industrials of agrochemical business and seeding



ONIDOL and UNIP
Inter-professional organisation of oil crops and protein crops

Represent the major professional associations and federations concerned by the production, the harvesting, the commercialisation and use of oil based products
 Major activities
 Coordination of common interest background R&D programmes
 Participates to the economical organisation of the production (rape and sunflower and protein crop markets)
 Was the starting point of the Diester development and other non food based development for oil production



Sofiprotéol
Managing the industrial portfolio

S O F I P R O T E O L
 Etablissement Financier de la Filière Française des Huiles et Protéines Végétales

SOFIPROTEOL
Financial institution of the oil and protein based organisation

Created in 1983
 Major activities
 Management of the industrial portfolio through organic development or external acquisitions in the food and non-food sectors
 Management of investment funds
 FEDOP: industrial investments
 seeds, biotechnology, harvesting and transformation, animal feed
 FASO: R&D and promotional investments
 Management of financial activities
 Optimisation Sofiprotéol financial base

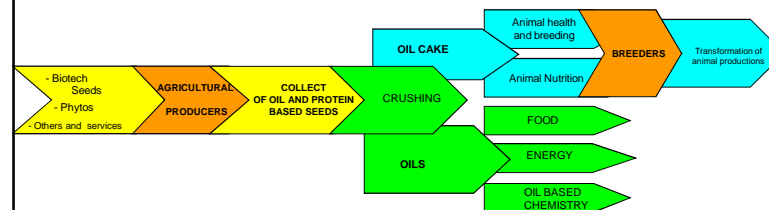


SOFIPROTEOL History

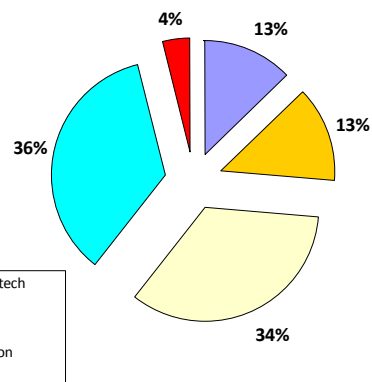
- 1983: SOFIPROTEOL is founded
- 1984: Creation of SAIPOL (oil seed crushing)
- 1986: First structured supply agreements with oilseed coops
- 1987: Creation of industrial activities, investment in ROBBE
- 1993: DIESTER® brand is born, first biodiesel plant in Compiègne
- 1995: Coops take minority interest in DIESTER INDUSTRIE
- 1996: Creation of NOVANCE
- 2003: Acquisition of LESIEUR
- 2003: BUNGE GROUP takes minority interest in SAIPOL
- 2004: LESIEUR acquires PUGET
- 2005: Creation of DIESTER INDUSTRIE INTERNATIONAL
- 2007: Majority stake in animal nutrition group GLON
- 2008: LESIEUR acquires GENERALE CONDIMENTAIRE



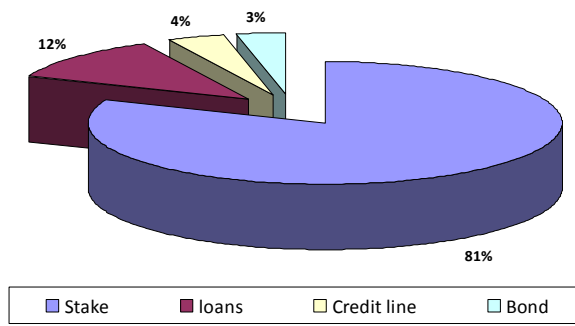
SOFIPROTEOL scope of investment : the value chain of oil and protein



SOFIPROTEOL Sectors of Investment



SOFIPROTEOL Financial investments



SOFIPROTEOL

Actual value of funds **1300 M€**

Including Minority stakes
Majority stakes

Animal Nutrition

SOFIAL

N°1 French animal nutrition
(Sanders)
Eggs, poultry and pork meat

Oil industry

SOPROL

N°1 French crushing industry (Saipol)
N°1 French food oil (Lesieur)
N°1 European biofuels (Diester)

CA 2008 : **1800 M€**

Employees 3500

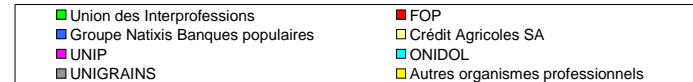
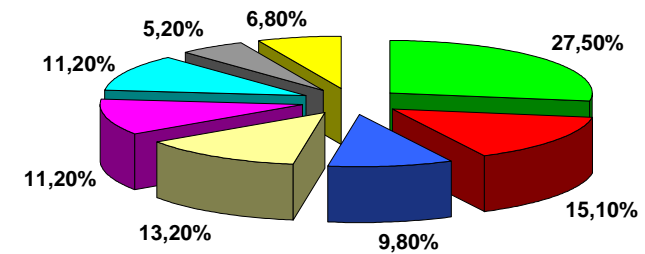
CA 2008 : **4 000 M€**

Employees : 1600

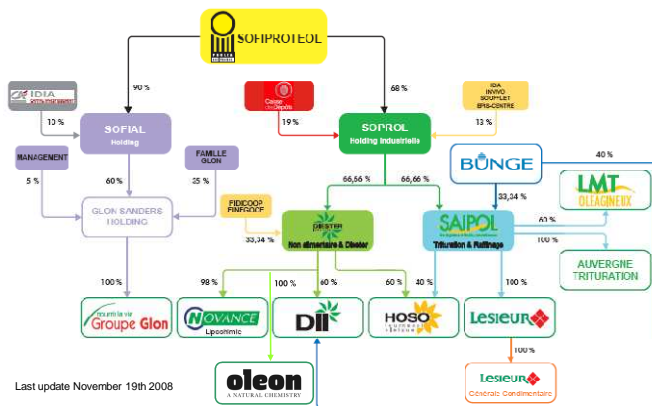
(Oléon not included)



SOFIPROTEOL Shareholding



Organisation Chart



SOPROL The transformation of oil based products

16 Industrial sites in Europe

France: 11
Germany: 2
Austria: 1
Italy: 2

European major actor in the transformation of oil based products

Production Capacities:

Seeds (Crushing): 4,1 Mt/y rape and sunflower seeds
Oils (Refining): 2,4 Mt/y refined oil (food + energy)
Diester (Esterification): 2,8 Mt/y
Oleochemistry: 100 Kt/y (will change with Oleon acquisition)

2008 sales: 4,0 billion €

Human resources: 1600 employees (+30% in 3 years)

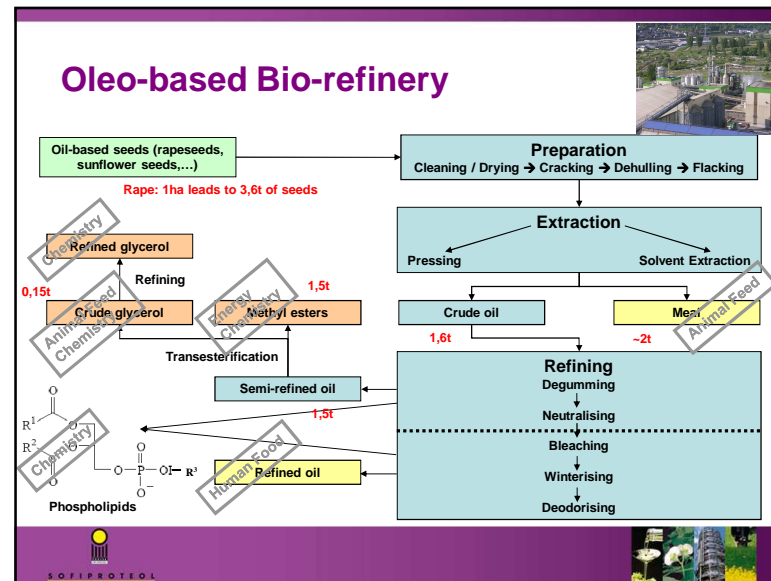




Proléa: A strong partner for vegetable based chemistry




SOFIPROTEOL
Etablissement Financier de la Filière Française des Huiles et Protéines Végétales



Vision




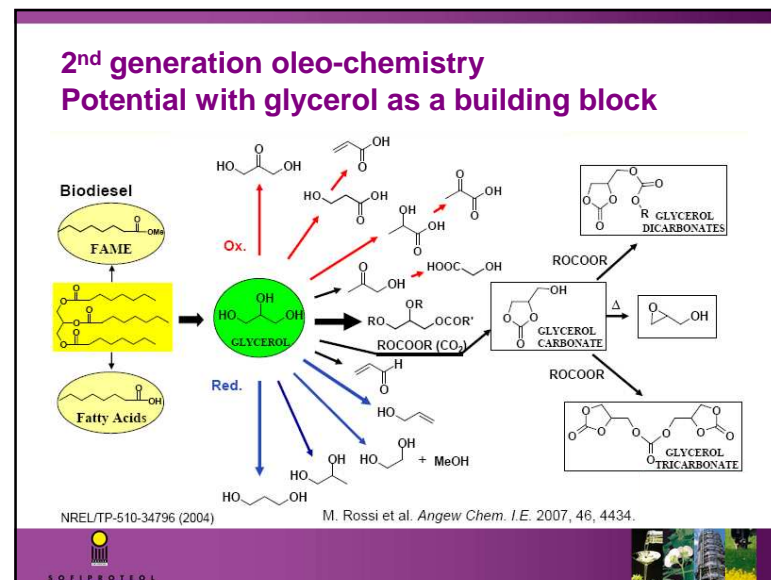
Oils at the root of a complete chemistry tree

1st Generation oleo-chemistry
Use of "first transformation" molecules
Glycerol, raw or refined
Fatty alcohols, fatty acids, fatty esters

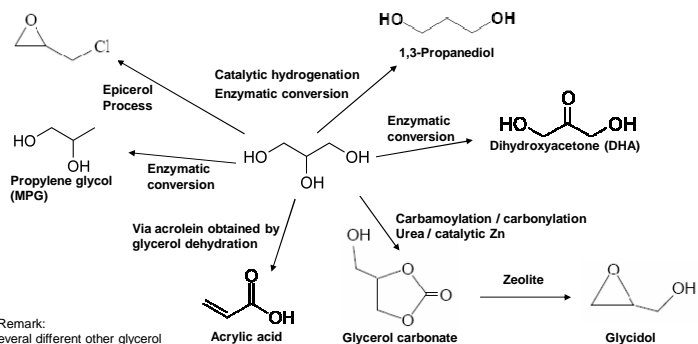
Development of more "complex" molecules
Alkyd resins
Recombined triglycerides
Glycerol esters, ethers

2nd Generation oleo-chemistry
Preparation of building blocks
From glycerol
From fatty acids, fatty esters

Second generation bioplastics
Synthesised from oleo-based building blocks
Combined oleo-based and sugar-based or with fossil based building blocks

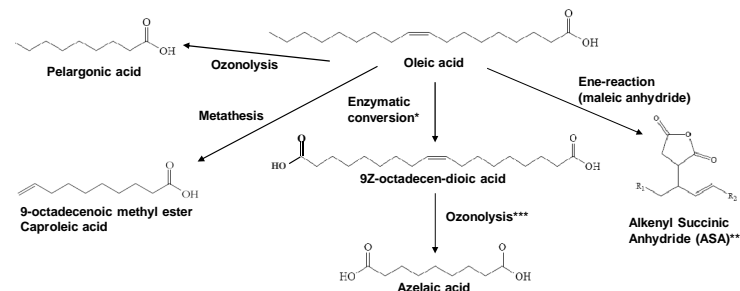
2nd generation oleo-chemistry Existing examples of glycerol-based building blocks



* Remark:
Several different other glycerol modification are potentially feasible or could be potentially developed



2nd generation oleo-chemistry Examples of fatty acid-based building blocks

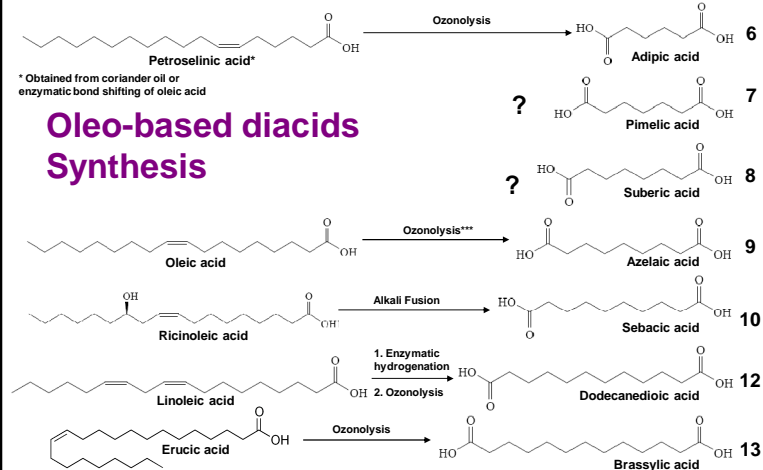


* Remark:
Several different enzymatic modification of oleic acid are potentially feasible or could be potentially developed

** Remark:
Another family of molecules, for similar types of applications, can be obtained by Diels-Alder reaction of inoleic or inolenic acid



Oleo-based diacids Synthesis



* Obtained from coriander oil or enzymatic bond shifting of oleic acid

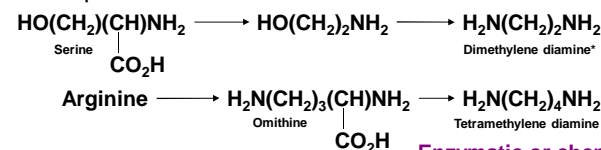


2nd generation oleo-chemistry Challenges in the synthesis of building blocks

Can we economically produce diamines from biomass-based building blocks?

Can we use amino acids as a sustainable source of nitrogen-based building blocks?

Examples:



Enzymatic or chemical process?

* Current process: From naphtha through ethylene and ethylene oxide



2nd generation oleo-chemistry

Examples of 2nd generation bio-plastics

Examples of "1st generation" bio-plastics

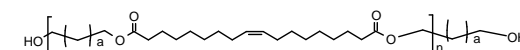
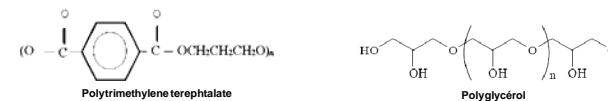
- Extracted from agro-resources
 - Polysaccharides, Protein-based polymers
- Obtained from micro-organisms
 - PLA (polylactic acid)
- Obtained through white bio-technology
 - PHA (polyhydroxy alcanoates)

"2nd generation" bio-plastics

- Co-polymers agro-based / fossil-based
 - Polytrimethylene terephthalate (PTT) from Dupont
- Agro-based homo-polymers
 - Glycerol-based polyols, glycerol polycarbonates
- Agro-based co-polymers
 - Polyesters, polyurethanes, ...



Some 2nd generation bio-plastics



Polymer obtained from polycondensation of D18:1 and aliphatic diol (ex: 1,3-PDO, C12 diol, glycerol, ...)

Remark:
The double bond can be transformed in an epoxy ring
Reticulation can then be induced

Based on diacides and diol materials, polyesters, polyamides and polyurethanes can be generated. Diol sources can either be from oil-based material, from starch based material, from biomass, ...



Proléa involvement in oil-based chemistry developments

ONIDOL

Background research for development of knowledge in the oil-based chemistry potentials

Current focus

- Preparation of vegetal based building blocks
- 2nd generation bio-plastics

FASO ("Fonds d'Aide Stratégique of Oléagineux")

Funds managed by Sofiprotéol

Involvement in application based R&D projects

Current focus

- Development of glycerol-based molecules in different market applications
- Formulation based developments



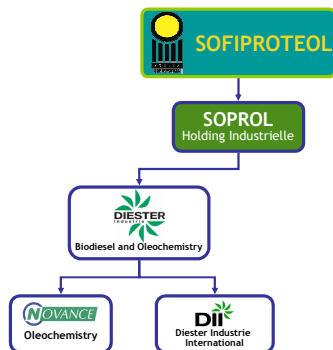
Novance

Company Overview

SOFIPROTEOL

Etablissement Financier de la Filière Française des Huiles et Protéines Végétales

Novance benefits from strong upstream integration



External environment favorable for an aggressive growth strategy

Novance's changing business environment

Strong ongoing increase in mineral oil price

Impact on chemical products

Health and environment awareness of consumers

Seeking more "green" products

Favorable legislation changes

Ban on VOC

REACH

Etc...

Growth will strongly rely on partnerships with customers

Novance's activities

Synthesis of products based on upstream integration:

Various vegetable oils

Esters

Glycerin

Formulation of intermediate as well as finished products

Glycerin refining

Plant start up mid-2008

Strong investment strategy

R&D toolbox

Fully equipped labs (Spectro, Chromato, ICP etc.)

Specific new equipment of lube business

Investing in new pilot line

Industrial toolbox

3 pilot units

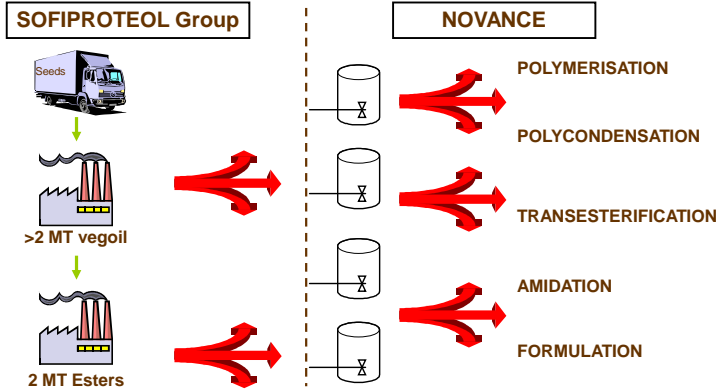
Various reactors ranging from 3 to 40 m³

Condensation column




Conditioning lines, storage tanks



Upstream integration is a clear competitive advantage



Novance technologies

Coatings Paints, Inks, Wood Treatment	Lubricants Metal working Cleaning	Crop Protection
		
<ul style="list-style-type: none"> Alkyd resins, solvent + water Vegetal based binders High solid formulations Aromatic-free, odorless resins Wood treatment and protection 	<ul style="list-style-type: none"> Biodegradable bases for industrial applications (oils, esters) Lubrication additives (complex esters, Vegetal polymers) Surfactants, emulsifiers Green lubes (Diesterlub, Ecolabel) Detergents, biodegradable solvents 	<ul style="list-style-type: none"> Biodegradable solvents Biological activators Adjuvant ACTIROB B (certified NF) Emulsifiers



Thank you for your attention

