

TECHNICAL DATA SHEET

HYDROLYZED FOUR VEGETABLE PROTEINS **(OAT, CORN, SOY AND WHEAT)** **/ A / HGL / CA11 /**



Trade Name: HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) / A / HGL / CA11 /.

Product Code: H4PAHGLCA11.

INCI Name: AQUA, GLYCERIN, HYDROLYZED OAT PROTEIN, HYDROLYZED CORN PROTEIN, HYDROLYZED SOY PROTEIN, HYDROLYZED WHEAT PROTEIN, POTASSIUM SORBATE.

INCI Status: Conforms.

REACH Status: Low Volume Exemption.

CAS Number: 7732-18-5; 56-81-5; 151661-87-9; 100209-41-4; 68607-88-5; 94350-06-8 / 222400-28-4 / 70084-87-6; 24634-61-5/ 590-00-1.

EC Number: 231-791-2; 200-289-5; 604-812-1; 309-349-6; 271-770-5; 305-225-0 / 606-961-8 / 615-058-8; 246-376-1.

Origin: GLYCERIN: Vegetable origin.

HYDROLYZED OAT PROTEIN, HYDROLYZED CORN PROTEIN, HYDROLYZED SOY PROTEIN, HYDROLYZED WHEAT PROTEIN: Vegetable origin.

POTASSIUM SORBATE: Synthetic origin.

Processing: GMO Free. / No Ethoxylation. / No Irradiation. / No Sulphonation. / No BSE/TSE. / No CMR. / No SVHC. / No Nanomaterial. / No DEG. / No DEHP. / No Formaldehyde. / No Phthalates. /

Additives: Preservatives: Potassium sorbate. Paraben Free. / Antioxidants: None. / Other additives: None.

Solvents Used: Water and glycerin.

Appearance: Clear or slightly opalescent liquid.

Colour: Characteristic (yellowish to deep brown).

Odour: Characteristic.

Specific gravity: 1,050 - 1,300 g/cm³ (20°C approx.).

Direct pH value: 4,5 - 6,5 (20°C approx.).

Soluble/ Miscible: Water. Surfactants. Hydroalcoholic, hydroglyceric and hydroglycolic mixtures.

Ecological Information: Sustainable.

Microbial Count: **Total aerobics:** Max. 300 microorganisms / gram.

Fungi and yeasts: Max. 200 microorganisms / gram.

Pathogens: Total absence in 1 gram.

Suggested Use Levels: 2,0 – 10,0%.

Suggested Applications: Hair preparations. Skin treatment products.

Properties: Anti-irritant, repairing, biostimulant, protective, moisturizing, elasticizing, anti-wrinkle and vitalizing.

Industrial packing: 1Kg., 5Kg., 25Kg., 225Kg.

Storage conditions: It is very important to keep the product in well closed containers, away from direct sunlight at temperatures not over 15°C. In case of not having refrigerators, store the product in the coolest and free from artificial light area.

Bibliography: - Atlas Ilustrado de Plantas Medicinales y Curativas, Ed. Susaeta.

- Dumont's grosse Kräuter Enzyklopädie.

- Fitocosmeticos ALVAREZ CRUZ i BAGUE SERRANO.

- Gran enciclopedia de las plantas medicinales, BERDONCES i SERRA.

- Plantas medicinales, FONT i QUER.

- Proserpio G., Martelli A., Patri GF.; Elementi di Fitocosmeci; Ed. Sepem / Milano 1983.

- Websites.



BIOGRÜNDL, S.L.
POLÍGONO LES FALLULLES, NAVE 34 -SECTOR 2-
08620 SANT VICENÇ DELS HORTS, BARCELONA (SPAIN)
PHONE: +34 93 660 55 12 / FAX: +34 93 660 55 13
www.biogrundl.es
info@biogrundl.es

TECHNICAL DATA SHEET

OVERVIEW

Oat, corn and wheat are vegetables belonging to the Grass family that are grown because of seeds, starchy parts (meal), oily parts (germ oils) and protein parts (gluten). Soybean, on the other hand, is a plant belonging to the Legumes family from bean, is taken advantage, also, flour, oil and proteins.

In order to separate the protein part of the four seeds and adapt it to use in Cosmetology and Dermatology, BIOGRÜNDL, S.L. undergo them to a process of purification and another of hydrolysis. The first process will eliminate almost all the substances not of protein nature; with the second, a mixture of free amino acids with some oligopeptides is obtained, with an average molecular weight between 1000 and 5700 daltons. This ensures good penetrability through the skin and much greater effectiveness. This hydrolysis is carried out with papain, an enzyme of vegetable origin.

USE AND DOSAGE

The achieved objective with the combination of these four seeds has been to obtain a mixture of amino acids similar to that of animal origin; especially to milk protein or keratin. The aminogram of vegetal proteins is specified:

- ALANINE.
- ARGININE.
- ASPARTIC ACID.
- CYSTEINE.
- GLUTAMIC ACID.
- GLYCINE.
- HISTIDINE.
- ISOLEUCINE.
- LEUCINE.
- LYSINE.
- METHIONINE.
- PHENYLALANINE.
- PROLINE.
- SERINE.
- THREONINE.
- TRYPTOPHAN.
- TYROSINE.
- VALINE.



BIOGRÜNDL, S.L.
POLÍGONO LES FALLULLES, NAVE 34 -SECTOR 2-
08620 SANT VICENÇ DELS HORTS, BARCELONA (SPAIN)
PHONE: +34 93 660 55 12 / FAX: +34 93 660 55 13
www.biogrundl.es
info@biogrundl.es

TECHNICAL DATA SHEET

HYDROLYZED FOUR VEGETABLE PROTEINS by BIOGRÜNDL, S.L. may be, under the exposed aminogram, a true and useful alternative to proteins of animal origin in cosmetic and dermatological formulations. It has high substantivity to skin and hair; it reduces the irritant effect of surfactants and its organoleptic characteristics, specially the smell, being much more suitable for use in cosmetics. On the other hand, it presents actions very similar to those that are attributed to animal proteins: protective, repairing and biostimulant. In terms of the exposed properties, it can be used in hair preparations, in order to modify aggressiveness and effectiveness of dyes, permanents, bleachings, masks, lotions, shampoos or conditioners. Also, in products for skin treatment, because of hydrating, elasticizing, anti-wrinkle and vitalizing actions it has.

If turbidity is observed, it is advisable to previously dissolve the product in a portion of the water provided to manufacture the final product and filter after 12-24 hours.

The recommended concentrations of use are between 2% and 10%. For very special effects the dosage can raise up to 15%.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear or slightly opalescent liquid.

Colour: Characteristic (yellowish to deep brown).

Odour: Characteristic.

Direct pH value: 4,5 - 6,5 (20°C approx.).

Specific gravity: 1,050 - 1,300 g/cm³ (20°C approx.).

Solubility in water: Fully soluble (20°C approx.).

Solubility in other solvents: Insoluble in organic solvents and lipids. Soluble in surfactants, hydroalcoholic, hydroglyceric and hydroglycolic mixtures.

Molecular weight:

- **Oat hydrolyzed proteins:** 1000-5700 Da.
- **Corn hydrolyzed proteins:** 800 Da. approx.
- **Soy hydrolyzed proteins:** 900-1100 Da.
- **Wheat hydrolyzed proteins:** 2200 Da. approx.

Heavy metals: No more than 5 mg/Kg.

Sulfated ash: No more than 0,01%.

Chlorides: No more than 0,007%.

Sulfates: No more than 0,002%.

Other information: None.

Total aerobics: Max. 300 microorganisms / gram.

Fungi and yeasts: Max. 200 microorganisms / gram.

Pathogens: Total absence in 1 gram.



BIOGRÜNDL, S.L.
POLÍGONO LES FALLULLES, NAVE 34 -SECTOR 2-
08620 SANT VICENÇ DELS HORTS, BARCELONA (SPAIN)
PHONE: +34 93 660 55 12 / FAX: +34 93 660 55 13
www.biogrundl.es
info@biogrundl.es

TECHNICAL DATA SHEET

DERMATOLOGY INNOCUOUSNESS

It was performed by the patch test (Patch test) on 10 volunteers. To this purpose, 15% HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) by BIOGRÜNDL, S.L., was added to an O/W emulsion; 0,5g. of this emulsion was poured over the patch and attached on the forearm. It is thus maintained for 24, 48 and 72 hours, after which, the given reaction was evaluated, according to the following table of values:

1. No erythema.
2. Slight erythema.
3. Well defined erythema.
4. Severe erythema.

The result was absence of erythema on the 10 volunteers.

On the recommended concentrations, the product is skin innocuous.

STORAGE CONDITIONS

It is very important to keep the product in well closed containers, away from direct sunlight at temperatures not over 15°C. In case of not having refrigerators, store the product in the coolest and free from artificial light area.

INCI DENOMINATION

AQUA, GLYCERIN, HYDROLYZED OAT PROTEIN, HYDROLYZED CORN PROTEIN, HYDROLYZED SOY PROTEIN, HYDROLYZED WHEAT PROTEIN, POTASSIUM SORBATE.

EFFECTIVENESS TEST

Assay: Double blind spot trial and subsequent cosmetic evaluation.

Assayed parameters: Protective action. Anti-wrinkle action.

N (volunteers): 30 (18 ♀ and 12 ♂).

Age (volunteers): 20 – 70 years old.

Left side part to be treated:

Placebo, 30 volunteers, suitable cosmetic base.

Right side part to be treated:

HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT)
2%, 15 volunteers, suitable cosmetic base.

Right side part to be treated:

HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT)
5%, 15 volunteers, suitable cosmetic base.



BIOGRÜNDL, S.L.
 POLÍGONO LES FALLULLES, NAVE 34 -SECTOR 2-
 08620 SANT VICENÇ DELS HORTS, BARCELONA (SPAIN)
 PHONE: +34 93 660 55 12 / FAX: +34 93 660 55 13
 www.biogrundl.es
 info@biogrundl.es

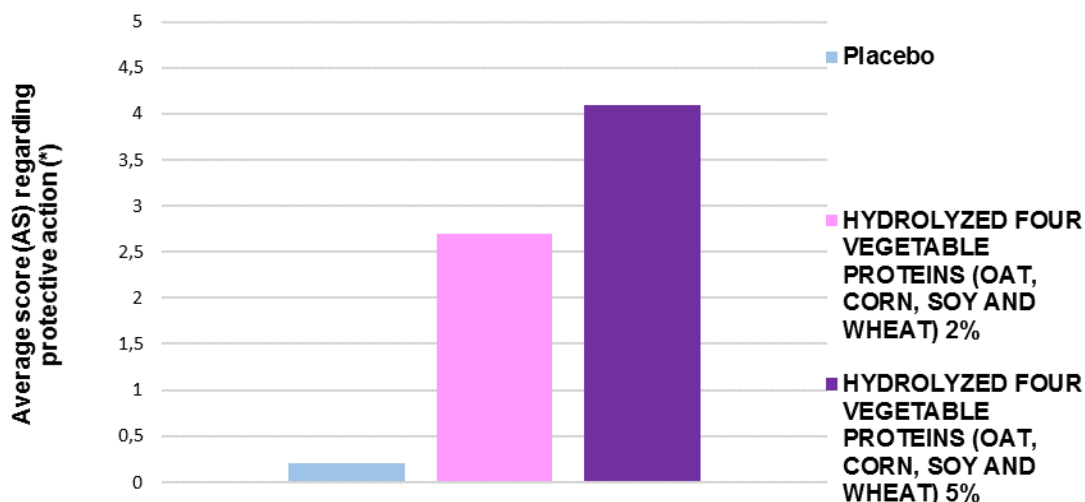
TECHNICAL DATA SHEET

Assayed parameters:

	Assay	N (volunteers)	Age (volunteers)	Placebo	HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 2%	HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 5%	Assay performed (Days)	Results measured (Days)
Protective action	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 18 ♀ and 12 ♂	20 – 70	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 1
Anti-wrinkle action	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 18 ♀ and 12 ♂	30 – 70	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 1

TECHNICAL DATA SHEET

SKIN CONDITION EVALUATION AFTER 30 DAYS



(*) Protective action was evaluated by direct observation of protection to damage produced in skin volunteers (unfavorable environment).

Total number of days in which the assay was performed (treatment was applied):
 D = 30 days (every day during the effectiveness test).

Total number of days in which the results were measured:
 D' = 1 day (effectiveness test last day).

Average score:

Worst result: Zero limit value is assigned.

Best result: Five limit value is assigned.

Score is assigned to obtained results between the two limit values.

Average computation for each obtained results group is done:

Placebo, 2% HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) by BIOGRÜNDL, S.L., 5% HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) by BIOGRÜNDL, S.L..

Results meaning:

AS rank between 0 – 1: No significant changes.

AS rank between 1 – 2: Slight improvement regarding placebo.

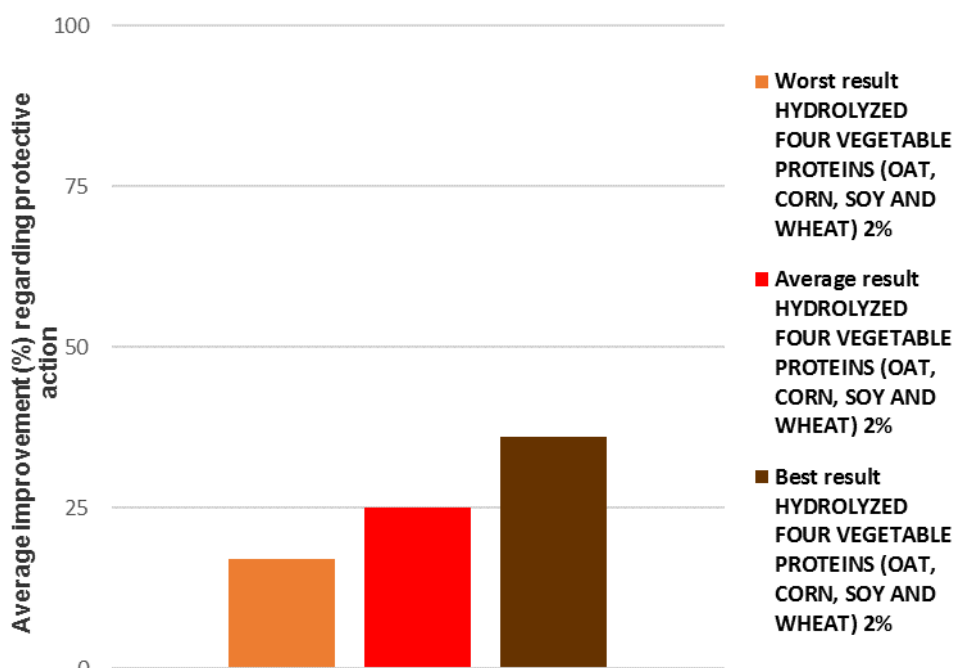
AS rank between 2 – 3: Appreciable improvement regarding placebo.

AS rank between 3 – 4: Great improvement regarding placebo.

AS rank between 4 – 5: Excellent cosmetic result.

TECHNICAL DATA SHEET

HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 2%



Results:

Worst result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 2%: **17%**.

Average result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 2%: **25%**.

Best result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 2%: **36%**.

Results meaning:

AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

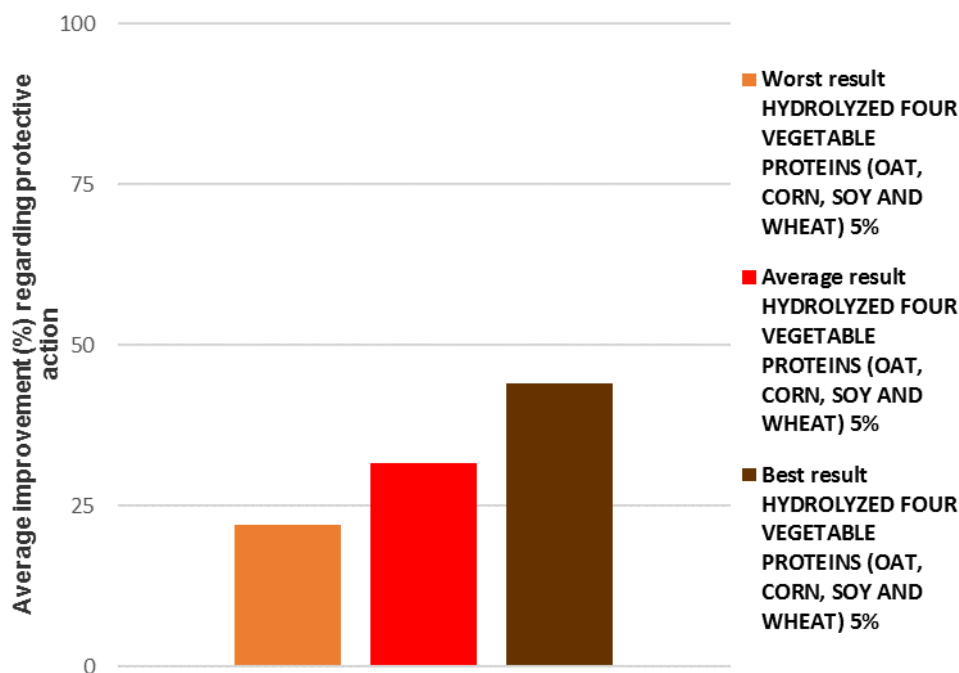
AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

AI rank between > 81%: Excellent cosmetic result.

TECHNICAL DATA SHEET

HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 5%



Results:

Worst result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 5%: 22%.

Average result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 5%: 31,5%.

Best result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 5%: 44%.

Results meaning:

AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

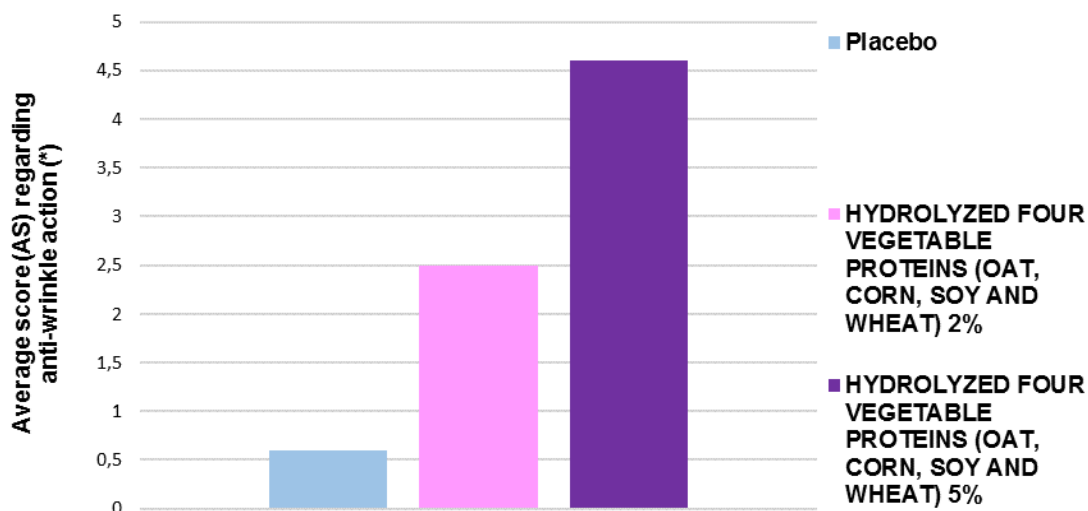
AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

AI rank between > 81%: Excellent cosmetic result.

TECHNICAL DATA SHEET

SKIN CONDITION EVALUATION AFTER 30 DAYS



(*) Anti-wrinkle action was determined by augmented observation of depth and length of furrows, wrinkles and expression lines from volunteers.

Total number of days in which the assay was performed (treatment was applied):
D = 30 days (every day during the effectiveness test).

Total number of days in which the results were measured:
D' = 1 day (effectiveness test last day).

Average score:

Worst result: Zero limit value is assigned.

Best result: Five limit value is assigned.

Score is assigned to obtained results between the two limit values.

Average computation for each obtained results group is done:

Placebo, 2% HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) by BIOGRÜNDL, S.L., 5% HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) by BIOGRÜNDL, S.L..

Results meaning:

AS rank between 0 – 1: No significant changes.

AS rank between 1 – 2: Slight improvement regarding placebo.

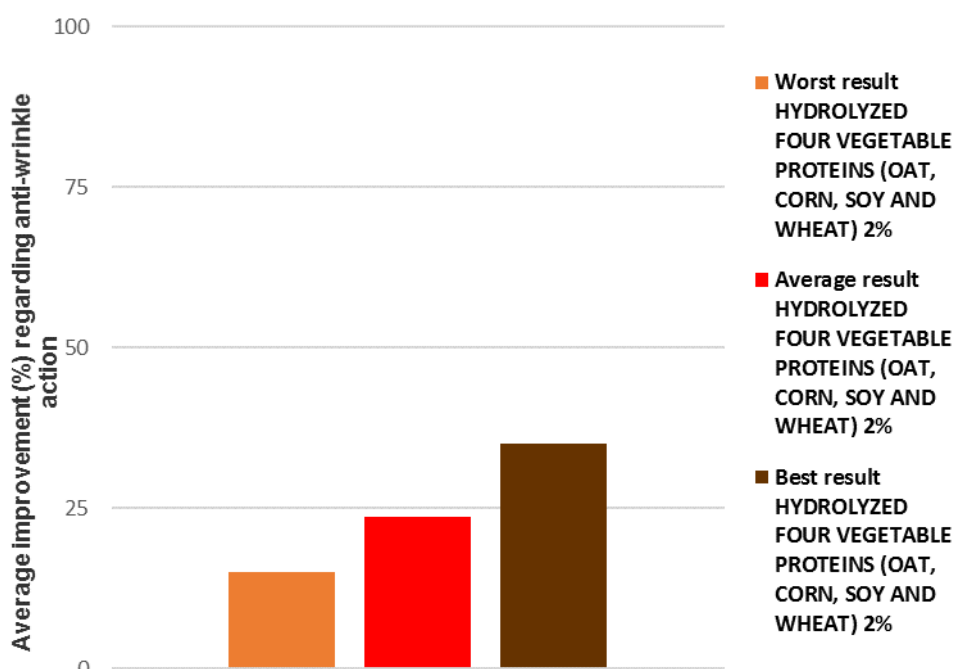
AS rank between 2 – 3: Appreciable improvement regarding placebo.

AS rank between 3 – 4: Great improvement regarding placebo.

AS rank between 4 – 5: Excellent cosmetic result.

TECHNICAL DATA SHEET

HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 2%



Results:

Worst result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 2%: **15%**.

Average result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 2%: **23,5%**.

Best result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 2%: **35%**.

Results meaning:

AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

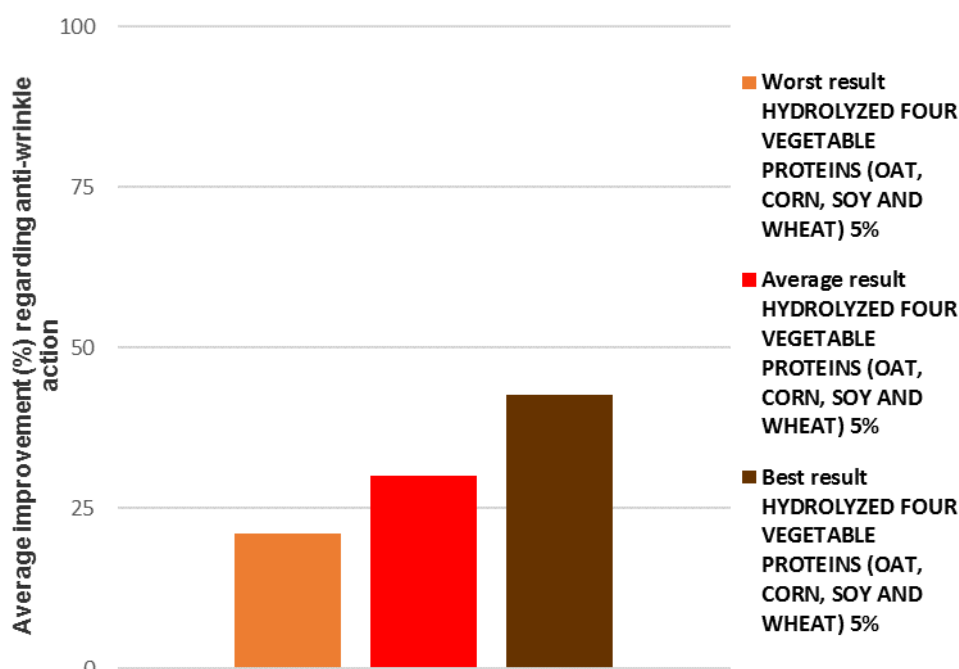
AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

AI rank between > 81%: Excellent cosmetic result.

TECHNICAL DATA SHEET

HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 5%



Results:

Worst result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 5%: 21%.

Average result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 5%: 30%.

Best result HYDROLYZED FOUR VEGETABLE PROTEINS (OAT, CORN, SOY AND WHEAT) 5%: 42,5%.

Results meaning:

AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

AI rank between > 81%: Excellent cosmetic result.