

# Improving Skin Appearance of Indonesian Women using Soft Focus Effect in Powder Foundation Formulation

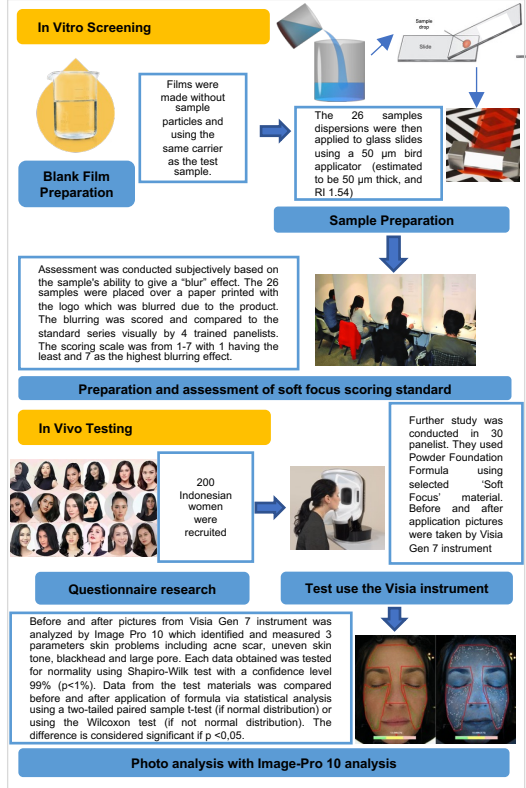
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## Introduction:

Indonesian women pay a lot of attention to their appearances and use high coverage powder foundations to hide skin imperfections such as hyper pigmented spots, lines and wrinkles, scarring, blemishes, etc. "Soft Focus" powder foundation is designed to hide skin imperfections without looking unnatural. It contains several raw materials to acquire harmony between opacity and transmittance resulting in blurring the visibility of imperfections.

The objective of this study was to achieve a blurring on skin termed 'soft focus' which indicates improvement of facial skin appearance.

## Materials & Methods:



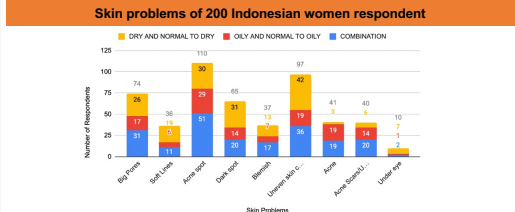
## Results & Discussion:

**In Vitro Screening**

Formula	INCI Name	%	Soft Focus Scoring
A	Talc, PCA Dimethicone	45	6
B	Titanium Dioxide, Silica	45	7
C	Nylos-12	45	7
D	Silica, Methicone	18*	3,5
E	Titanium Dioxide, Aluminum Hydroxide, Triethoxycetyltrimellitate	25**	7

\*Concentration of formula D was not increased to 45%, because there had been lumps in mixture causing an uneven film layer  
\*\*Concentration of formula E was not increased to 45%, because in 25% concentrated already reach 7 score

Based on figure 1, formula B, C, and E covered the grading pattern on the object glass perfectly so that they were given a score of 7. Formula A and D produced a moderate but still higher blurring effect than other formulas. These two formulas were used to acquire natural finish. So these five formulas were continued to the in vivo testing stage.



Perception of facial concerns was reported by 200 Indonesian women. The most common facial problems among respondents are **acne spots, uneven skin, and large pores**. Based on this result, further study was conducted in 30 subjects, using inclusion and exclusion criteria, to evaluate the effect of test powder on improving skin appearance of people with said common facial problems.

**In Vivo Testing and Statistical Analysis**

The results of image analysis were analyzed using SPSS (IBM® SPSS® Statistics version 28). Based on the results, the use of powder foundation was able to even out facial skin color up to 17.68% better and reduce the number of uneven facial skin areas up to 12.60% from baseline. The appearance of pores and blackheads were reduced by up to 15.51% and the number of facial pores and blackheads were reduced 5.62% compared to baseline. The use of powder foundation was effective in disguising the appearance of acne and acne scars on the face by 44.08% and reduce the number of pimples and acne scars and blackheads were reduced by 42.25% from baseline.

Parameter	Before		After		P-value*	Delta (%)	
	Mean (SD)	SD	Mean (SD)	SD			
Skin Evens	Sum	366987,90	183012,91	302096,90	166516,44	0,002	-17,68
	Number of (sigma)	8,20	1,65	7,17	2,21	0,004	-12,60
Big Pores	Sum	94875,87	47101,23	79487,23	38990,07	0,000	-15,51
	Number of (sigma)	2099,77	656,69	1944,00	644,10	0,000	-5,62
Acne Scars	Sum	11174,40	9387,53	6248,57	6405,53	0,000	-44,08
	Number of (sigma)	14,20	11,62	8,20	8,42	0,000	-42,25

\*p-value < 0.05 statistically significant

## Conclusions:

Based on the confines and conditions of this study, powder formulations with five soft focus materials can improve facial skin appearance for Indonesian women. It was able to even out facial skin color, disguise big pores, blackhead, pimple, and acne scar, and also reduce the number of that skin problems statistically significant. This method can be a platform for evaluating soft focus effects on complexion makeup products.

## References:

[1] Little, AC, Jones, BC, DeBruine, LM (2011) Facial attractiveness: evolutionary based research. *Biological Sciences*. 366(1571): 1638-1659.  
 [2] Ganceviciene, R, Liakou, AI, Theodoridis, A, Makrantonaki, E, Zouboulis, CC (2012) Skin anti-aging strategies. *Dermato-endocrinology*. 4(3): 308-319.  
 [3] Prianti, D (2013) Indonesian female beauty concept: Does it take into account the traditional values?. In *The Asian Conference on Media and Mass Communication 2013*, Osaka, Japan.  
 [4] Fares, K, Hallit, S, Haddad, C, El Akel, MG (2019) Relationship between cosmetics use, self-esteem, and self-perceived attractiveness among lebanese women. *Journal of Cosmetic Science*. 1(70): 1-10.  
 [5] Mohiuddin, AK (2019) Cosmetics in use: a pharmacological review. *European Journal of Biology and Medical Science Research*. 7(4): 22-64.  
 [6] Igarashi, T, Nishino, K, Nayyar, SK (2007) The appearance of human skin: a survey. *Foundations and Trends in Computer Graphics and Vision*. 3(1): 1-95.  
 [7] Vresek, IM, Ozgur, O, Nakra, T (2016) Intraorbital dark circles: a review of the pathogenesis, evaluation and treatment. *Journal of Cutaneous and Aesthetic Surgery*. 9(2): 65-72.  
 [8] Yoon, J, Lee, JH, Lee, JB, Lee, JH (2020) Highly scattering hierarchical porous polymer microspheres with a high-refractive index inorganic surface for a soft-focus effect. *Polymers (Basel)*. 12(10): 1-13.

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[9] Choi, SK, Yang, YJ, Kim, KM, Choi, J, Choi, YJ, Han, SH (2012) A study of the optical properties of cosmetics measured by polarized light goniophotometry. *Journal of the Optical Society of Korea*. 16(1): 36-41.  
 [10] Mohiuddin, AK (2019) An extensive review of face powder formulation considerations. *J Dermatology and Dermatitis*. 4(3): 1-18.  
 [11] Habschied, K, Krstanovic, V, Mastanjevic, K (2022) Beer quality evaluation—a sensory aspect. *Beverages*. 8(1): 15.  
 [12] Han, X, Shen, J, Yin, P, Hu, S, Bi, D (2014) Influences of refractive index on forward light scattering. *Optical Communications*. 316:198-205.  
 [13] Auger, J, McLoughlin, D (2014) Theoretical analysis of light scattering properties of encapsulated rutile titanium dioxide pigments in dependent light scattering regime. *Progress in Organic Coatings*. 77(11): 1619-1628.  
 [14] Kosbach, LP, Sims, ES (2005) SOFT-focus cosmetic composition publication classification comprising fumed alumina. United States Patent Application Publication [15] Dingley, AG, Fair, MJ, Glynn, JR, Sandstrom, GA (2008) Optical blurring pigment composition suitable for use in cosmetics. Taiwan Patent Application Publication [16] Jiang, X, Kong, Y, Zhao, Z, Shen, X (2020) Spherical amine grafted silica aerogels for CO2 capture. *RSC Adv*. 10: 25911-25917  
 [17] Vescovini, A, Balen, L, Scazzosi, R, da Silva, AAX, Amico, SC, Giglio, M, Manes, A (2021) Numerical investigation on the hybridization effect in inter-ply S2-glass and aramid woven composites subjected to ballistic impacts. *Composite Structure*. 276: 114506