

BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

Pertama, ekstrak etanol buah tomat dapat di formulasikan menjadi sediaan krim dengan mutu fisik yang baik yang dilihat dari hasil uji organoleptik, homogenitas, pH, viskositas, daya lekat, daya sebar, dan tipe krim.

Kedua, sediaan krim ekstrak buah tomat memiliki potensi sebagai tabir surya yang baik dengan nilai SPF sediaan krim konsentrasi 2% 5%, dan 10% sebesar 6,60, 13,64 dan 29,64 dan skor eritema setelah 48 jam paparan sinar UV adalah 1.

B. Saran

Pertama, perlu dilakukan penelitian lebih lanjut terhadap probandus untuk pengembangan sediaan lebih lanjut.

Kedua, perlu dilakukan penelitian lebih lanjut tentang optimasi formula sediaan krim ekstrak etanol umb wortel dengan komposisi bahan dan metode pembuatan yang berbeda.

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L A M P I R A N

Lampiran 1 Hasil determinasi buah tomat


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 Hari : Hasil Determinasi Tumbuhan
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HASIL DETERMINASI TUMBUHAN

Nama Sampel : *Solanum hesperidium* L.
 Famili : Solanaceae

Hasil Determinasi menurut C.G.C.J. van Steenis (2006) :
 1b-2b-3b-4b-5b-7b-8b-10b-11b-12b-13b-14a-15a-16b-17b-18b-19b-20b-21b-22b-23b-24b-25b-26b-27b-28b-29b-30b-31b-32b-33b-34b-35b-36b-37b-38b-39b-40b-41b-42b-43b-44b-45b-46b-47b-48b-49b-50b-51b-52b-53b-54b-55b-56b-57b-58b-59b-60b-61b-62b-63b-64b-65b-66b-67b-68b-69b-70b-71b-72b-73b-74b-75b-76b-77b-78b-79b-80b-81b-82b-83b-84b-85b-86b-87b-88b-89b-90b-91b-92b-93b-94b-95b-96b-97b-98b-99b-100b-101b-102b-103b-104b-105b-106b-107b-108b-109b-110b-111b-112b-113b-114b-115b-116b-117b-118b-119b-120b-121b-122b-123b-124b-125b-126b-127b-128b-129b-130b-131b-132b-133b-134b-135b-136b-137b-138b-139b-140b-141b-142b-143b-144b-145b-146b-147b-148b-149b-150b-151b-152b-153b-154b-155b-156b-157b-158b-159b-160b-161b-162b-163b-164b-165b-166b-167b-168b-169b-170b-171b-172b-173b-174b-175b-176b-177b-178b-179b-180b-181b-182b-183b-184b-185b-186b-187b-188b-189b-190b-191b-192b-193b-194b-195b-196b-197b-198b-199b-200b-201b-202b-203b-204b-205b-206b-207b-208b-209b-210b-211b-212b-213b-214b-215b-216b-217b-218b-219b-220b-221b-222b-223b-224b-225b-226b-227b-228b-229b-230b-231b-232b-233b-234b-235b-236b-237b-238b-239b-240b-241b-242b-243b-244b-245b-246b-247b-248b-249b-250b-251b-252b-253b-254b-255b-256b-257b-258b-259b-260b-261b-262b-263b-264b-265b-266b-267b-268b-269b-270b-271b-272b-273b-274b-275b-276b-277b-278b-279b-280b-281b-282b-283b-284b-285b-286b-287b-288b-289b-290b-291b-292b-293b-294b-295b-296b-297b-298b-299b-300b-301b-302b-303b-304b-305b-306b-307b-308b-309b-310b-311b-312b-313b-314b-315b-316b-317b-318b-319b-320b-321b-322b-323b-324b-325b-326b-327b-328b-329b-330b-331b-332b-333b-334b-335b-336b-337b-338b-339b-340b-341b-342b-343b-344b-345b-346b-347b-348b-349b-350b-351b-352b-353b-354b-355b-356b-357b-358b-359b-360b-361b-362b-363b-364b-365b-366b-367b-368b-369b-370b-371b-372b-373b-374b-375b-376b-377b-378b-379b-380b-381b-382b-383b-384b-385b-386b-387b-388b-389b-390b-391b-392b-393b-394b-395b-396b-397b-398b-399b-400b-401b-402b-403b-404b-405b-406b-407b-408b-409b-410b-411b-412b-413b-414b-415b-416b-417b-418b-419b-420b-421b-422b-423b-424b-425b-426b-427b-428b-429b-430b-431b-432b-433b-434b-435b-436b-437b-438b-439b-440b-441b-442b-443b-444b-445b-446b-447b-448b-449b-450b-451b-452b-453b-454b-455b-456b-457b-458b-459b-460b-461b-462b-463b-464b-465b-466b-467b-468b-469b-470b-471b-472b-473b-474b-475b-476b-477b-478b-479b-480b-481b-482b-483b-484b-485b-486b-487b-488b-489b-490b-491b-492b-493b-494b-495b-496b-497b-498b-499b-500b-501b-502b-503b-504b-505b-506b-507b-508b-509b-510b-511b-512b-513b-514b-515b-516b-517b-518b-519b-520b-521b-522b-523b-524b-525b-526b-527b-528b-529b-530b-531b-532b-533b-534b-535b-536b-537b-538b-539b-540b-541b-542b-543b-544b-545b-546b-547b-548b-549b-550b-551b-552b-553b-554b-555b-556b-557b-558b-559b-560b-561b-562b-563b-564b-565b-566b-567b-568b-569b-570b-571b-572b-573b-574b-575b-576b-577b-578b-579b-580b-581b-582b-583b-584b-585b-586b-587b-588b-589b-590b-591b-592b-593b-594b-595b-596b-597b-598b-599b-600b-601b-602b-603b-604b-605b-606b-607b-608b-609b-610b-611b-612b-613b-614b-615b-616b-617b-618b-619b-620b-621b-622b-623b-624b-625b-626b-627b-628b-629b-630b-631b-632b-633b-634b-635b-636b-637b-638b-639b-640b-641b-642b-643b-644b-645b-646b-647b-648b-649b-650b-651b-652b-653b-654b-655b-656b-657b-658b-659b-660b-661b-662b-663b-664b-665b-666b-667b-668b-669b-670b-671b-672b-673b-674b-675b-676b-677b-678b-679b-680b-681b-682b-683b-684b-685b-686b-687b-688b-689b-690b-691b-692b-693b-694b-695b-696b-697b-698b-699b-700b-701b-702b-703b-704b-705b-706b-707b-708b-709b-710b-711b-712b-713b-714b-715b-716b-717b-718b-719b-720b-721b-722b-723b-724b-725b-726b-727b-728b-729b-730b-731b-732b-733b-734b-735b-736b-737b-738b-739b-740b-741b-742b-743b-744b-745b-746b-747b-748b-749b-750b-751b-752b-753b-754b-755b-756b-757b-758b-759b-760b-761b-762b-763b-764b-765b-766b-767b-768b-769b-770b-771b-772b-773b-774b-775b-776b-777b-778b-779b-780b-781b-782b-783b-784b-785b-786b-787b-788b-789b-790b-791b-792b-793b-794b-795b-796b-797b-798b-799b-800b-801b-802b-803b-804b-805b-806b-807b-808b-809b-810b-811b-812b-813b-814b-815b-816b-817b-818b-819b-820b-821b-822b-823b-824b-825b-826b-827b-828b-829b-830b-831b-832b-833b-834b-835b-836b-837b-838b-839b-840b-841b-842b-843b-844b-845b-846b-847b-848b-849b-850b-851b-852b-853b-854b-855b-856b-857b-858b-859b-860b-861b-862b-863b-864b-865b-866b-867b-868b-869b-870b-871b-872b-873b-874b-875b-876b-877b-878b-879b-880b-881b-882b-883b-884b-885b-886b-887b-888b-889b-890b-891b-892b-893b-894b-895b-896b-897b-898b-899b-900b-901b-902b-903b-904b-905b-906b-907b-908b-909b-910b-911b-912b-913b-914b-915b-916b-917b-918b-919b-920b-921b-922b-923b-924b-925b-926b-927b-928b-929b-930b-931b-932b-933b-934b-935b-936b-937b-938b-939b-940b-941b-942b-943b-944b-945b-946b-947b-948b-949b-950b-951b-952b-953b-954b-955b-956b-957b-958b-959b-960b-961b-962b-963b-964b-965b-966b-967b-968b-969b-970b-971b-972b-973b-974b-975b-976b-977b-978b-979b-980b-981b-982b-983b-984b-985b-986b-987b-988b-989b-990b-991b-992b-993b-994b-995b-996b-997b-998b-999b-1000b-1001b-1002b-1003b-1004b-1005b-1006b-1007b-1008b-1009b-1010b-1011b-1012b-1013b-1014b-1015b-1016b-1017b-1018b-1019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Lampiran 2 Surat keterangan *Ethical Clearance*



HEALTH RESEARCH ETHICS COMMITTEE KOMISI ETIK PENELITIAN KESEHATAN

Dr. Moewardi General Hospital
RSUD Dr. Moewardi

ETHICAL CLEARANCE KELAIKAN ETIK

Nomor : 354 / II / HREC / 2020

The Health Research Ethics Committee Dr. Moewardi
Komisi Etik Penelitian Kesehatan RSUD Dr. Moewardi

after reviewing the proposal design, herewith to certify
setelah menilai rancangan penelitian yang diusulkan, dengan ini menyatakan

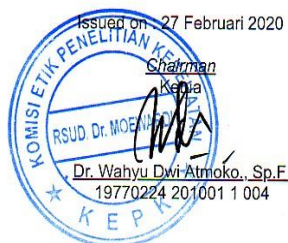
That the research proposal with topic :
Bahwa usulan penelitian dengan judul

**UJI AKTIVITAS PERLINDUNGAN TABIR SURYA KRIM EKSTRAK ETANOL BUAH TOMAT (*Lycopersicum esculentum* L.)
SECARA IN VITRO DAN IN VIVO**

Principal investigator : Angeline Tamara Wijaya
Peneliti Utama 22164974A

Location of research : Universitas Setia Budi Surakarta
Lokasi Tempat Penelitian

Is ethically approved
Dinyatakan layak etik



Lampiran 3 COA Lycopene

SIGMA-ALDRICH
sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA

 Website: www.sigmaaldrich.com

 Email USA: techserv@sial.com

 Outside USA: eurotechserv@sial.com

Certificate of Analysis

 Product Name:
Lycopene – ≥90%, from tomato

Product Number: L8878
 Batch Number: MLC08929
 Brand: SIGMA
 CAS Number: 502-65-8
 MDL Number: MFCD00017350
 Formula Weight: 536.87 g/mol
 Storage Temperature: Store at -70 °C
 Quality Release Date: 06 NOV 2019

Test	Specification	Result
Appearance (Color)	Red to Very Dark Red and Red-Brown and Very Dark Red-Brown Very Dark Red-Brown	
Appearance (Form)	Powder	Powder
Solubility (Color)	Orange to Red	Orange-Red
Solubility (Turbidity)	Clear	Clear
1 mg/mL, CHCl ₃		
UV-Vis Spectrum	≥ 90 %	96 %
based on E1% = 3450 at 471-472 nm in hexane		
Purity (HPLC)	≥ 90 %	96 %

Carolyn Baird, Supervisor
 Quality Assurance
 St. Louis, Missouri US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Lampiran 4 Hasil uji daya sebar hari ke-1

Formula	Beban (gram)	Diameter (cm)			Rata-rata ± SD
		Replikasi 1	Replikasi 2	Replikasi 3	
Basis	43,9536	2,43	2,25	2,00	2,23 ± 0,28
	93,9536	2,68	2,73	2,40	2,60 ± 0,25
	143,9536	3,03	3,18	2,75	2,98 ± 0,28
	193,9536	3,25	3,48	2,95	3,23 ± 0,28
	243,9536	3,43	3,78	3,20	3,47 ± 0,34
F1	43,9536	1,70	1,40	1,56	1,56 ± 0,20
	93,9536	1,98	1,68	1,95	1,87 ± 0,24
	143,9536	2,25	1,95	2,05	2,10 ± 0,24
	193,9536	2,48	2,15	2,20	2,28 ± 0,24
	243,9536	2,63	2,28	2,33	2,41 ± 0,24
F2	43,9536	1,50	1,43	1,55	1,49 ± 0,13
	93,9536	1,80	1,78	1,85	1,81 ± 0,14
	143,9536	2,03	2,10	2,10	2,08 ± 0,16
	193,9536	2,25	2,28	2,30	2,28 ± 0,14
	243,9536	2,43	2,48	2,45	2,45 ± 0,12
F3	43,9536	1,43	1,48	1,65	1,52 ± 0,26
	93,9536	1,85	1,70	2,00	1,85 ± 0,31
	143,9536	2,03	1,90	2,13	2,02 ± 0,34
	193,9536	2,20	2,10	2,30	2,20 ± 0,32
	243,9536	2,30	2,28	2,45	2,34 ± 0,31

Lampiran 5 Data uji statistik daya sebar formulasi krim ekstrak buah tomat

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		DayaSebar
N		20
Normal Parameters ^{a, b}	Mean	2.2358
	Std. Deviation	.53169
Most Extreme Differences	Absolute	.144
	Positive	.144
	Negative	-.081
Kolmogorov-Smirnov Z		.642
Asymp. Sig. (2-tailed)		.804

a. Test distribution is Normal.

b. Calculated from data.

Oneway

Test of Homogeneity of Variances

DayaSebar

Levene Statistic	df1	df2	Sig.
.587	3	16	.632

ANOVA

DayaSebar

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.948	3	.983	6.489	.004
Within Groups	2.423	16	.151		
Total	5.371	19			

Post Hoc Tests

Multiple Comparisons

DayaSebar

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Basis	tomat 2%	.86167*	.24612	.014	.1575	1.5658
	tomat 5%	.88000*	.24612	.012	.1758	1.5842
	tomat 10%	.91500*	.24612	.009	.2108	1.6192
tomat 2%	basis	-.86167*	.24612	.014	-1.5658	-.1575
	tomat 5%	.01833	.24612	1.000	-.6858	.7225
	tomat 10%	.05333	.24612	.996	-.6508	.7575
tomat 5%	basis	-.88000*	.24612	.012	-1.5842	-.1758
	tomat 2%	-.01833	.24612	1.000	-.7225	.6858
	tomat 10%	.03500	.24612	.999	-.6692	.7392
tomat 10%	basis	-.91500*	.24612	.009	-1.6192	-.2108
	tomat 2%	-.05333	.24612	.996	-.7575	.6508
	tomat 5%	-.03500	.24612	.999	-.7392	.6692

Homogeneous Subsets

DayaSebar

Tukey HSDa

Formula	N	Subset for alpha = 0.05	
		1	2
tomat 10%	5	1.9850	2.9000
tomat 5%	5	2.0200	
tomat 2%	5	2.0383	
basis	5		
Sig.		.996	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5.000.

Lampiran 6 Hasil uji daya lekat hari ke-1

Waktu	Daya lekat (detik)			
	Basis	F1	F2	F3
Hari ke 1	1,3	1,8	2,1	2,5
	1,2	1,6	2,0	2,3
	1,4	1,7	2,2	2,5
Rata-rata ± SD	1,3 ± 0,10	1,7 ± 0,10	2,1 ± 0,10	2,4 ± 0,12

Lampiran 7 Data uji statistik daya lekat formulasi krim ekstrak buah tomat

NPar Tests

One-Sample Kolmogorov-Smirnov Test		
		DayaLekat
N		12
Normal Parameters ^{a, b}	Mean	1.8833
	Std. Deviation	.45294
Most Extreme Differences	Absolute	.107
	Positive	.107
	Negative	-.102
Kolmogorov-Smirnov Z		.371
Asymp. Sig. (2-tailed)		.999

a. Test distribution is Normal.

b. Calculated from data.

Oneway

Test of Homogeneity of Variances

DayaLekat

Levene Statistic	df1	df2	Sig.
.129	3	8	.940

ANOVA

DayaLekat

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.170	3	.723	66.769	.000
Within Groups	.087	8	.011		
Total	2.257	11			

Post Hoc Tests

Multiple Comparisons

DayaLekat

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
basis	tomat 2%	-.40000*	.08498	.007	-.6721	-.1279
	tomat 5%	-.80000*	.08498	.000	-1.0721	-.5279
	tomat 10%	-1.13333*	.08498	.000	-1.4055	-.8612
tomat 2%	basis	.40000*	.08498	.007	.1279	.6721
	tomat 5%	-.40000*	.08498	.007	-.6721	-.1279
	tomat 10%	-.73333*	.08498	.000	-1.0055	-.4612
tomat 5%	basis	.80000*	.08498	.000	.5279	1.0721
	tomat 2%	.40000*	.08498	.007	.1279	.6721
	tomat 10%	-.33333*	.08498	.018	-.6055	-.0612
tomat 10%	basis	1.13333*	.08498	.000	.8612	1.4055
	tomat 2%	.73333*	.08498	.000	.4612	1.0055
	tomat 5%	.33333*	.08498	.018	.0612	.6055

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

DayaLekat

Tukey HSD^a

Formula	N	Subset for alpha = 0.05			
		1	2	3	4
Basis	3	1.3000			
tomat 2%	3		1.7000		
tomat 5%	3			2.1000	
tomat 10%	3				2.4333
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Lampiran 8 Hasil uji viskositas hari ke-1

Waktu	Viskositas (dPas)			
	Basis	F1	F2	F3
Hari ke 1	100	120	130	150
	110	100	120	140
	90	110	140	160
Rata-rata ± SD	100 ± 0,10	110 ± 10	130 ± 10	150 ± 10

Lampiran 9 Data uji statistik viskositas formulasi krim ekstrak buah tomat

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Viskositas
N		12
Normal Parameters ^{a, b}	Mean	122.5000
	Std. Deviation	21.79449
Most Extreme Differences	Absolute	.134
	Positive	.134
	Negative	-.122
Kolmogorov-Smirnov Z		.463
Asymp. Sig. (2-tailed)		.983

a. Test distribution is Normal.

One-Sample Kolmogorov-Smirnov Test

		Viskositas
N		12
Normal Parameters ^{a, b}	Mean	122.5000
	Std. Deviation	21.79449
Most Extreme Differences	Absolute	.134
	Positive	.134
	Negative	-.122
Kolmogorov-Smirnov Z		.463
Asymp. Sig. (2-tailed)		.983

a. Test distribution is Normal.

b. Calculated from data.

Oneway

Test of Homogeneity of Variances

Viskositas

Levene Statistic	df1	df2	Sig.
.000	3	8	1.000

ANOVA

Viskositas

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4425.000	3	1475.000	14.750	.001
Within Groups	800.000	8	100.000		
Total	5225.000	11			

Post Hoc Tests

Multiple Comparisons

Viskositas

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
basis	tomat 2%	-10.00000	8.16497	.630	-36.1471	16.1471
	tomat 5%	-30.00000*	8.16497	.026	-56.1471	-3.8529
	tomat 10%	-50.00000*	8.16497	.001	-76.1471	-23.8529
tomat 2%	basis	10.00000	8.16497	.630	-16.1471	36.1471
	tomat 5%	-20.00000	8.16497	.144	-46.1471	6.1471
	tomat 10%	-40.00000*	8.16497	.005	-66.1471	-13.8529
tomat 5%	basis	30.00000*	8.16497	.026	3.8529	56.1471
	tomat 2%	20.00000	8.16497	.144	-6.1471	46.1471
	tomat 10%	-20.00000	8.16497	.144	-46.1471	6.1471
tomat 10%	basis	50.00000*	8.16497	.001	23.8529	76.1471
	tomat 2%	40.00000*	8.16497	.005	13.8529	66.1471
	tomat 5%	20.00000	8.16497	.144	-6.1471	46.1471

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Viskositas

Tukey HSD^a

Formula	N	Subset for alpha = 0.05		
		1	2	3
Basis	3	100.0000		
tomat 2%	3	110.0000	110.0000	
tomat 5%	3		130.0000	130.0000
tomat 10%	3			150.0000
Sig.		.630	.144	.144

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 10 Hasil uji pH hari ke-1

Waktu	pH			
	Basis	F1	F2	F3
Hari ke 1	6,42	6,21	5,85	5,26
	6,38	6,14	5,94	5,34
	6,47	6,30	6,00	5,40
Rata-rata ± SD	6,42 ± 0,04	6,22 ± 0,08	5,93 ± 0,07	5,33 ± 0,07

Lampiran 11 Data uji statistik pH formulasi krim ekstrak buah tomat

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		pH
N		12
Normal Parameters ^{a,b}	Mean	5.9758
	Std. Deviation	.43251
Most Extreme Differences	Absolute	.158
	Positive	.158
	Negative	-.148
Kolmogorov-Smirnov Z		.549
Asymp. Sig. (2-tailed)		.924

a. Test distribution is Normal.

b. Calculated from data.

Test of Homogeneity of Variances

pH

Levene Statistic	df1	df2	Sig.
.286	3	8	.834

ANOVA

Ph

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.019	3	.673	140.977	.000
Within Groups	.038	8	.005		
Total	2.058	11			

Post Hoc Tests

Multiple Comparisons

pH

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
basis	tomat 2%	.20667 [*]	.05642	.026	.0260	.3873
	tomat 5%	.49333 [*]	.05642	.000	.3127	.6740
	tomat 10%	1.09000 [*]	.05642	.000	.9093	1.2707
tomat 2%	basis	-.20667 [*]	.05642	.026	-.3873	-.0260
	tomat 5%	.28667 [*]	.05642	.004	.1060	.4673
	tomat 10%	.88333 [*]	.05642	.000	.7027	1.0640
tomat 5%	basis	-.49333 [*]	.05642	.000	-.6740	-.3127
	tomat 2%	-.28667 [*]	.05642	.004	-.4673	-.1060
	tomat 10%	.59667 [*]	.05642	.000	.4160	.7773
tomat 10%	basis	-1.09000 [*]	.05642	.000	-1.2707	-.9093
	tomat 2%	-.88333 [*]	.05642	.000	-1.0640	-.7027
	tomat 5%	-.59667 [*]	.05642	.000	-.7773	-.4160

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

pH

Tukey HSD^a

Formula	N	Subset for alpha = 0.05			
		1	2	3	4
tomat 10%	3	5.3333			
tomat 5%	3		5.9300		
tomat 2%	3			6.2167	
basis	3				6.4233
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Lampiran 12 Perhitungan rendemen ekstrak kental buah tomat

$$\% \text{ rendemen} = \frac{\text{Bobot ekstrak (g)}}{\text{Bobot buah tomat (g)}} \times 100\%$$

$$\% \text{ rendemen} = \frac{142 \text{ g}}{2000 \text{ g}} \times 100\%$$

$$\% \text{ rendemen} = 7,1\%$$

Lampiran 13 Perhitungan luas eritema

Kelompok perlakuan	Luas eritema (mm)			Rata-rata ± SD
	Replikasi 1	Replikasi 2	Replikasi 3	
Basis	9	3	5	7,11 ± 2,86
	5	7	8	
	12	4	6	
	10	10		
Formula 1	4	6	8	5,67 ± 2,00
	5	5	4	
	7	9	3	
Formula 2	5	5	6	4,33 ± 1,49
	3	3	4	
		2	2	
Formula 3	4	2	5	2,83 ± 1,13
	2	3	3	
	2		2	
Kontrol positif	3	3	4	3,17 ± 0,71
	3	2		
Ekstrak	2	2	3	2,67 ± 0,89
	4		2	

Lampiran 14 Data uji statistik eritema formulasi krim ekstrak buah tomat

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		Eritemajamke48
N		18
Normal Parameters ^{a,b}	Mean	4.2406
	Std. Deviation	1.89431
Most Extreme Differences	Absolute	.162
	Positive	.162
	Negative	-.118
Kolmogorov-Smirnov Z		.686
Asymp. Sig. (2-tailed)		.735

a. Test distribution is Normal.

b. Calculated from data.

Oneway

Test of Homogeneity of Variances

Eritemajamke48

Levene Statistic	df1	df2	Sig.
3.069	5	12	.052

ANOVA

Eritemajamke48

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	51.141	5	10.228	12.446	.000
Within Groups	9.862	12	.822		
Total	61.003	17			

Post Hoc Tests

Multiple Comparisons

Eritemajamke48

Tukey HSD

(I) Fomula	(J) Fomula	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
basis krim	ekstrak 2%	1.44333	.74018	.420	-1.0429	3.9295
	ekstrak 5%	2.77667*	.74018	.026	.2905	5.2629
	ekstrak 10%	4.27667*	.74018	.001	1.7905	6.7629
	nivea	3.94333*	.74018	.002	1.4571	6.4295
	ekstrak	4.77667*	.74018	.000	2.2905	7.2629
ekstrak 2%	basis krim	-1.44333	.74018	.420	-3.9295	1.0429
	ekstrak 5%	1.33333	.74018	.499	-1.1529	3.8195
	ekstrak 10%	2.83333*	.74018	.023	.3471	5.3195
	nivea	2.50000*	.74018	.048	.0138	4.9862
	ekstrak	3.33333*	.74018	.007	.8471	5.8195
ekstrak 5%	basis krim	-2.77667*	.74018	.026	-5.2629	-.2905
	ekstrak 2%	-1.33333	.74018	.499	-3.8195	1.1529
	ekstrak 10%	1.50000	.74018	.383	-.9862	3.9862
	nivea	1.16667	.74018	.627	-1.3195	3.6529
	ekstrak	2.00000	.74018	.146	-.4862	4.4862
ekstrak 10%	basis krim	-4.27667*	.74018	.001	-6.7629	-1.7905
	ekstrak 2%	-2.83333*	.74018	.023	-5.3195	-.3471
	ekstrak 5%	-1.50000	.74018	.383	-3.9862	.9862
	nivea	-.33333	.74018	.997	-2.8195	2.1529
	ekstrak	.50000	.74018	.981	-1.9862	2.9862
Nivea	basis krim	-3.94333*	.74018	.002	-6.4295	-1.4571
	ekstrak 2%	-2.50000*	.74018	.048	-4.9862	-.0138
	ekstrak 5%	-1.16667	.74018	.627	-3.6529	1.3195
	ekstrak 10%	.33333	.74018	.997	-2.1529	2.8195
	ekstrak	.83333	.74018	.862	-1.6529	3.3195
Ekstrak	basis krim	-4.77667*	.74018	.000	-7.2629	-2.2905
	ekstrak 2%	-3.33333*	.74018	.007	-5.8195	-.8471
	ekstrak 5%	-2.00000	.74018	.146	-4.4862	.4862
	ekstrak 10%	-.50000	.74018	.981	-2.9862	1.9862
	nivea	-.83333	.74018	.862	-3.3195	1.6529

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Eritemajamke48

TukeyHSD^a

Fomula	N	Subset for alpha = 0.05		
		1	2	3
Ekstrak	3	2.3333		
ekstrak 10%	3	2.8333		
nivea	3	3.1667		
ekstrak 5%	3	4.3333	4.3333	
ekstrak 2%	3		5.6667	5.6667
basis krim	3			7.1100
Sig.		.146	.499	.420

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 15 Perhitungan nilai SPF

Formula	Panjang gelombang	Absorbansi			Rata-rata ± SD
		Replikasi 1	Replikasi 2	Replikasi 3	
Basis	290	0,1288	0,1259	0,1280	0,6327 ±
	295	0,0629	0,0628	0,0887	0,1766
	300	0,0535	0,0520	0,0836	
	305	0,0519	0,0510	0,0841	
	310	0,0483	0,0458	0,0784	
	315	0,0448	0,0414	0,0726	
	320	0,0427	0,0391	0,0710	

290 nm = Replikasi 1 = $10 \times 0,0150 \times 0,1288 = 0,0193$

Replikasi 2 = $10 \times 0,0150 \times 0,1259 = 0,0189$

Replikasi 3 = $10 \times 0,0150 \times 0,1280 = 0,0192$

295 nm = Replikasi 1 = $10 \times 0,0817 \times 0,0629 = 0,0514$

Replikasi 2 = $10 \times 0,0817 \times 0,0628 = 0,0513$

Replikasi 3 = $10 \times 0,0817 \times 0,0887 = 0,0725$

300 nm = Replikasi 1 = $10 \times 0,2874 \times 0,0535 = 0,1538$

$$\text{Replikasi 2} = 10 \times 0,2874 \times 0,0520 = 0,1494$$

$$\text{Replikasi 3} = 10 \times 0,2874 \times 0,0836 = 0,2403$$

$$305 \text{ nm} = \text{Replikasi 1} = 10 \times 0,3278 \times 0,0519 = 0,1701$$

$$\text{Replikasi 2} = 10 \times 0,3278 \times 0,0510 = 0,1672$$

$$\text{Replikasi 3} = 10 \times 0,3278 \times 0,0841 = 0,2757$$

$$310 \text{ nm} = \text{Replikasi 1} = 10 \times 0,1864 \times 0,0483 = 0,0900$$

$$\text{Replikasi 2} = 10 \times 0,1864 \times 0,0458 = 0,0854$$

$$\text{Replikasi 3} = 10 \times 0,1864 \times 0,0784 = 0,1461$$

$$315 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0839 \times 0,0448 = 0,0376$$

$$\text{Replikasi 2} = 10 \times 0,0839 \times 0,0414 = 0,0347$$

$$\text{Replikasi 3} = 10 \times 0,0839 \times 0,0726 = 0,0609$$

$$320 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0180 \times 0,0427 = 0,0077$$

$$\text{Replikasi 2} = 10 \times 0,0180 \times 0,0391 = 0,0070$$

$$\text{Replikasi 3} = 10 \times 0,0180 \times 0,0710 = 0,0128$$

$$\text{Total nilai SPF replikasi 1} = 0,5299$$

$$\text{Total nilai SPF replikasi 2} = 0,5140$$

$$\text{Total nilai SPF replikasi 3} = 0,8274$$

$$\begin{aligned} \text{Rata-rata nilai SPF basis krim} &= \frac{\text{total nilai SPF replikasi 1} + \text{replikasi 2} + \text{replikasi 3}}{3} \\ &= \frac{0,5299 + 0,5140 + 0,8274}{3} \\ &= 0,6237 \end{aligned}$$

Formula	Panjang gelombang	Absorbansi			Rata-rata $\pm$ SD
		Replikasi 1	Replikasi 2	Replikasi 3	
Formula 1	290	0,8687	0,8349	0,7606	6,6005 $\pm$
	295	0,7708	0,8437	0,6337	0,8727
	300	0,7379	0,7129	0,5888	
	305	0,6166	0,7926	0,5598	
	310	0,6974	0,6738	0,5288	
	315	0,5783	0,6546	0,4993	
	320	0,5628	0,5399	0,4751	

$$290 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0150 \times 0,8687 = 0,1303$$

$$\text{Replikasi 2} = 10 \times 0,0150 \times 0,8349 = 0,1252$$

$$\text{Replikasi 3} = 10 \times 0,0150 \times 0,7606 = 0,1141$$

$$295 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0817 \times 0,7708 = 0,6297$$

$$\text{Replikasi 2} = 10 \times 0,0817 \times 0,8437 = 0,6893$$

$$\text{Replikasi 3} = 10 \times 0,0817 \times 0,6337 = 0,5177$$

$$300 \text{ nm} = \text{Replikasi 1} = 10 \times 0,2874 \times 0,7379 = 2,1207$$

$$\text{Replikasi 2} = 10 \times 0,2874 \times 0,7129 = 2,0489$$

$$\text{Replikasi 3} = 10 \times 0,2874 \times 0,5888 = 1,6922$$

$$305 \text{ nm} = \text{Replikasi 1} = 10 \times 0,3278 \times 0,6166 = 2,0212$$

$$\text{Replikasi 2} = 10 \times 0,3278 \times 0,7926 = 2,5981$$

$$\text{Replikasi 3} = 10 \times 0,3278 \times 0,5598 = 1,8350$$

$$310 \text{ nm} = \text{Replikasi 1} = 10 \times 0,1864 \times 0,6974 = 1,2999$$

$$\text{Replikasi 2} = 10 \times 0,1864 \times 0,6738 = 1,2560$$

$$\text{Replikasi 3} = 10 \times 0,1864 \times 0,5288 = 0,9857$$

$$315 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0839 \times 0,5783 = 0,4852$$

$$\text{Replikasi 2} = 10 \times 0,0839 \times 0,6546 = 0,5492$$

$$\text{Replikasi 3} = 10 \times 0,0839 \times 0,4993 = 0,4189$$

$$320 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0180 \times 0,5628 = 0,1013$$

$$\text{Replikasi 2} = 10 \times 0,0180 \times 0,5399 = 0,0972$$

$$\text{Replikasi 3} = 10 \times 0,0180 \times 0,4751 = 0,0855$$

$$\text{Total nilai SPF replikasi 1} = 6,7884$$

$$\text{Total nilai SPF replikasi 2} = 7,3639$$

$$\text{Total nilai SPF replikasi 3} = 5,6492$$

$$\begin{aligned} \text{Rata-rata nilai SPF basis krim} &= \frac{\text{total nilai SPF replikasi 1} + \text{replikasi 2} + \text{replikasi 3}}{3} \\ &= \frac{6,7884 + 7,3639 + 5,6492}{3} \\ &= 6,6005 \end{aligned}$$

Formula	Panjang gelombang	Absorbansi			Rata-rata $\pm$ SD
		Replikasi 1	Replikasi 2	Replikasi 3	
Formula 2	290	1,5056	1,6380	1,4380	13,4744 $\pm$
	295	1,5043	1,5556	1,3556	1,2493
	300	1,3499	1,5119	1,2119	
	305	1,3035	1,4748	1,2748	
	310	1,3598	1,4296	1,1296	
	315	1,2134	1,3906	1,1906	
	320	1,1771	1,3557	1,0557	

$$290 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0150 \times 1,5056 = 0,2258$$

$$\text{Replikasi 2} = 10 \times 0,0150 \times 1,6380 = 0,2457$$

$$\text{Replikasi 3} = 10 \times 0,0150 \times 1,4380 = 0,2157$$

$$295 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0817 \times 1,5043 = 1,2290$$

$$\text{Replikasi 2} = 10 \times 0,0817 \times 1,5556 = 1,2709$$

$$\text{Replikasi 3} = 10 \times 0,0817 \times 1,3556 = 1,1075$$

$$300 \text{ nm} = \text{Replikasi 1} = 10 \times 0,2874 \times 1,3499 = 3,8796$$

$$\text{Replikasi 2} = 10 \times 0,2874 \times 1,5119 = 4,3452$$

$$\text{Replikasi 3} = 10 \times 0,2874 \times 1,2119 = 3,4830$$

$$305 \text{ nm} = \text{Replikasi 1} = 10 \times 0,3278 \times 1,3055 = 4,2729$$

$$\text{Replikasi 2} = 10 \times 0,3278 \times 1,4748 = 4,8344$$

$$\text{Replikasi 3} = 10 \times 0,3278 \times 1,2748 = 4,1788$$

$$310 \text{ nm} = \text{Replikasi 1} = 10 \times 0,1864 \times 1,3598 = 2,5347$$

$$\text{Replikasi 2} = 10 \times 0,1864 \times 1,4296 = 2,6648$$

$$\text{Replikasi 3} = 10 \times 0,1864 \times 1,1296 = 2,1056$$

$$315 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0839 \times 1,2134 = 1,0180$$

$$\text{Replikasi 2} = 10 \times 0,0839 \times 1,3906 = 1,1667$$

$$\text{Replikasi 3} = 10 \times 0,0839 \times 1,1906 = 0,9989$$

$$320 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0180 \times 1,1771 = 0,2119$$

$$\text{Replikasi 2} = 10 \times 0,0180 \times 1,3557 = 0,2440$$

$$\text{Replikasi 3} = 10 \times 0,0180 \times 1,0557 = 0,1900$$

Total nilai SPF replikasi 1 = 13,3719

Total nilai SPF replikasi 2 = 14,7717

Total nilai SPF replikasi 3 = 12,2795

$$\begin{aligned}\text{Rata-rata nilai SPF basis krim} &= \frac{\text{total nilai SPF replikasi 1} + \text{replikasi 2} + \text{replikasi 3}}{3} \\ &= \frac{13,3719 + 14,7717 + 12,2795}{3} \\ &= 13,4744\end{aligned}$$

Formula	Panjang gelombang	Absorbansi			Rata-rata $\pm$ SD
		Replikasi 1	Replikasi 2	Replikasi 3	
Formula 3	290	3,4426	3,5955	3,2162	29,5141 $\pm$
	295	3,3087	3,3642	3,0540	0,7656
	300	3,0176	3,1083	2,9690	
	305	2,9446	2,9411	2,8962	
	310	2,8775	2,8881	2,6186	
	315	2,8179	2,8316	2,7466	
	320	2,7408	2,7833	2,5819	

$$290 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0150 \times 3,4426 = 0,5164$$

$$\text{Replikasi 2} = 10 \times 0,0150 \times 3,5955 = 0,5393$$

$$\text{Replikasi 3} = 10 \times 0,0150 \times 3,2162 = 0,4824$$

$$295 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0817 \times 3,3087 = 2,7032$$

$$\text{Replikasi 2} = 10 \times 0,0817 \times 3,3642 = 2,7486$$

$$\text{Replikasi 3} = 10 \times 0,0817 \times 3,0540 = 2,4951$$

$$300 \text{ nm} = \text{Replikasi 1} = 10 \times 0,2874 \times 3,0176 = 8,6726$$

$$\text{Replikasi 2} = 10 \times 0,2874 \times 3,1083 = 8,9333$$

$$\text{Replikasi 3} = 10 \times 0,2874 \times 2,9690 = 8,5329$$

$$305 \text{ nm} = \text{Replikasi 1} = 10 \times 0,3278 \times 2,9446 = 9,6524$$

$$\text{Replikasi 2} = 10 \times 0,3278 \times 2,9411 = 9,6409$$

$$\text{Replikasi 3} = 10 \times 0,3278 \times 2,8962 = 9,4937$$

$$310 \text{ nm} = \text{Replikasi 1} = 10 \times 0,1864 \times 2,8775 = 5,3637$$

$$\text{Replikasi 2} = 10 \times 0,1864 \times 2,8881 = 5,3834$$

$$\text{Replikasi 3} = 10 \times 0,1864 \times 2,6186 = 4,8811$$

$$315 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0839 \times 2,8179 = 2,3642$$

$$\text{Replikasi 2} = 10 \times 0,0839 \times 2,8316 = 2,3757$$

$$\text{Replikasi 3} = 10 \times 0,0839 \times 2,7466 = 2,3044$$

$$320 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0180 \times 2,7408 = 0,4933$$

$$\text{Replikasi 2} = 10 \times 0,0180 \times 2,7833 = 0,5010$$

$$\text{Replikasi 3} = 10 \times 0,0180 \times 2,5819 = 0,4647$$

$$\text{Total nilai SPF replikasi 1} = 29,7658$$

$$\text{Total nilai SPF replikasi 2} = 30,1222$$

$$\text{Total nilai SPF replikasi 3} = 28,6544$$

$$\begin{aligned} \text{Rata-rata nilai SPF basis krim} &= \frac{\text{total nilai SPF replikasi 1} + \text{replikasi 2} + \text{replikasi 3}}{3} \\ &= \frac{29,7658 + 30,1222 + 28,6544}{3} \\ &= 29,5141 \end{aligned}$$

Formula	Panjang gelombang	Absorbansi			Rata-rata $\pm$ SD
		Replikasi 1	Replikasi 2	Replikasi 3	
Kontrol positif	290	3,6891	3,8941	3,7891	37,7987 $\pm$
	295	3,8131	3,8816	3,9023	0,5201
	300	3,8893	3,7727	3,7921	
	305	3,8194	3,7340	3,8566	
	310	3,6659	3,4803	3,8077	
	315	3,6949	3,7849	3,6889	
	320	3,8983	3,9296	3,8735	

$$290 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0150 \times 3,6891 = 0,5534$$

$$\text{Replikasi 2} = 10 \times 0,0150 \times 3,8941 = 0,5841$$

$$\text{Replikasi 3} = 10 \times 0,0150 \times 3,7891 = 0,5684$$

$$295 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0817 \times 3,8131 = 3,1153$$

$$\text{Replikasi 2} = 10 \times 0,0817 \times 3,8816 = 3,1713$$

$$\text{Replikasi 3} = 10 \times 0,0817 \times 3,9023 = 3,1882$$

$$300 \text{ nm} = \text{Replikasi 1} = 10 \times 0,2874 \times 3,8893 = 11,1778$$

$$\text{Replikasi 2} = 10 \times 0,2874 \times 3,7727 = 10,8427$$

$$\text{Replikasi 3} = 10 \times 0,2874 \times 3,7921 = 10,8985$$

$$305 \text{ nm} = \text{Replikasi 1} = 10 \times 0,3278 \times 3,8194 = 12,5199$$

$$\text{Replikasi 2} = 10 \times 0,3278 \times 3,7340 = 12,2401$$

$$\text{Replikasi 3} = 10 \times 0,3278 \times 3,8566 = 12,6419$$

$$310 \text{ nm} = \text{Replikasi 1} = 10 \times 0,1864 \times 3,6659 = 6,8332$$

$$\text{Replikasi 2} = 10 \times 0,1864 \times 3,4803 = 6,4872$$

$$\text{Replikasi 3} = 10 \times 0,1864 \times 3,8077 = 7,0976$$

$$315 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0839 \times 3,6949 = 3,1000$$

$$\text{Replikasi 2} = 10 \times 0,0839 \times 3,7849 = 3,1755$$

$$\text{Replikasi 3} = 10 \times 0,0839 \times 3,6889 = 3,0950$$

$$320 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0180 \times 3,8983 = 0,7017$$

$$\text{Replikasi 2} = 10 \times 0,0180 \times 3,9296 = 0,7073$$

$$\text{Replikasi 3} = 10 \times 0,0180 \times 3,8735 = 0,6972$$

$$\text{Total nilai SPF replikasi 1} = 38,0015$$

$$\text{Total nilai SPF replikasi 2} = 37,2078$$

$$\text{Total nilai SPF replikasi 3} = 38,1867$$

$$\begin{aligned} \text{Rata-rata nilai SPF basis krim} &= \frac{\text{total nilai SPF replikasi 1} + \text{replikasi 2} + \text{replikasi 3}}{3} \\ &= \frac{38,0015 + 37,2078 + 38,1867}{3} \\ &= 37,7987 \end{aligned}$$

Formula	Panjang gelombang	Absorbansi			Rata-rata $\pm$ SD
		Replikasi 1	Replikasi 2	Replikasi 3	
Ekstrak buah tomat	290	3,9077	3,8061	3,9667	38,7234 $\pm$ 0,2884
	295	3,9480	3,7784	3,9208	
	300	3,8709	3,9753	3,8648	
	305	3,8448	3,6347	3,8262	
	310	3,8694	3,8837	3,8583	
	315	3,8997	3,8212	3,6733	
	320	3,8836	3,9124	3,8735	

$$290 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0150 \times 3,9077 = 0,5862$$

$$\text{Replikasi 2} = 10 \times 0,0150 \times 3,8061 = 0,5709$$

$$\text{Replikasi 3} = 10 \times 0,0150 \times 3,9667 = 0,5950$$

$$295 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0817 \times 3,9480 = 3,2255$$

$$\text{Replikasi 2} = 10 \times 0,0817 \times 3,7784 = 3,0869$$

$$\text{Replikasi 3} = 10 \times 0,0817 \times 3,9208 = 3,2033$$

$$300 \text{ nm} = \text{Replikasi 1} = 10 \times 0,2874 \times 3,8709 = 11,1250$$

$$\text{Replikasi 2} = 10 \times 0,2874 \times 3,9753 = 11,4250$$

$$\text{Replikasi 3} = 10 \times 0,2874 \times 3,8648 = 11,1074$$

$$305 \text{ nm} = \text{Replikasi 1} = 10 \times 0,3278 \times 3,8448 = 12,6033$$

$$\text{Replikasi 2} = 10 \times 0,3278 \times 3,6347 = 11,9145$$

$$\text{Replikasi 3} = 10 \times 0,3278 \times 3,8262 = 12,5423$$

$$310 \text{ nm} = \text{Replikasi 1} = 10 \times 0,1864 \times 3,8694 = 7,2126$$

$$\text{Replikasi 2} = 10 \times 0,1864 \times 3,8837 = 7,2392$$

$$\text{Replikasi 3} = 10 \times 0,1864 \times 3,8583 = 7,1919$$

$$315 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0839 \times 3,8997 = 3,2718$$

$$\text{Replikasi 2} = 10 \times 0,0839 \times 3,8212 = 3,2060$$

$$\text{Replikasi 3} = 10 \times 0,0839 \times 3,6733 = 3,0819$$

$$320 \text{ nm} = \text{Replikasi 1} = 10 \times 0,0180 \times 3,8836 = 0,6990$$

$$\text{Replikasi 2} = 10 \times 0,0180 \times 3,9124 = 0,7042$$

$$\text{Replikasi 3} = 10 \times 0,0180 \times 3,8735 = 0,6972$$

Total nilai SPF replikasi 1 = 38,7234

Total nilai SPF replikasi 2 = 38,1469

Total nilai SPF replikasi 3 = 38,4190

$$\begin{aligned}\text{Rata-rata nilai SPF basis krim} &= \frac{\text{total nilai SPF replikasi 1} + \text{replikasi 2} + \text{replikasi 3}}{3} \\ &= \frac{38,7234 + 38,1469 + 38,4190}{3} \\ &= 38,4297\end{aligned}$$

Lampiran 16 Data uji statistik nilai SPF formulasi krim ekstrak buah tomat

NPar Tests

One-Sample Kolmogorov-Smirnov Test

		SPF
N		18
Normal Parameters ^{a, b}	Mean	21.0733
	Std. Deviation	15.37639
Most Extreme Differences	Absolute	.189
	Positive	.159
	Negative	-.189
Kolmogorov-Smirnov Z		.801
Asymp. Sig. (2-tailed)		.542

a. Test distribution is Normal.

b. Calculated from data.

Oneway

Test of Homogeneity of Variances

SPF

Levene Statistic	df1	df2	Sig.
1.838	5	12	.180

ANOVA

SPF

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4012.777	5	802.555	1460.812	.000
Within Groups	6.593	12	.549		
Total	4019.370	17			

Post Hoc Tests

Multiple Comparisons

SPF

Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
basis	tomat 2%	-5.97674 [*]	.60519	.000	-8.0095	-3.9439
	tomat 5%	-12.85078 [*]	.60519	.000	-14.8836	-10.8180
	tomat 10%	-28.88889 [*]	.60519	.000	-30.9217	-26.8561
	nivea SPF 50	-37.17488 [*]	.60519	.000	-39.2077	-35.1421
	ekstrak tomat	-37.80597 [*]	.60519	.000	-39.8388	-35.7732
tomat 2%	basis	5.97674 [*]	.60519	.000	3.9439	8.0095
	tomat 5%	-6.87405 [*]	.60519	.000	-8.9068	-4.8412
	tomat 10%	-22.91215 [*]	.60519	.000	-24.9450	-20.8794
	nivea SPF 50	-31.19814 [*]	.60519	.000	-33.2309	-29.1653
	ekstrak tomat	-31.82924 [*]	.60519	.000	-33.8620	-29.7964
tomat 5%	basis	12.85078 [*]	.60519	.000	10.8180	14.8836
	tomat 2%	6.87405 [*]	.60519	.000	4.8412	8.9068
	tomat 10%	-16.03811 [*]	.60519	.000	-18.0709	-14.0053
	nivea SPF 50	-24.32410 [*]	.60519	.000	-26.3569	-22.2913
	ekstrak tomat	-24.95519 [*]	.60519	.000	-26.9880	-22.9224
tomat 10%	basis	28.88889 [*]	.60519	.000	26.8561	30.9217
	tomat 2%	22.91215 [*]	.60519	.000	20.8794	24.9450
	tomat 5%	16.03811 [*]	.60519	.000	14.0053	18.0709
	nivea SPF 50	-8.28599 [*]	.60519	.000	-10.3188	-6.2532
	ekstrak tomat	-8.91708 [*]	.60519	.000	-10.9499	-6.8843
nivea SPF 50	basis	37.17488 [*]	.60519	.000	35.1421	39.2077
	tomat 2%	31.19814 [*]	.60519	.000	29.1653	33.2309
	tomat 5%	24.32410 [*]	.60519	.000	22.2913	26.3569
	tomat 10%	8.28599 [*]	.60519	.000	6.2532	10.3188
	ekstrak tomat	-.63109	.60519	.894	-2.6639	1.4017
ekstrak tomat	basis	37.80597 [*]	.60519	.000	35.7732	39.8388
	tomat 2%	31.82924 [*]	.60519	.000	29.7964	33.8620

tomat 5%	24.95519*	.60519	.000	22.9224	26.9880
tomat 10%	8.91708*	.60519	.000	6.8843	10.9499
nivea SPF 50	.63109	.60519	.894	-1.4017	2.6639

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

SPF

Tukey HSD^a

Formula	N	Subset for alpha = 0.05				
		1	2	3	4	5
basis	3	.6238				
tomat 2%	3		6.6005			
tomat 5%	3			13.4746		
tomat 10%	3				29.5127	
nivea SPF 50	3					37.7987
ekstrak tomat	3					38.4297
Sig.		1.000	1.000	1.000	1.000	.894

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 17 Buah tomat dan proses ekstraksi



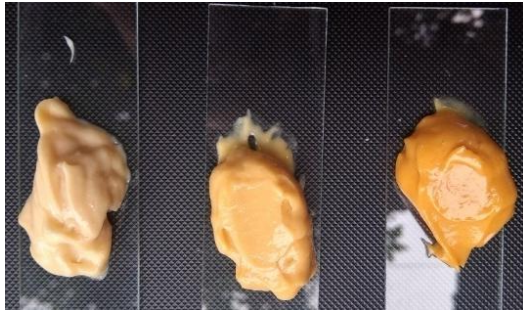
Buah tomat segar



Proses pemekatan ekstrak

Lampiran 18 Hasil uji identifikasi kandungan kimia ekstrak buah tomat**Uji Flavonoid****Uji Alkaloid****Uji Saponin****Uji bebas etanol****Uji kadar air****KLT****KLT****KLT**

Lampiran 19 Pengujian mutu fisik krim ekstrak buah tomat



Formula krim ekstrak buah tomat



Uji daya hantar listrik



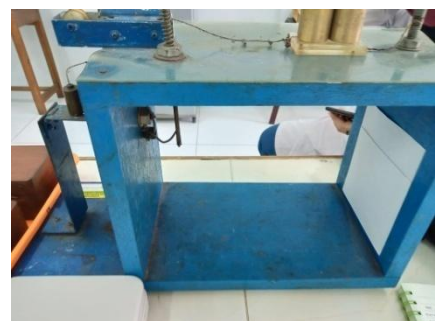
Uji tipe krim metode pengenceran dengan air



Uji Viskositas



Uji Daya Sebar

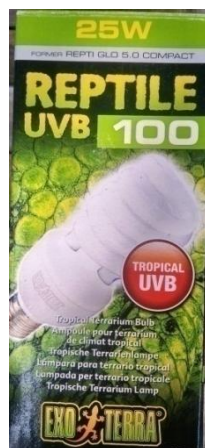


Uji Daya Lekat



Uji Homogenitas Krim

Lampiran 20 Pengujian aktivitas tabir surya secara in vivo



Lampu exoterra UV-B



Tabir surya Nivea SPF 50



**Kelinci jantan galur New Zealand
usia 2 bulan**



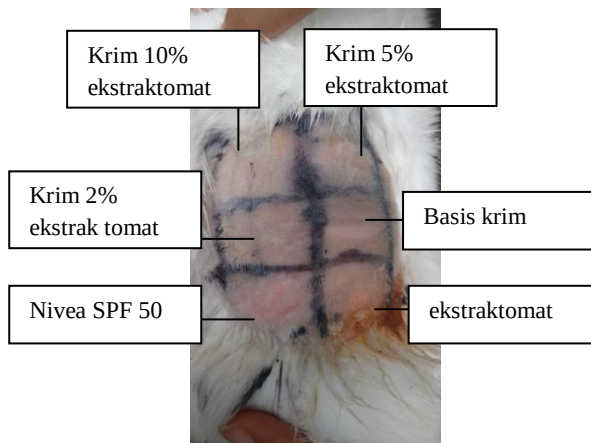
**Proses pencukuran bulu
kelinci**



**Punggung kelinci sebelum
perlakuan**



**Kontrol normal 24 jam
pemaparan UV-B**



Hasil penyinaran 24 jam



Hasil penyinaran 48 jam



Replikasi 2 penyinaran 24 jam



**Replikasi 2 penyinaran 48
jam**



Replikasi 3 penyinaran 24 jam



Replikasi 3 penyinaran 48 jam



Proses pencukuran bulu kelinci



Punggung kelinci sebelum perlakuan



Hasil penyinaran 24 jam



Hasil penyinaran 48 jam