

DAFTAR PUSTAKA

- Aaby K., S. Mazur., A, Nes and G, Skrede. 2012. Phenolic compounds in strawberry (*Fragaria x ananassa Duch.*) fruits: Composition in 27 cultivars and changes during ripening. *Food Chem.* 132 (1): 86-97.
- Amano, K. 1962. The Influence of Fermentation on The Nutritive Value of Fish Special Reference Fish Product of South Asia. *Fish in Nutrition (FAO)*, 7 :180-200.
- Anggraeni, A. A. 2012. Mikrobiologi Pangan. Bahan Ajar. Universitas Negeri Yogyakarta, Yogyakarta.
- AOAC International. 2000. Official Methods of Analysis of AOAC International, Gaithersburg, USA.
- Badan Standarisasi Nasional. 1992. SNI 01-2908-1992. Dendeng Sapi, BSN, Jakarta
- Bouton, P.E., P.V.Harris, W. R. Shorthose. 1971. Effect of ultimate pH upon the water holding capacity and tenderness of mutton. *J. Food Sci.* 36:435-439
- Buckle, K.A., R.A. Edwards, G.H. Fleet dan M. Wotton. 1987. Ilmu Pangan. Terjemahan: H. Purnomo Adiono. Universitas Indonesia Press, Jakarta.
- Chang, C. C., M.H, Yang., H.M, Wen and J.C, Chern. 2002. Estimation of Total Flavonoid Content in Propolis by Two Complementary Colorimetric Methods. *J. Food Drug Anal*, 10 (3) : 178-182.
- D.Ercolini, D., F. Russo, A. Nasi, P. Ferranti, and F. Villani, "Mesophilic and psychrotrophic bacteria from meat and their spoilage potential in vitro and in beef," *Applied and Environmental Microbiology*, 2009, doi: 10.1128/AEM.02762-08.
- Fardiaz, S. 1992. Mikrobiologi Dasar 1. PT. Gramedia Pustaka Utama, Jakarta.
- Febrina N.R, R. 2012. Pengaruh Tingkat Penambahan Nanas (*Ananas comosus*) dan Lama Penyimpanan Terhadap Tingkat Oksidasi Lemak dan Perubahan Kualitas Dendeng Giling Daging Sapi. Skripsi. Fakultas Peternakan. Universitas Hasanuddin, Makassar.
- Gaspersz, V. 1991. Metode Rancangan Percobaan. Arminco, Bandung.
- Hart, H., Craine, L., dan Hart, D. J. 2003. Kimia Organik Edisi II. Jakarta: Erlangga
- Hasheider, P. 2015. The complete book of jerky : how to process, prepare,

- and dry beef, venison, turkey, fish, and more. Voyageur Press, Minneapolis, USA.
- Hawab, H. M. 1999. Pengaruh Pemanasan Beras Menjadi Nasi Sebagai Peubah Turunnya Nilai Nutrien Beras. Buletin Kimia No. 14 hal 69-80.
- Hugas, M. and J. M. Monfort. 1997. Bacterial starter cultures for meat fermentation. *Food Chemistry* (59)4: 547 - 554.
- Irene, R.E.1994. Sorpsi isotermis dendeng sapi giling. Skripsi. Fakultas Teknologi Pertanian. Institut Pertanian Bogor, Bogor
- Karmas, E. dan R. Harris. 1989. Evaluasi Gizi pada Pengolahan Bahan Pangan. Terjemahan: Achmadi, S. Institut Teknologi Bandung Press, Bandung
- Kasir, W. K. 1999. Studi Banding Sifat Kimia dan Organoleptik Abon Sapi, Ayam, Kelinci. Skripsi. Fakultas Peternakan. Institut Pertanian Bogor, Bogor.
- Kinsman, D. M., A. W. Kotula and B. C. Breindenstein. 1994. *Muscle Food, Meat, Poultry and Seafood Technology*. Chapman and Hall, London.
- McLoughlin, J.A. and C.P. Champagne. 1994. Immobilized Cells in Meat Fermentation. *CRC in Biotech.* 14 (2) 179-192.
- Muchtadi, D. 1989. Petunjuk Laboratorium Evaluasi Nilai Gizi Protein. Pusat Antar Universitas Pangan dan Gizi. Institut Pertanian Bogor, Bogor.
- Ojha, S.D., Granato, G. Rajuria, F.J. Barba, J.P. Kerry, and B.K. Tiwari. 2018. Application of chemometrics to assess the influence of ultrasound frequency, *Lactobacillus sakei* culture and drying on beef jerky manufacture: Impact on amino acid profile, organic acids, texture and colour. *J.Food.Chem.* Doi:10.1016/j.foodchem.2017.06.124
- Pearson, A. M. and W. Tauber. 1984. *Processed Meats*. The AVI Publishing Company, Inc. Westport, Connecticut.
- Purnomo, H. 1986. Aspects of The Stability of Intermediate Moisture Meat Phd. Thesis. The University of New South Wales, Australia.
- Purnomo, H. 1997. Studi Tentang Stabilitas Protein Daging Kering dan Dendeng Selama Penyimpanan. Laporan Penelitian. Fakultas Peternakan. Universitas Brawijaya, Malang.
- Price, J. F. dan B. S. Schweigert. 1971. *The Science of Meat and Meat Products*. 2nd Edition. W. H. Freeman and Company, San Fransisco.
- Rogers, R.W., Y.H. Hui, N. Wai-Kit and O.A. Young. 2001. *Meat Science*

- and Applications. Marcel Dekker, Inc: New York.
- Shanks, B. C., D. M. Wulf, B. J. Reuter dan R. J. Maddock. 2002. Increasing tenderness of beef round and sirloin muscles through prerigor skeletal separations. *Journal of Animal Science*. 80 : 123-128.
- Suharyanto. 2007. Karakteristik Dendeng Daging Giling Pada Pencucian (Leaching) dan Jenis Daging yang Berbeda. [Tesis]. Sekolah Pasca Sarjana. Institut Pertanian Bogor, Bogor.
- Suryati, T., M. Astawan., H.N Lioe dan T, Wresdiyati. 2012. Curing ingredients, characteristics, total phenolic, and antioxidant activity of commercial indonesian dried meat product (dendeng). *Media Peternakan*, 35(2):111-116.
- Soeparno. 1998. Ilmu dan Teknologi Daging. Gajah Mada Universitas Press, Yogyakarta.
- Umniyatie, S. 2015. Mengenal Berbagai Macam Mikroba Patogen Pencemar Pangan. *J.Ilm.WUNY*. doi:10.21831/jwuny/v.16i6.4455.
- Varnam, A.N. and J.P. Sutherland. 1995. Meat and Meat Products. Chapman and Hall, London.
- Voyle, C. A. 1981. Scanning Electron Microscopy In Meat Science. Dalam D. N. Holcomb dan M. Kalab. 1981. *Studies of Food Microstructure*. Scanning Electron Microscopy, Inc., Illinois.
- Warris, P. D. 2000. Meat Science. CABI Publishing, London.
- Widjaya, C.H. 2003. Peran Antioksidan Terhadap Kesehatan Tubuh, Healthy Choice. Edisi IV
- Winarno, F. G. 1993. Pangan Gizi, Teknologi dan Konsumen. Gramedia Pustaka Utama, Jakarta.
- Xiong, Y. L. 2000. Meat Processing. Dalam : S. Nakai dan H. W. Modler. 2000. *Food Proteins : Processing Application*. Wiley-VCH, Inc, New York.
- Zulkarnain, D. 2008. Pengaruh Suplementasi Tepung Kunyit sebagai Bahan Antioksidan dalam Ransum terhadap Performa dan Kualitas Karkas Ayam Broiler. Tesis. Universitas Gadjah Mada. Yogyakarta.

LAMPIRAN

Lampiran 1. Hasil analisis varians pengaruh jenis asam organic dan level terhadap pH dendeng sapi

a. Deskripsi data

Descriptive Statistics

Dependent Variable: pH

Jenis Asam	Level Asam	Mean	Std. Deviation	N
1.00	1.00	3.9967	.03786	3
	2.00	4.0167	.12342	3
	3.00	4.0100	.02000	3
	Total	4.0078	.06591	9
2.00	1.00	4.8267	.14468	3
	2.00	4.8300	.17349	3
	3.00	4.7800	.15716	3
	Total	4.8122	.13971	9
3.00	1.00	4.0467	.03786	3
	2.00	4.0367	.13317	3
	3.00	4.0500	.04583	3
	Total	4.0444	.07316	9
Total	1.00	4.2900	.41040	9
	2.00	4.2944	.42092	9
	3.00	4.2800	.38435	9
	Total	4.2881	.38966	27

b. Tabel Anova

Tests of Between-Subjects Effects

Dependent Variable: pH

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.719 ^a	8	.465	36.684	.000
Intercept	496.482	1	496.482	39173.023	.000
Jenis	3.714	2	1.857	146.515	.000
Level	.001	2	.000	.039	.962
Jenis * Level	.005	4	.001	.091	.984
Error	.228	18	.013		
Total	500.429	27			
Corrected Total	3.948	26			

a. R Squared = .942 (Adjusted R Squared = .917)

c. Hasil Uji Duncan Pengaruh Jenis dan Level

pH

Duncan^{a,b}

Jenis Asam	N	Subset	
		1	2
1.00	9	4.0078	
3.00	9	4.0444	
2.00	9		4.8122
Sig.		.498	1.000

Means for groups in homogeneous subsets are displayed.

Based on Type III Sum of Squares

The error term is Mean Square(Error) = .013.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = .05.

Lampiran 2. Hasil analisis varians pengaruh jenis asam organic dan level terhadap aktivitas antidioksidan dendeng sapi

a. Deskripsi data

Descriptive Statistics

Dependent Variable: Aktivitas Antioksidan

Jenis Asam	Level Asam	Mean	Std. Deviation	N
1.00	1.00	65.5767	1.79205	3
	2.00	63.5400	1.57172	3
	3.00	59.8700	1.46164	3
	Total	62.9956	2.86834	9
2.00	1.00	61.9267	5.01538	3
	2.00	69.6000	3.04117	3
	3.00	57.4033	7.47102	3
	Total	62.9767	7.14613	9
3.00	1.00	62.7567	.01155	3
	2.00	64.9100	4.81797	3
	3.00	62.4133	2.04209	3
	Total	63.3600	2.86693	9
Total	1.00	63.4200	3.13638	9
	2.00	66.0167	4.03826	9
	3.00	59.8956	4.49859	9
	Total	63.1107	4.56134	27

b. Tabel anova

Tests of Between-Subjects Effects

Dependent Variable: Aktivitas Antioksidan

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	290.111 ^a	8	36.264	2.602	.044
Intercept	107540.071	1	107540.071	7716.952	.000
Jenis	.840	2	.420	.030	.970
Level	169.897	2	84.949	6.096	.010
Jenis * Level	119.373	4	29.843	2.142	.117
Error	250.840	18	13.936		
Total	108081.022	27			
Corrected Total	540.951	26			

a. R Squared = .536 (Adjusted R Squared = .330)

Lampiran 3. Hasil analisis varians pengaruh jenis asam organic dan level terhadap daya putus dendeng sapi

a. Deskripsi data

Descriptive Statistics

Dependent Variable: Daya Putus dang (kg/cm2)

Jenis Asam	Level Asam	Mean	Std. Deviation	N
1.00	1.00	2.1667	.18175	3
	2.00	2.4233	.68646	3
	3.00	2.5267	.09609	3
	Total	2.3722	.39261	9
2.00	1.00	2.2733	.32393	3
	2.00	2.3233	.40377	3
	3.00	2.4767	.39804	3
	Total	2.3578	.33915	9
3.00	1.00	2.4767	.22143	3
	2.00	2.4133	.76121	3
	3.00	2.5833	.27755	3
	Total	2.4911	.42651	9
Total	1.00	2.3056	.25564	9
	2.00	2.3867	.55290	9
	3.00	2.5289	.25162	9
	Total	2.4070	.37749	27

b. Tabel anova

Tests of Between-Subjects Effects

Dependent Variable: Daya Putus dang (kg/cm2)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.414 ^a	8	.052	.283	.963
Intercept	156.433	1	156.433	855.658	.000
Jenis	.096	2	.048	.264	.771
Level	.230	2	.115	.629	.544
Jenis * Level	.088	4	.022	.120	.974
Error	3.291	18	.183		
Total	160.138	27			
Corrected Total	3.705	26			

a. R Squared = .112 (Adjusted R Squared = -.283)

Lampiran 4. Hasil analisis varians pengaruh jenis asam organic dan level terhadap susut masak dendeng sapi

a. Deskripsi data

Descriptive Statistics

Dependent Variable: Susut Masak (%)

Jenis Asam	Level Asam	Mean	Std. Deviation	N
1.00	1.00	19.6667	.02082	3
	2.00	19.8633	.02517	3
	3.00	20.0433	.03055	3
	Total	19.8578	.16468	9
2.00	1.00	19.6133	.04041	3
	2.00	19.7700	.07810	3
	3.00	20.0067	.05508	3
	Total	19.7967	.17916	9
3.00	1.00	19.6933	.15503	3
	2.00	19.9200	.03606	3
	3.00	20.0933	.03786	3
	Total	19.9022	.19201	9
Total	1.00	19.6578	.08814	9
	2.00	19.8511	.07944	9
	3.00	20.0478	.05263	9
	Total	19.8522	.17751	27

b. Tabel anova

Tests of Between-Subjects Effects

Dependent Variable: Susut Masak (%)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.740 ^a	8	.093	21.064	.000
Intercept	10640.990	1	10640.990	2422485	.000
Jenis	.051	2	.025	5.755	.012
Level	.684	2	.342	77.911	.000
Jenis * Level	.005	4	.001	.295	.878
Error	.079	18	.004		
Total	10641.809	27			
Corrected Total	.819	26			

a. R Squared = .903 (Adjusted R Squared = .861)

c. Hasil Uji Duncan Pengaruh Jenis dan Level

Susut Masak (%)

Duncan^{a,b}

Jenis Asam	N	Subset	
		1	2
2.00	9	19.7967	
1.00	9	19.8578	19.8578
3.00	9		19.9022
Sig.		.066	.172

Means for groups in homogeneous subsets are displayed.

Based on Type III Sum of Squares

The error term is Mean Square(Error) = .004.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = .05.

Susut Masak (%)

Duncan^{a,b}

Level Asam	N	Subset		
		1	2	3
1.00	9	19.6578		
2.00	9		19.8511	
3.00	9			20.0478
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on Type III Sum of Squares

The error term is Mean Square(Error) = .004.

a. Uses Harmonic Mean Sample Size = 9.000.

b. Alpha = .05.

Lampiran 5. Hasil analisis varians pengaruh jenis asam organik dan level terhadap diameter serat otot dendeng sapi

a. Deskripsi data

Descriptive Statistics

Dependent Variable: Diameter Serat (micron)

Jenis Asam	Level Asam	Mean	Std. Deviation	N
1.00	1.00	22.8267	6.13314	3
	2.00	26.8467	2.13739	3
	3.00	31.0033	11.22822	3
	Total	26.8922	7.38927	9
2.00	1.00	29.4700	5.38200	3
	2.00	26.4400	12.71966	3
	3.00	27.7167	14.15663	3
	Total	27.8756	9.97632	9
3.00	1.00	25.9600	9.15400	3
	2.00	25.7800	10.23923	3
	3.00	20.5967	9.90081	3
	Total	24.1122	8.86702	9
Total	1.00	26.0856	6.77335	9
	2.00	26.3556	8.24726	9
	3.00	26.4389	11.28502	9
	Total	26.2933	8.61705	27

b. Tabel anova

Tests of Between-Subjects Effects

Dependent Variable: Diameter Serat (micron)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	238.420 ^a	8	29.802	.317	.949
Intercept	18666.163	1	18666.163	198.556	.000
Jenis	68.574	2	34.287	.365	.699
Level	.614	2	.307	.003	.997
Jenis * Level	169.232	4	42.308	.450	.771
Error	1692.173	18	94.010		
Total	20596.756	27			
Corrected Total	1930.593	26			

a. R Squared = .123 (Adjusted R Squared = -.266)

Lampiran 6. Hasil analisis varians pengaruh jenis asam organic dan level terhadap Panjang sarkomer dendeng sapi

a. Deskripsi data

Descriptive Statistics

Dependent Variable: Panjang Sarkomer (mikron)

Jenis Asam	Level Asam	Mean	Std. Deviation	N
1.00	1.00	1.4367	.04933	3
	2.00	1.4133	.09866	3
	3.00	2.0467	.74608	3
	Total	1.6322	.48879	9
2.00	1.00	2.1167	.22030	3
	2.00	2.2233	.61068	3
	3.00	1.7267	.88692	3
	Total	2.0222	.59439	9
3.00	1.00	2.5667	.58141	3
	2.00	2.0300	.39837	3
	3.00	1.7300	.16823	3
	Total	2.1089	.51576	9
Total	1.00	2.0400	.58307	9
	2.00	1.8889	.51919	9
	3.00	1.8344	.60682	9
	Total	1.9211	.55561	27

b. Tabel anova

Tests of Between-Subjects Effects

Dependent Variable: Panjang Sarkomer (mikron)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.422 ^a	8	.428	1.673	.173
Intercept	99.648	1	99.648	389.600	.000
Jenis	1.160	2	.580	2.269	.132
Level	.204	2	.102	.399	.677
Jenis * Level	2.058	4	.514	2.011	.136
Error	4.604	18	.256		
Total	107.674	27			
Corrected Total	8.026	26			

a. R Squared = .426 (Adjusted R Squared = .171)

Lampiran 7. Dokumentasi Hasil Penelitian Dendeng Sapi



Proses Pemotongan Sampel



Proses Penimbangan Sampel



Proses Pencampuran Bahan Dengan Sampel Penelitian



Proses Pelabelan Sampel Dan Di Masukkan Di Dalam Plastic Clip



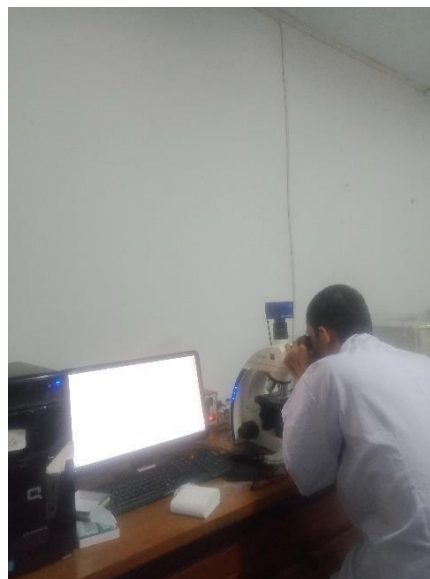
Proses Pengeringan Sample Setelah Di Masukkan Ke Dalam Water Bath



Penimbangan Ulang Setelah Sampel Kering



Proses Melihat Panjang dan Diameter Serat Otot Sampel Dalam Mikroskop



Proses Pengukuran Panjang Dan Diameter Serat Otot

RIWAYAT PENULIS



R. H. Muh. Anugerah. Lahir di Sangir, Kepulauan Sangir dan Talaud, Provinsi Sulawesi Utara. Pada tanggal 30 Maret 1993, anak tunggal dari pasangan (Alh) Ayahanda Oye Koesharianto dan Ibunda Tersayang Salmah A. Nur. Jenjang pendidikan yang telah ditempuh yaitu, Sekolah Dasar Negeri IKIP Tala lulus pada tahun 2005, Sekolah

Menengah Pertama Negeri 1 Ma'rang, lulus pada tahun 2007, selanjutnya Sekolah Madrasah Aliyah Negeri Pangkep, lulus tahun 2011, selanjutnya Kuliah di Universitas Hasanuddin Jurusan Peternakan, Program Studi Ilmu Peternakan, lulus tahun 2018. Kemudian penulis melanjutkan pendidikan kejenjang Strata 2 (S2) di Universitas Hasanuddin Makassar, Jurusan Ilmu dan Teknologi Peternakan pada tahun 2019.

Selama kuliah penulis pernah mengikuti kegiatan organisasi kampus yaitu Himpunan Mahasiswa Teknologi Hasil Ternak (HIMATEHATE) sebagai anggota Departemen Kerohanian selama 3 periode.