DAFTAR PUSTAKA

Ali Karami et al., 2017. “Microplastics in eviscerated flesh and excised organs of dried fish”, 7 Sci. Rep. https://www.nature.com/articels/s41598-017-05828-6. diakses pada tanggal 20 Agustus 2020

Andrady, A.L., 2017. *The plastic in microplastics: a review*. Mar. Pollut. Bull. 119 (1),12– 22.

Anggreini, A.P., S.S. Astuti, I. Miftahudin, P. I. Novita, D.G.R Wiadnya. “Uji Selektivitas Alat Tangkap Gillnet Millenium terhadap Hasil Tangkapan Ikan Kembung (Rastrelliger brachysoma)”. Journal of Fisheries and Marine Science. 1 (1), 2017.

Badan Penelitian dan Pengembangan Pertanian. Departemen Pertanian. 1993. “Pedoman teknis pengelolaan dan pemanfaatan sumberdaya perikanan cakalang di Indonesia”. Pusat Penelitian dan Pengembangan Perikanan. Jakarta. 83 hlm

Barnes, D.K., Galgani, F., Thompson, R.C., Barlaz, M., 2009. “Accumulation and fragmentation of plastic debris in global environments”. Philos. Trans. R. Soc. Lond. Ser. B Biol. Sci. 364 (1526), 1985–1998

Bailly N. 2010. “Rastrelliger brachysoma/Short mackerel” (Bleeker, 1851). [terhubung berkala]. www.fishbase.org. [Dember 2019].

Bellas, J., Martinez-Armental, J., Martinez-Camara, A., Besada, V., Martinez-Gomez, C., 2016. “Ingestion of microplastics by demersal fish from the Spanish Atlantic and Mediterranean coasts”. Mar. Pollut. Bull. 109 (1), 55–60.

Barnes, D.K., Galgani, F., Thompson, R.C., Barlaz, M., 2009. “Accumulation and fragmentation of plastic debris in global environments”. Philos. Trans. R. Soc. Lond. Ser. B Biol. Sci. 364 (1526), 1985–1998.

Bravo Rebolledo, E.L., Van Franeker, J.A., Jansen, O.E., Brasseur, S.M., 2013. "Plastic ingestion by harbour seals (Phoca vitulina) in the Netherlands". Mar. Pollut. Bull. 67, 200–202.

Broom, M.J. 1985. "The Biology and Culture of Marine Bivalve Molluscs of the Genus Anadara". ICLARM (International Center for Living Aquatic Resouces Management) Manila Philippines.

Browne, M.A., Crump, P., Niven, S.J., Teuten, E., Tonkin, A., Galloway, T.S., Thompson, R.C., 2011. "Accumulation Of Microplastic On Shorelines Worldwide". Sources And Sinks. Environmental. Sci. Technol. 45 (21), 9175–9179.

Boucher, J., and D. Friot. 2017. *"*a Global Evaluation of Sources Primary Microplastics in the Oceans"*:* A Global Evaluation of Sources.

Chandra M, Sitompul , Iskandar; HS, Tomo; K., Synthesa Praharani; Sondakh, Gitrix M (2007). "Kekayaan Laut Indonesia". hal. 3-5. Jakarta :Sekretariat Dewan Maritim Indonesia - Departemen Kelautan dan Perikanan.

Carbery, Maddison, Wayne O Connor, and Palanisami Thavamani. 2018. “Trophic Transfer of Microplastics and Mixed Contaminants in the Marine Food Web and Implications for Human Health.” Enviromental International (March).

Carpenter, K.E. and V.H. Niem . 1998. "The living marine reaources of the Western Central Pasific. Seaweeds, coral, bivalvia and gastropods". Vol. 1. Rome FAO: 686 pp.

Carpenter, Kent E,Volker H, Niem . 2001. FAO "Species Identification Guide: The Living Marine Resources Of The Western Pacific". Vol. 6:3736. Food and Agriculture Organization, Rome.

Carr KE, Smyth SH, McCullough MT,Morris JF Moyes SM, 2012: "Morpological aspects of interactions between micrplasticles and mammalian cell: Intestinal uptake and onward movement. Pro Histochem Cytochem, 46 (4): 185-252, http://doi.org/10.1016/j.proghi.2011.11.001

Crawford, Christopher Blair, and Brian Quinn. 2017. “Microplastics, Standardisation and Spatial Distribution.” In Microplastic Pollutants, , 101–30.

Cox KD, Coverton GA, Davies HL, et al. 2019. "Human consumption of microplastics". Environ Sci Technol; 53:7068-74 [PMID:31184127] doi:10.1021/acs.9b01517

Cummings, J (1994) "Polisakarida Non-Pati (Serat Makanan) Termasuk Obat Pencahar Massal Disembelit". Dalam: Kamm, M dan Lennard-Jones, J (eds) Wrightson Biomedis Publishing Ltd, Hampshire: pp.307-314

Daud, A., Ishak, H. 2019. "Kesehatan LIngkungan Kontemporer". Gosyen Publishing. Yogyakarta: No 098/DIY/2017. xvi, 513 halaman.

Daud Anwar. 2020. "Dampak Lingkungan dan Kesehatan Mikroplastik dan Nanoplastik". Gosyen Publishing: Yogyakarta, 55285. ISBN 978-602-5411-81-6, 423 halm.

Desforges, J.P.W., Galbraith, M., Dangerfield, N., Ross, P.S., 2014. "Widespread Distribution Of Microplastics In Subsurface Seawater In The NE Pacific Ocean". Mar. Pollut. Bull. 79, 94–99

Di, Mingxiao, and Jun Wang. 2018. “Microplastics in Surface Waters and Sediments of the Three Gorges Reservoir, China.” Science of the Total Environment 616–617: 1620–27. https://doi.org/10.1016/j.scitotenv.2017.10.150.

Digka, Nikoletta., Trangaris, Chaterine.,Torre M.,Zeri C. 2018. "Microplastics in mussels and fish from the Northern Ionian Sea". Marine Pollution Bulletin. journal homepage: www.elsevier.com/locate/marpolbul. diakses pada tanggal 10 November 2020.

Direktorat Jendral PP dan PL Kementeriann Kesehatan. 2012. "Pedoman Analisis Risiko Kesehatan Ligkungan (ARKL)": Bakti Husada, Hal 1-82

Direktorat Jenderal Peningkatan Kapasitas Kelembagaan dan Pemasaran. 2004. "Direktori Ikan Konsumsi dan Produk Olahan". Departemen Kelautan dan perikanan. Jakarta.

Dris R, Gasperi J, Saad M, Mirande C, Tassin B, 2016. "Syntetic fibers in atmospheric fallout: a source of microplastics in the enviroment?" Mar Pollut Bull, 104 (1-2):290-293., http://doi.org/10.1016/j.marpolbul.2016.01.006

EnHealth. 2002. “Environmental Risk Assessment: Guidelines for Assessing Human Health Risks from Environmental Hazards.” Department of Health and Ageing Population.Diakses pada tanggal 12 Januari 2020

Eriksen, M., Lebreton, L.C.M., Carson, H.S., Thiel, M., Moore, C.J., Borerro, J.C., Galgani, Evans, G.T., 1989. "The Encounter Speed Of Moving Predator And Prey". J. Plankton Res. 11, 415–417.

FAO. 2001. Species Identification Guide: "The Living Marine Resources of The Western Pacific". Vol. 6: 3737-3739. Food and Agriculture Organization, Rome.

FAO/WHO (1995) Food Standards Programme. "Joint FAO/WHO Expert

Consultation On The Application Of Risk Analysis To Food Standards Issues". Recommendations to the Cod*ex Alimentarius Commission*. ALINORM 95/9, p. 15. Diakses pada tanggal 22 Desember 2019.

Frias, J et al. 2018 "Ocurrece Of Microplastic In Commercial Fish From A Natural Esturia Environment". Marine Pollution Bulletin 128 575-584, sciencediret.com. diakses pada tanggal 17 Oktober 2020.

Frose, R and D. Pauly.Editor. (2020). Fishbase. "Decapterus macrosoma Bleeker, 1851. Accessed through: world Resgister of marine species": http://www.marinespecies.org/alphia.php?p=taxdetails&id=218426 0n 2020- 08-03.

Gabriel, Luís et al. 2018. “Marine Microplastic Debris : An Emerging Issue for Food Security , Food Safety and Human Health.” Marine Pollution Bulletin 133(January): 336–48. https://doi.org/10.1016/j.marpolbul.2018.05.047.

GESAMP 2019 "Guidelines for the monitoring & assessment of plastic litter in the ocean".Reports & Studies 99 (editors Kershaw, P.J., Turra, A. and Galgani, F.) diakses pada tanggal 11 Januari 2020.

Gotaas, Harold Benedict & World Health Organization. (1956). "Composting : Sanitary Disposal And Reclamation Of Organic Wastes". Health Organization. https://apps.who.int/iris/handle/10665/41665.

Ghufran, M dan Kordi K. 2004. "Penanggulangan Hama dan Penyakit Ikan". Penerbit Bina Adiaksa dan Rineka Cipta. Jakarta. 190 hal.

Graca, B., Szewc, K., Zakrzewska, D., Dolega, A., Szczerbowska-Boruchowska, M., 2017. "Sources and fate of microplastics in marine and beach sediments of the southern Baltic Sea- a preliminary study. Environ". Sci.Pollut.Res. 24, 7650 – 7661.

Hafidh, Dimas, I Wayan Restu, and Ni Made. 2018. “Kajian Kelimpahan Mikroplastik Di Perairan Teluk Benoa Provinsi Bali.” Current Trends in Aquatic Science 88: 80–88. http://snasppm.unirow.ac.id.id/eprosiding6-pencemaran-mikroplastik-di-sepanjang-pantai-kabupaten-tuban.html.

Hajra, Nano. 2020. " Analisis Risiko Pajanan Mikroplastik Melalui Konsumsi Kerang pada Masyarakat di Kawasan Pesisir Desa Pa’lalakkang Kecamatan Galesong Kabupaten Takalar". Tesis Magister Kesehatan Masyarakat Universitas Hasanuddin Tahun 2020.

Hwang, Jangsun et al. 2019. “An Assessment of the Toxicity of Polypropylene Microplastics in Human Derived Cells.” Science of the Total Environment 684: 657–69.

https://doi.org/10.1016/j.scitotenv.2019.05.071.

Hidalgo-Ruz, V., Gutow, L., Thompson, R. C., & Thiel, M. (2012). "Microplastics In The Marine Environment: A Review Of The Methods Used For Identification And Quantification". Science & Technology, 46, 3060–75. https://doi.org/10.1021/es203150

Jambeck, J. R., Geyer, R., Wileox, C., Siegler, T. R., Perryman, M., Andrady, A, Lavender Law, K. 2015. "Plastic Waste Inputs From Land Into The Ocean. Plastic Waste Inputs From Land Into The Ocean". (January), 1655– 1734. https://doi.org/10.1017/ CBO9781107415386.010.

Jahan, S. et al. 2019. "Interrelationship of Microplastic Pollution in Sediments and Oysters in a Seaport Environment of the Eastern Coast of Australia." Science of the Total Environment 695: 133924. https://doi.org/10.1016/j.scitotenv.2019.133924.

Joesidawati, Marita Ika. 2018. "Pencemaran Mikroplastik Di Sepanjang Pantai Kabupaten Tuban." SNasPPM 2580–3921(September). http://snasppm.unirow.ac.id.id/eprosiding6-pencemaran-mikroplastik-di-sepanjang-pantai-kabupaten-tuban.html.

Kinjo, Azusa, Kaoruko Mizukawa, Hideshige Takada, and Koji Inoue. 2019. "Size-Dependent Elimination of Ingested Microplastics in the Mediterranean Mussel Mytilus Galloprovincialis." Marine Pollution Bulletin 149(April): 110512. https://doi.org/10.1016/j.marpolbul.2019.110512.

KLHK [Kementrian Lingkungan Hidup dan Kehutanan]. Retrieved January 4, 2018, from www.menlhk.go.id.

Kovač Viršek M, Palatinus A, Koren Š, Peterlin M, Horvat P, Kržan A.. 2016. "Protocol for Microplastics Sampling on the Sea Surface and Sample Analysis". J Visual Exp 118: 1-9.

Laskar, N and Kumar,U. 2019. "Plastic and microplastic". A threat to environment. Enviromental Technology & Innovation . https://doi.org/10.1016/j.eti.2019.100352. diakses pada tanggal 12 Oktober 2020.

Lebreton, L.C.M., van der Zwet, J., Damsteeg, J.-W., Slat, B., Andrady, A., Reisser, J., 2017. "River Plastic Emissions To The World's Oceans". Nat. Commun. 8, 15611

Lewis SJ, Heaton KW. *1997. "*Skala Bentuk Feses Sebagai Panduan Yang Berguna Untuk Waktu Transit Usus".Jurnal Skandinavia Gastroenterologi . 32 (9): 920-24. http://doi.org *:* 10.3109 / 00365529709011203 *.* PMID 9299672 *.*

Linaeus. 1758. "Perna Viridis". World Register of Marine Species at htp:/www.marine species.org/traits/aphia.php? Di akses pada tanggal 27 Desember 2019

Linaeus. 1758. "*Anadara granosa*. World Register of Marine Species at htp:/www.marinespecies.org/traits/aphia.php? Di akses pada tanggal 27 Desember 2019

Liu, Kai et al. 2019. “Accurate Quantification and Transport Estimation of Suspended Atmospheric Microplastics in Megacities : Implications for Human Health.” Environment International 132(August): 105127. https://doi.org/10.1016/j.envint.2019.105127.

Lo, H.-S., Xu, X., Wong, C.-Y., Cheung, S.-G., 2018. "Comparisons Of Microplastic Pollution Between Mudflats And Sandy Beaches In Hong Kong". Environ. Pollut. 236, 208–217. https://doi.org/10.1016/j.envpol.2018.01.031

Lozoya, J.P., de Mello, F., Carrizo, D., Weinstein, F., Olivera, Y., Cedr es, F., Pereira, M., Fossati, M., 2016. "Plastics And Mikroplastics On Recreational Beaches In Punta Del Este (Uruguay)": unseen critical res-idents? Environ.Polunt.218,931-941.

Lusher, A. L., Peter H & Jeremy M. (2017)." Microplastics in Fisheries and Aquaculture. Roma": Food and Agriclture Organization (FAO) of The United Nations.

Lu, Liang et al. 2019. “Interaction between Microplastics and Microorganism as Well as Gut Microbiota: A Consideration on Environmental Animal and Human Health.” Science of the Total Environment 667: 94–100. https://doi.org/10.1016/j.scitotenv.2019.02.380.

Marton, B and M. Peharda. 2008. "The Biology and functional Morphology of Arca Noae (Bivalviae: Arcidae) from The Adriatic Sea, Croatia, With a discussion on the evolution of The Bivalviae Mantle Margin". Acta Zoologica (Stockholm) 89: 19-28

Mason SA, Garneau d, Sutton R, Chu Y, Ehmann K, Barness J, Fink P, Papazissimos D, Rgers DL., 2016. "Microplastic Pollution Is Widely Detected In US Municipal Wastewater Treatment Plant Effluent". Environ Poll. 218: 1045, http://doi.org/10.1016/j.envpol.2016.08.056

Miller, M.E., Kroon, F.J., Motti, C.A., 2017. "Recovering Microplastics From Marine Samples: A Review Of Current Practices". Mar. Pollut. Bull. 123 (1–2), 6–18. https://doi.org/10.1016/j.marpolbul.2017.08.058

Naik, Ravidas Krishna, Milind Mohan Naik, Priya Mallika D’Costa, and Fauzia Shaikh. 2019. “Microplastics in Ballast Water as an Emerging

Source and Vector for Harmful Chemicals, Antibiotics, Metals, Bacterial Pathogens and HAB Species: A Potential Risk to the Marine Environment and Human Health." Marine Pollution Bulletin 149(July): 110525. https://doi.org/10.1016/j.marpolbul.2019.110525.

Nelms, S.E., Duncan, E.M., Broderick, A.C., Galloway, T.S., Godfrey, M.H., Hamann, M., Lindeque, P.K., Godley, B.J., 2016. "Plastic And Marine Turtles: A Review And Call For Research". ICES J Mar. Sci. 73 (2), 165–181

Nie, Huayue et al. 2019. "Microplastic Pollution in Water and Fish Samples around Nanxun Reef in Nansha Islands, South China Sea." Science of the Total Environment 696: 134022. https://doi.org/10.1016/j.scitotenv.2019.134022.

Nontji, A. 1987 "Laut Nusantara". Penerbit Djambatan. Jakarta

Notoatmodjo S. 2010. Metodologi Penelitian Kesehatan.Jakarta: rineka cipta

Prabhu Kolanfhasyamy et al., 2017. "Adherence Of Microplastics To Soft Tissue Of Mussels: A Novel Way To Uptake Microplastics Beyond Ingestion". 610-11 Sci. of The Total Environ 635, 635-40 https://doi.org/10.1016/j.scitotenv.2017.08.053

Ryan, P.G., Reisser, J., 2014. "Plastic Pollution In The World's Oceans: More Than 5 Trillion Plastic Pieces Weighing Over 250,000 Tons Afl Oat At Sea". PLoS One, 9e111913.

Rochman, Chelsea M et al. 2015. "Anthropogenic Debris in Seafood : Plastic Debris and Fibers from Textiles in Fish and Bivalves Sold for Human Consumption." Nature Publishing Group (August): 1–10.

Saanin, H .1984. "Taksonomi dan Kunci Identifikasi Ikan". Jilid I. Binatjipa. Bandung

Saley, A. M. et al. 2019. "Microplastic Accumulation and Biomagnification in a Coastal Marine Reserve Situated in a Sparsely Populated Area." Marine Pollution Bulletin 146(February): 54–59. https://doi.org/10.1016/j.marpolbul.2019.05.065.

Schwab, Philipp, Bettina Liebmann, Sebastian Köppel, and Thomas Reiberger. 2018. "Assessment of Microplastic Concentrations in Human Stool - Preliminary Results of a Prospective Study." Presented at United European Gastroenterology (UEG) Week 2018, Vienna, Austria, 24 October 2018: 1–16.

Septami, Ervina. 2020. "Microplastic Identification in The Fecces of Pregnant Women".Saudi Journal of Biomedical Research.ISSN 2518-

3222(online). https://saudijournals.com/sibr. diakses pada tanggal 02 November 2020.

Setala, Outi, Maiju Lehtiniemi, Rachel Coppock, and Matthew Cole. 2018. “Microplastics in Marine Food Webs.” In Microplastic Contamination in Aquatic Environments, , 339–63.

Soeparman H.M. 2002. "Pembuangan Tinja & Limbah Cair". Jakarta : Buku Kedokteran, 612.36 SOE

Smith, Madeleine, David C. Love, Chelsea M. Rochman, and Roni A. Neff. 2018. “Microplastics in Seafood and the Implications for Human Health.”

Syakti, A. D., Bouhroum, R., Hidayati, N. V., Koenawan, C. J., Boulkamh, A., Sulistyo, I., Wong-Wah-Chung, P. (2017). "Beach Macro-Litter Monitoring And Floating Microplastic In A Coastal Area Of Indonesia". Marine Pollution Bulletin, 122(1– 2), 217– 225. https://doi.org/10.1016/j.marpolbul.2017.06.046

Suwignyo P, J. Basmi, L.B. Djamar. 1984. 1984. "Studi Beberapa Aspek Biologi Kerang Hijau Mytilus viridis di Teluk Jakarta". Fakultas Perikanan Institut PertanianBogor: 101 hal. sumber: www.oseanografi.lipi.go.id. Diakses pada tanggal 20 Desember 2019

Suwignyo, S., B.Widigdo, Y.Wardiatno dan M. Krisanti. 2005. "Avertebrata Air". Jllid I. Cetakan I. Penebar Swadaya. Jakarta. 204 hal

Tortora GJ, Anagnostakos *NP .*1987. "Prinsip anatomi dan fisiologi (Fifth ed.)". New York: Harper & Row, *Penerbit. hal.624 . ISBN 978-0-06-350729-6 .*

USEPA. 2000. "Supplementary Guidance For Conducting Health Risk Assessment Of Chemical Mixtures". EPA/630/R-00/002, Aug 2000. http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=20533. Diakses pada tanggal 20 Desember 2019

USEPA. 2019. "Health Risk Assessment Of Chemical Mixtures". EPA/630/R-00/002,http://www.epa.gov/irishttp://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=20533. Diakses pada tanggal 20 September 2020

USFDA. (2000). "Guidance For Industry: Action Levels For Poisonous Or Deleterious Substances In Human Food And Animal Feed. US Department Of Health And Human Services". diakses pada tanggal 20 Desember 2019

United Nations Environment Programme. 2016. UNEP Frontiers 2016 Reports: "Emerging issues of environmental Concern". UNEP, Nairob.

Diakses pada tanggal 25 September 2020

Yonvitner et al. 2017. "Review Indikator Dari Indek Psa Noaa Untuk Ikan Pelagis Kecil (Tembang: Sardinella Sp.; Famili Clupeidae) Dan Ikan Demersal (Kurisi: Nemipterus Sp.; Famili Nemipteridae)". Marine Fisheries. Vol. 8, No. 2, November 2017. Hal: 123-135. ISSN 2087-4235

Wariyono, S (2008). "Mari Belajar Ilmu Alam Sekitar". Jakarta: Pusat Perbukuan Departemen Pendidikan Nasional. ISBN 979-462-995-2

Widianarko, Budi, and Inneke Hantoro. 2018. "Mikroplastik Dalam Seafood Dari Pantai Utara Jawa". ed. Andreas Dian Prasetyo. Universitas Katolik Soegijapranata.

Wiriyaphan C, H Xiao, EA Decker, J Yongsawatdigul. 2015. "Chemical and Cellular Antioxidative Properties of Threadfin Bream (Nemipterus spp.)" Surimi by Product Hydrolysates Fractionated by Ultrafiltration. Food Chemistry Journal, Elsevier. 167(2015):7–15.

WHO. 2019. "Microplastics In Drinking-Water". Sumber: http://apps.who.int/iris. diakses pada tanggal 18 Desember 2019

Wright, Stephanie L, and Frank J Kelly. 2017. “Plastic and Human Health: A Micro Issue?”

Zhao, J., Ran, W., Teng, J., Liu, Y., Liu, H., Yin, X., Cao, R., Wang, Q., 2018. "Microplastic pollution in sediments from the Bohai Sea and the Yellow Sea, China". Sci. Total Environ. 640–641, 637–645. https://doi.org/10.1016/j.scitotenv.2018.05.346

Zhu, Lin et al. 2019. “Microplastic Ingestion in Deep-Sea Fish from the South China Sea.” *S*cience of the Total Environment 677: 493–501. https://doi.org/10.1016/j.scitotenv.2019.04.380.

Lampiran 1

Surat Izin Penelitian

PEMERINTAH PROVINSI SULAWESI SELATAN
DINAS PENANAMAN MODAL DAN PELAYANAN TERPADU SATU PINTU
BIDANG PENYELENGGARAAN PELAYANAN PERIZINAN

Nomor : 2579/S.01/PTSP/2020
Lampiran : -
Perihal : Izin Penelitian

Kepada Yth.
Bupati Takalar

di-
Tempat

Berdasarkan surat Dekan Fak. Kesehatan Masyarakat UNHAS Makassar Nomor : 3818/UN4.14/PT.01.04/2020 tanggal 08 Juni 2020 perihal tersebut diatas, mahasiswa/peneliti dibawah ini:

Nama : LISAWATI NURTANG
Nomor Pokok : K012181027
Program Studi : Kesehatan Masyarakat
Pekerjaan/Lembaga : Mahasiswa(S2)
Alamat : Jl. P. Kemerdekaan Km. 10, Makassar

Bermaksud untuk melakukan penelitian di daerah/kantor saudara dalam rangka penyusunan Tesis, dengan judul :

" ANALISIS RISIKO PAJANAN MIKROPLASTIK MELALUI KONSUMSI IKAN TERI (STOLEPHORUS SP) PADA MASYARAKAT DI KAWASAN PESISIR DESA TAMASAJU KECAMATAN GALESONG UTARA KABUPATEN TAKALAR "

Yang akan dilaksanakan dari : Tgl. *12 Juni s/d 16 Juli 2020*

Sehubungan dengan hal tersebut diatas, pada prinsipnya kami *menyetujui* kegiatan dimaksud dengan ketentuan yang tertera di belakang surat izin penelitian.

Demikian Surat Keterangan ini diberikan agar dipergunakan sebagaimana mestinya.

Diterbitkan di Makassar
Pada tanggal : 10 Juni 2020

A.n. GUBERNUR SULAWESI SELATAN
Plt. KEPALA DINAS PENANAMAN MODAL DAN PELAYANAN TERPADU SATU PINTU PROVINSI SULAWESI SELATAN
Selaku Administrator Pelayanan Perizinan Terpadu

Ir. IFFAH RAFIDA DJAFAR, ST., MT.
Nip : 19741021 200903 2 001

Tembusan Yth
1. Dekan Fak. Kesehatan Masyarakat UNHAS Makassar di Makassar;
2. Pertinggal.

SIMAP PTSP 10-06-2020

Jl.Bougenville No.5 Telp. (0411) 441077 Fax. (0411) 448936
Website : http://simap.sulselprov.go.id Email : ptsp@sulselprov.go.id
Makassar 90231

No. SEM 0145

PEMERINTAH KABUPATEN TAKALAR
DINAS PENANAMAN MODAL, PELAYANAN
TERPADU SATU PINTU, TENAGA KERJA DAN TRANSMIGRASI
Jl. Jenderal Sudirman No.28 Telp. (0418) 323291 Kab. Takalar

Takalar, 11 Juni 2020

Nomor : 132/IP-DPMPTSPTT/VI/2020
Lamp. : -
Perihal : ***Izin Penelitian***

Kepada,
Yth. Kepala Desa Tamasaju
Galesong Utara Kab. Takalar
Di-
Takalar

Berdasarkan Surat Kepala Dinas Penanaman Modal dan PTSP Prov. Sul-Sel Nomor: 2579/S.01/PTSP/2020 Tanggal 10 Juni 2020, perihal Permohonan Izin Pengambilan Data Awal, dengan ini disampaikan bahwa:

Nama	:	**LISAWATI NURTANG**
Tempat Tanggal Lahir	:	Sarawak, 11 Janurai 1992
Jenis Kelamin	:	Perempuan
Pekerjaan/Lembaga	:	Mahasiswa/ (S2) UNHAS Makassar
Alamat	:	Jl. Urip Sumoharjo Aspol Panaikang Blok E/33 Makassar

Bermaksud akan mengadakan penelitian di kantor/instansi/wilayah kerja Bapak/Ibu dalam Rangka Penyusunan ***Tesis*** dengan judul :

"ANALISIS RESIKO PAJANAN MIKROPLASTIK MALALUI KOMSUMSI IKAN TERI (STOLEPHORUS SP) PADA MASYARAKAT DI KAWASAN PESISIR DESA TAMASAJU KECAMATAN GALESONG UTARA KABUPATEN TAKALAR"

Yang akan dilaksanakan : Tgl. 12 Juni s/d 16 Juli 2020
Pengikut / Peserta : -

Sehubungan dengan hal tersebut di atas pada prinsipnya kami menyetujui kegiatan dimaksud dengan ketentuan sbb :

1. Sebelum dan sesudah melaksanakan kegiatan dimaksud kepada yang bersangkutan harus melapor kepada Bupati Takalar Up. Kepala Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu, Tenaga Kerja dan Transmigrasi Kab. Takalar ;
2. Penelitian tidak menyimpang dari ketentuan yang berlaku ;
3. Mentaati semua Peraturan Perundang-Undangan yang berlaku dan Adat Istiadat setempat;
4. Menyerahkan 1 (satu) examplar foto copy hasil *Tesis* kepada Bupati Takalar Up. Kepala Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu Tenaga Kerja dan Transmigrasi Kab. Takalar ;
5. Surat pemberitahuan penelitian ini dicabut kembali dan dinyatakan tidak berlaku, apabila ternyata pemegang tidak mentaati ketentuan tersebut diatas.

Demikian disampaikan kepada saudara untuk diketahui dan seperlunya.

Kepala Dinas

Drs. IRWAN YUNUS
Pangkat : Pembina Utama Muda
NIP : 19620820 198302 1 005

Tembusan : disampaikan kepada Yth :
1. Bupati Takalar di Takalar (sebagai laporan);
2. Kepala Bapelitbang Kab. Takalar di Takalar;
3. Kepala Dinas Kesehatan Kab. Takalar di Takalar;
4. Kepala Kantor Kesbagpol Kab. Takalar di Takalar;
5. Dekan Fakultas Keshatan Masyarakat UNHAS Makassar di Makassar;
6. Pertinggal

2020

Lampiran 2

Surat Rekomendasi Etik

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN
FAKULTAS KESEHATAN MASYARAKAT
KOMITE ETIK PENELITIAN KESEHATAN
Sekretariat :
Jl. Perintis Kemerdekaan Km. 10 Makassar 90245, Telp. (0411) 585658, 516-005,
Fax (0411) 586013E-mail : kepkfkmunh@gmail.com, website : www.fkm.unhas.ac.id

REKOMENDASI PERSETUJUAN ETIK
Nomor : 3778/UN4.14.1/TP.02.02/2020

Tanggal : 05 Juni 2020

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No.Protokol	16120012027	No. Sponsor Protokol	
Peneliti Utama	**Lisawati Nurtang**	Sponsor	
Judul Peneliti	**Analisis Resiko Pajanan Mikroplastik Melalui Konsumsi Ikan Teri (Stolephorus sp) Pada Masyarakat Di Kawasan Pesisir Desa Tamasaju Kecamatan Galesong Utara Kabupaten Takalar**		
No.Versi Protokol	1	Tanggal Versi	13 April 2018
No.Versi PSP	1	Tanggal Versi	13 April 2018
Tempat Penelitian	**Desa Tamasaju Kecamatan Galesong Utara Kabupaten Takalar**		
Judul Review	☐ Exempted ☒ Expedited ☐ Fullboard	Masa Berlaku **05 Juni 2020-** **05 Juni 2021**	Frekuensi review lanjutan
Ketua Komisi Etik Penelitian	Nama : Prof.dr.Veni Hadju,M.Sc,Ph.D	Tanda tangan	Tanggal 05 Juni 2020
Sekretaris komisi Etik Penelitian	Nama : Nur Arifah,SKM,MA	Tanda tangan	Tanggal 05 Juni 2020

Kewajiban Peneliti Utama :

1. Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
2. Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Lapor SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
3. Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
4. Menyerahkan laporan akhir setelah Penelitian berakhir
5. Melaporakn penyimpangan dari protocol yang disetujui (protocol deviation/violation)
6. Mematuhi semua peraturan yang ditentukan

Lampiran 3

Kuesioner Penelitian

KUESIONER

ANALISIS RISIKO PAJANAN MIKROPLASTIK MELALUI KONSUMSI IKAN KURISI MERAH DAN IKAN KEMBUNG PADA MASYARAKAT DI KAWASAN PESISIR DESA TAMASAJU KECAMATAN GALESONG UTARA KABUPATEN TAKALAR

***Code* Responden : ……**

Tanggal Wawancara :

Identitas Responden

Nama :

Jenis Kelamin :

Umur :

Alamat :

Pekerjaan :

B. Karakteristik Individu		
1.	Berat Bedan (BB)	Kg
C. Pajanan		
1.	Laju Asupan	
a. Berapa kali mengkonsumsi ikan dalam sehari? b. Berapa banyak ikan yang dikonsumsi dalam sehari? c. Jenis ikan apa yang sering konsumsi?		/Hari mg/Hari
2.	Frekuensi Paparan	
Lama hari respon dan mengkonsumsi ikan dalam setahun		Hari/Tahun

3.	Durasi Paparan	
Lama responden mengkonsumsi ikan		/Tahun
4. Lama tinggal di lokasi penelitian		Tahun
5. Berapa kali Buang Air Besar dalam Seminggu?		
6. Berapa banyak jumlah feses yang keluar setiap BAB?		

Lampiran 4

Surat Keterangan Telah Melakukan Penelitian

PEMERINTAH KABUPATEN TAKALAR
KECAMATAN GALESONG UTARA
DESA TAMASAJU
Alamat : Jl. Balai Desa Tamasaju No.2, Dusun Beba, Desa Tamasaju, Kec. Galesong Utara – Takalar
Kode Pos. 92255, Email : desatamasaju@gmail.com

SURAT KETERANGAN
Nomor : 1344/SKT/DT/VIII/2020

Yang bertanda tangan dibawah ini, Penjabat Kepala Desa Tamasaju Kecamatan Galesong Utara Kabupaten Takalar, dengan ini menerangkan bahwa berdasarkan surat izin penelitian No : 132/IP-DPMPTSPTT/VI/2020 maka dengan ini menerangkan bahwa :

N a m a	: LISAWATI NURTANG
Tempat/Tanggal lahir	: Sarawak, 11-01-1992
Jenis kelamin	: Perempuan
Pekerjaan	: Mahasiswa/ (S2) UNHAS Makassar
A l a m a t	: Jl. Urip Sumoharjo Aspol Panaikang Blok E/33 Makassar

Benar yang tersebut namanya diatas telah melakukan penelitian mengenai **"ANALISIS RESIKO PAJANAN MIKRO PLASTIK MELALUI KONSUMSI IKAN KEMBUNG DAN IKAN MERAH PADA MASYARAKAT DI KAWASAN PESISIR, DESA TAMASAJU, KEC. GALESONG UTARA, KABUPATEN TAKALAR"**. Terhitung Mulai tanggal 12 Juni s/d 16 Juli 2020.

Demikian Surat Keterangan ini kami berikan kepadanya untuk dipergunakan sebagaimana mestinya.

Tamasaju, 15 Agustus 2020
Penjabat Kepala Desa Tamasaju

HJ. SAHRIANI, S.Pd
NIP. 19720905 199211 2001

Lampiran 5

Dokumentasi Kegiatan

Proses wawancara responden

Proses wawancara responden

Proses edukasi responden

Persiapan alat pengambilan feses

Proses pengambilan sampel ikan

Proses pengambilan feses

proses penimbangan ikan hasil olahan

proses pengukuran tubuh ikan kembung

proses pengukuran tubuh ikan merah

proses penngeringan sampel

Alat pengeringan sampel (Incubator)

Alat pengukuran berat feses

Proses pendiaman sampel ikan selama 7 hari

Proses pendiaman sampel feses selama 14 hari

Proses pengamatan mikroplastik

Proses pengamatan mikroplastik

Proses pengukuran berat mikroplastik

Proses analisis FTIR

Proses analisis FTIR

Alat analisis FTIR

Lampiran 6

DATA RESPONDEN

NO	KODE RESPONDEN	NAMA RESPONDEN	JK	UMUR	ALAMAT	PEKERJAAN	Berat Badan (BB)	LAJU ASUPAN			Frekuensi Pajanan (Hari/Tahun)	Lama Tinggal (Tahun)
								Jenis ikan	(ekor /hari)	(g DW/ hari)		
1	SA1	Kio Dg Salle	Lk	60	Dusun Sawakung	Nelayan	50	Kembung	1	80	208	60
2	SA2	Mustafa	Lk	30	Dusun Sawakung	Nelayan	50	Kembung	2	160	156	30
3	SA3	Nasrul	Lk	22	Dusun Sawakung	Nelayan	60	Kembung	2	80	208	22
4	SA4	Sattung Dg Senre	Lk	45	Dusun Sawakung	Nelayan	62	Kurisi	2	160	156	45
	SA5	Amir Dg Lira	Lk	36	Dusun Sawakung	Nelayan	60	Kurisi	2	160	208	20
6	SA6	Dg Labbi	Lk	44	Dusun Sawakung	Sopir Truk	85	Kembung	1	200	156	44
7	SA7	Shani	Pr	21	Dusun Sawakung	Irt	45	Kurisi	2	100	208	21
8	SA8	Hj. Syamsi	Pr	45	Dusun Sawakung	Staf Desa	52	Kurisi	2	80	208	45
9	BB1	Junar Bontang	Lk	39	Dusun Beba	Nelayan	60	Kurisi	3	240	208	37
10	BB2	Jagon Dg Rombo	Lk	50	Dusun Beba	Nelayan	70	Kurisi	2	160	156	50
11	BB3	Ansar Dg Ngasa	Lk	38	Dusun Beba	Nelayan	65	Kurisi	2	160	260	20
12	BB4	Rahman Dg Rangka	Lk	55	Dusun Beba	Nelayan	63	Kurisi	2	160	208	55
13	BB5	Ramli Dg Situ	Lk	45	Dusun Beba	Nelayan	60	Kurisi	2	320	208	40
14	BB6	Baso Dg Bella	Lk	55	Dusun Beba	Nelayan	45	Kurisi	2	160	208	55

15	BB7	Lurang	Lk	60	Dusun Beba	Nelayan	50	Kembung	2	160	208	60
16	CA1	Said Dg Runrung	Lk	36	Dusun Campagaya	Nelayan	60	Kurisi	2	120	260	36
17	CA2	Tambung Dg Tinri	Lk	45	Dusun Campagaya	Nelayan	65	Kurisi	2	80	260	45
18	CA3	Samsuddin Dg Ngasa	Lk	42	Dusun Campagaya	Nelayan	45	Kurisi	1	100	208	42
19	CA4	Samsuddin Dg Nyarrang	Lk	48	Dusun Campagaya	Nelayan	72	Kurisi	3	240	208	48
20	CA5	Agus Dg Ngerang	Lk	40	Dusun Campagaya	Nelayan	50	Kurisi	2	160	260	40
21	CA6	H. Ibrahim Dg Mangka	Lk	55	Dusun Campagaya	Nelayan	56	Kurisi	2	80	260	55
22	CA7	Hamsinah	Pr	36	Dusun Campagaya	Irt	62	Kurisi	2	160	156	36
23	CA8	Dg Saming	Lk	46	Dusun Campagaya	Staf Desa	62	Kurisi	2	320	156	46
24	BC1	Bonto Dg Tawang	Lk	35	Dusun Boroncalla	Nelayan	50	Kurisi	2	200	156	10
25	BC2	Hafsah Dg Nganne	Pr	57	Dusun Boroncalla	Pedagang	38	Kembung	2	40	156	57
26	BC3	Paharuddin Dg Nassa	Lk	43	Dusun Boroncalla	Nelayan	60	Kurisi	2	200	156	15
27	BC4	Mahmud Dg Tarra	Lk	50	Dusun Boroncalla	Nelayan	70	Kurisi	3	120	104	50
28	BC5	Dampa Sija	Pr	43	Dusun Boroncalla	Irt	65	Kurisi	2	200	104	26
29	BC6	Serang Dg Punna	Lk	45	Dusun Boroncalla	Nelayan	65	Kurisi	2	80	156	45
30	BC7	Muh Saleh	Lk	33	Dusun Boroncalla	Nelayan	60	Kurisi	2	160	156	10

Keterangan
*Kode responden terblok adalah responden sampel feses
*SA=DusunSawakung; BB=Dusun Beba; CA=Dusun Campagaya; BC=Dusun Boroncalla

Lampiran 7

DATA ANALISIS TINGKAT RISIKO

NO	Kode Responden	C (mg/kg)	R (kg/hari)	FE (hari/tahun)	Dt (Tahun)	Wb (kg)	I Non-Karsinogenik (30 thn)/10950 hari	I Karsinogenik (70 thn)/ 25550 hari	RQ Non-Karsinogenik
1	SA1	2.5	0.08	208	60	50	0.004558904	0.001953816	0.022794521
2	SA2	2.5	0.16	156	30	50	0.003419178	0.001465362	0.01709589
3	SA3	5	0.08	208	22	60	0.002785997	0.001193999	0.013929985
4	SA4	2.5	0.16	156	45	62	0.004136103	0.001772615	0.020680513
5	SA5	2.5	0.16	208	20	60	0.002532725	0.001085453	0.012663623
6	SA6	1	0.2	156	44	85	0.00147494	0.000632117	0.007374698
7	SA7	4	0.1	208	21	45	0.003545814	0.001519635	0.017729072
8	SA8	5	0.08	208	45	52	0.006575342	0.002818004	0.032876712
9	BB1	2.5	0.24	208	37	60	0.007028311	0.003012133	0.035141553
10	BB2	2.5	0.16	156	50	70	0.00407045	0.001744479	0.02035225
11	BB3	2.5	0.16	260	20	65	0.002922374	0.001252446	0.014611872
12	BB4	2.5	0.16	208	55	63	0.006633326	0.002842854	0.03316663
13	BB5	1.25	0.32	208	40	60	0.005065449	0.002170907	0.025327245
14	BB6	2.5	0.16	208	55	45	0.009286657	0.003979996	0.046433283
15	BB7	2.5	0.16	208	60	50	0.009117808	0.003907632	0.045589041
16	CA1	2.5	0.12	260	36	60	0.004273973	0.001831703	0.021369863
17	CA2	5	0.08	260	45	65	0.006575342	0.002818004	0.032876712
18	CA3	2	0.1	208	42	45	0.003545814	0.001519635	0.017729072
19	CA4	2.5	0.24	208	48	72	0.007598174	0.00325636	0.037990868

20	CA5	2.5	0.16	260	40	50	0.007598174	0.00325636	0.037990868
21	CA6	5	0.08	260	55	56	0.009328115	0.003997763	0.046640574
22	CA7	2.5	0.16	156	36	62	0.003308882	0.001418092	0.01654441
23	CA8	1.25	0.32	156	46	62	0.004228016	0.001812007	0.02114008
24	BC1	2	0.2	156	10	50	0.001139726	0.000488454	0.00569863
25	BC2	10	0.04	156	57	38	0.008547945	0.003663405	0.042739726
26	BC3	2	0.2	156	15	60	0.001424658	0.000610568	0.007123288
27	BC4	5	0.12	104	50	70	0.00407045	0.001744479	0.02035225
28	BC5	2	0.2	104	26	65	0.001519635	0.000651272	0.007598174
29	BC6	5	0.08	156	45	65	0.003945205	0.001690802	0.019726027
30	BC7	2.5	0.16	156	10	60	0.000949772	0.000407045	0.004748858

Keterangan:
*SA=Dusun Sawakung;BB=Dusun Beba;CA=Dusun Campagaya;BC=Dusun Boroncalla; C=konsentrasi; R=Laju Asupan; FE= Frekuensi Pajanan; Dt=Durasi Pajanan; Wb= Berat Badan Responden

Lampiran 8

DATA PENGUKURAN SAMPEL IKAN

No	Kode Sampel	Bobot Badan (gram)	Panjang total (cm)
1	P1	106.79	20.4
2	P2	126.44	20.6
3	P3	140.92	22.1
4	P4	104.81	19.8
5	P5	114.73	20.5
6	P6	110.09	20.5
7	P7	104.23	19.6
8	P8	118.01	19.8
9	P9	122.57	20.4
10	P10	108.24	20.2
11	D1	90.15	18.8
12	D2	107.73	19.5
13	D3	96.35	19
14	D4	113.05	19.1
15	D5	92.35	19.4
16	D6	90.73	18.8
17	D7	112.59	20.5
18	D8	89.73	19.7
19	D9	71	17.5
20	D10	105.1	20.3

Keterangan: *P = Ikan Kembung; D = Ikan kakap Merah

Lampiran 9

DATA PENGAMATAN MPs SAMPEL IKAN

NO	NAMA SAMPEL	Bobot Basah (gram)	KODE SAMPEL	Parameter Mikroplastik				Jumlah	Kelimpahan (item/g)	Kelimpahan (item/kg)
				Bentuk*	Warna*	Ukuran (mm)	Berat (gram)			
1	D (Ikan Kurisi)	-	Blanko D	-	-	-	-	0	0	0
2	*Nemiptus Japanicus* (Bleeker, 1851)	90.15	D1	Line	Biru	1,394	0,0001	1	0.01	10
3		107.73	D2	Line Line	Biru Biru	0,678 1,317	0,0004 0,0002	2	0.02	20
4		96.35	D3	-	-	-		0	0	0
5		113.05	D4	-	-	-		0	0	0
6		92.35	D5	-	-	-		0	0	0
7		90.73	D6	Line Line Line Line	Mix Biru Biru Biru	1,401 1,152 1,365 2,505	0,0001 0,0001 0,0000 0,0005	4	0.04	40
8		112.59	D7	-	-	-		0	0	0
9		89.73	D8	-	-	-		0	0	0
10		71	D9	Line Line Line	Ungu Biru Hijau	1,721 2,168 1,327	0,0001 0,0001 0,0003	3	0.04	40
11		105.1	D10	Line	Biru	0,68	0,002	1	0.01	10
12	P (Ikan Kembung)		Blanko P	-	-	-		0	0	0
13	*Rastrelliger sp.*	106.79	P1	Line	Biru	3,122	0,0004	1	0.01	10

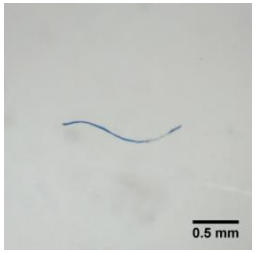
14	(Bleeker, 1851)	126.44	P2	Line Line	Biru Biru	0,713 0,921	0,0001 0,0001	2	0.02	20
15		140.92	P3	Line Line	Biru Mix	3,584 2,08	0,0003 0,0004	2	0.01	10
16		104.81	P4	-	-	-		0	0	0
17		114.73	P5	-	-	-		0	0	0
18		110.09	P6	Line Line	Biru Biru	2,03 0,926	0,0001 0,0001	2	0.01	10
19		104.23	P7	-	-	-		0	0	0
20		118.01	P8	-	-	-		0	0	0
21		122.57	P9	-	-	-		0	0	0
22		108.24	P10	-	-	-		0	0	0

Keterangan
*Data Bentuk berdasarkan pada Gesamp (2019)
*Data Warna berdasarkan Frias et al (2018)

Lampiran 10

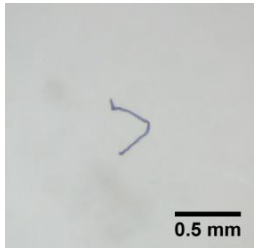
DATA WARNA DAN BENTUK MPs SAMPEL IKAN

D1



Line Biru (3.122 mm)

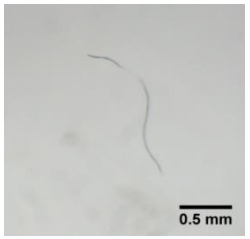
D2



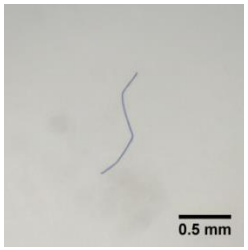
Line biru (0,678 mm)

Line biru (1,317 mm)

D6

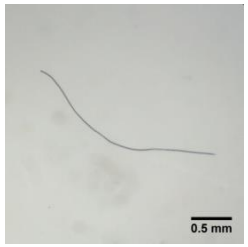


Line mix (1.401 mm)



Line Biru (1.152 mm)

Line Biru (1.365 mm)

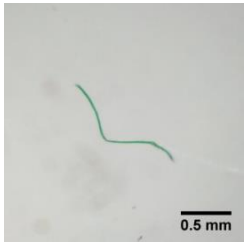


Line Biru (2.505 mm)

D9

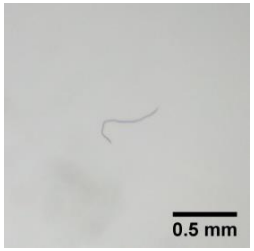
Line Ungu (1.721 mm)

Line Biru (2.168 mm)



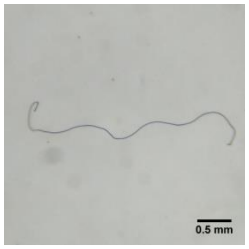
Line Hijau (1.327 mm)

D10



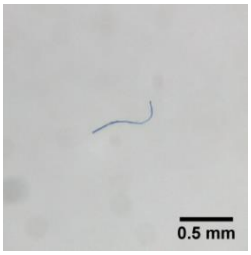
Line Biru (0.680 mm)

P1



Line Biru (3.122 mm)

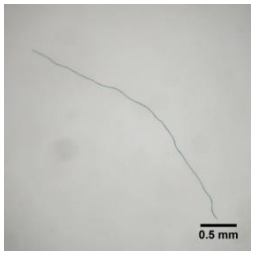
P2



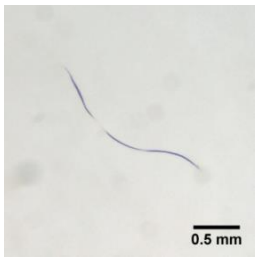
Line Biru (0.713 mm)

Line Biru (0.921 mm)

P3

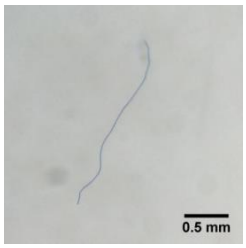


Line Biru (3.584 mm)

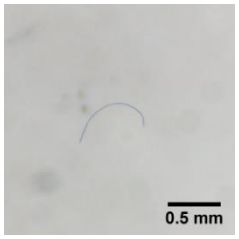


Line Mix (2.080 mm)

P6



Line Biru (2.030 mm)



Line Biru (0.926 mm)

Lampiran 11

DATA RESPONDEN SAMPEL FESES

NO	CODE RESPONDEN	NAMA RESPONDEN	JK	UMUR	PEKERJAAN	Berat Badan (Kg)	Konsumsi ikan (Ekor/hari)	FREKUENSI BAB (HARI/MINGGU)
1	BB.F.1	MUSTAFA	LK	30	NELAYAN	50	4	7
2	BB.F.2	NASRUL	LK	22	NELAYAN	60	2	3
3	BB.F.3	JUNAR BONTANG	LK	39	NELAYAN	60	5	3
4	BB.F.4	JAGON DG ROMBO	LK	50	NELAYAN	70	4	4
5	BB.F.5	SAID DG RUNRUNG	LK	36	NELAYAN	60	4	7
6	BB.F.6	TAMBUNG DG TINRI	LK	45	NELAYAN	65	2	3
7	BB.F.7	SAMSUDDIN DG NYARRANG	LK	48	NELAYAN	72	5	7
8	BB.F.8	BONTO DG TAWANG	LK	35	NELAYAN	50	4	3
9	BB.F.9	MAHMUD DG TARRA	LK	50	NELAYAN	70	2	7
10	BB.F.10	DAMPA SIJA	PR	43	IRT	65	4	4

Keterangan:
***BB.F= Sampel Feses Beba**

Lampiran 12

DATA PENGAMATAN MPs SAMPEL FESES

No	Nama Sampel	Bobot Feses Kering (g)	Bentuk*	Warna*	Ukuran (mm)	Jumlah	Kelimpahan (item/g DW)	Kelimpahan (item/kg DW)
	Blangko	-	-	-	-	-	-	-
1	BB.F.1	16	Line	Mix	0.857	19	1.19	1,187.50
			Line	Biru	2.636			
			Line	Biru	0.787			
			Line	Biru	1.570			
			Line	Biru	2.142			
			Line	Hitam	2.992			
			Line	Hitam	0.767			
			Line	Merah	1.302			
			Fragment	Transparan	1.177			
			Fragment	Hitam	1.486			
			Fragment	Hitam	0.552			
			Fragment	Hitam	1.442			
			Fragment	Hitam	0.391			
			Fragment	Hitam	0.166			
			Fragment	Hitam	0.301			
			Fragment	Mix	0.611			
			Fragment	Other	0.692			

			Fragment	Other	0.809			
			Fragment	Other	0.443			
			Line	Biru	2.534			
			Line	Biru	4.869			
			Line	Biru	1.938			
			Line	Biru	1.421			
			Line	Biru	5.125			
			Line	Biru	2.317			
			Line	Other	6.334			
			Line	Other	2.837			
			Line	Other	2.496			
			Line	Other	3.863			
			Line	Other	1.370			
2	BB.F.2	22.7	Line	Mix	3.094	31	1.37	1,365.64
			Line	Mix	4.186			
			Line	Transparan	4.164			
			Line	Transparan	0.489			
			Line	Transparan	0.819			
			Line	Transparan	0.489			
			Line	Hitam	1.358			
			Line	Hitam	1.690			
			Line	Hitam	1.538			
			Line	Mix	2.309			
			Line	Mix	3.924			
			Line	Mix	3.182			

			Line	Merah	1.774			
			Fragment	Transparan	4.057			
			Fragment	Transparan	0.814			
			Fragment	Transparan	1.372			
			Fragment	Hitam	0.223			
			Fragment	Other	1.494			
			Fragment	Other	3.541			
			Film	Putih	0.936			
3	BB.F.3	18.5	Line	Transparan	1.151	34	1.84	1,837.84
			Line	Transparan	1.175			
			Line	Transparan	1.581			
			Line	Transparan	7.804			
			Line	Transparan	2.006			
			Line	Other	0.776			
			Line	Other	2.429			
			Line	Biru	4.447			
			Line	Biru	0.663			
			Line	Biru	2.133			
			Line	Biru	0.827			
			Line	Biru	4.682			
			Line	Biru	2.556			
			Line	Mix	3.504			
			Line	Mix	3.103			
			Line	Mix	2.300			
			Line	Mix	5.250			

			Line	Mix	1.042			
			Line	Hitam	0.817			
			Line	Hitam	3.257			
			Line	Hitam	1.852			
			Fragment	Biru	0.226			
			Fragment	Transparan	3.071			
			Fragment	Transparan	0.775			
			Fragment	Transparan	1.688			
			Fragment	Transparan	0.432			
			Fragment	Transparan	0.473			
			Fragment	Transparan	0.541			
			Fragment	Hitam	0.452			
			Fragment	Hitam	0.219			
			Fragment	Hitam	0.245			
			Fragment	Hitam	0.219			
			Film	Putih	1.298			
			Film	Putih	0.71			
4	BB.F.4	21.2	Line	Biru	2.208	46	2.17	2,169.81
			Line	Biru	3.167			
			Line	Biru	1.787			
			Line	Biru	0.671			
			Line	Biru	7.881			
			Line	Biru	2.345			
			Line	Biru	2.445			
			Line	Biru	0.493			

Line	Biru	1.492
Line	Biru	1.832
Line	Biru	0.549
Line	Biru	4.036
Line	Biru	0.554
Line	Transparan	4.941
Line	Transparan	2.494
Line	Transparan	1.059
Line	Transparan	1.316
Line	Transparan	2.006
Line	Transparan	0.449
Line	Mix	3.112
Line	Mix	3.412
Line	Mix	1.849
Line	Mix	1.411
Line	Mix	1.534
Line	Mix	2.586
Line	Mix	3.353
Line	Hitam	2.893
Line	Hitam	1.963
Line	Other	5.093
Line	Other	1.980
Line	Other	0.928
Line	Other	1.055

			Line	Other	0.850			
			Fragment	Transparan	0.865			
			Fragment	Transparan	3.530			
			Fragment	Transparan	1.375			
			Fragment	Hitam	1.425			
			Fragment	Hitam	1.040			
			Fragment	Hitam	1.394			
			Fragment	Putih	0.146			
			Fragment	Putih	0.322			
			Fragment	Putih	1.854			
			Film	Putih	2.481			
			Film	Putih	0.942			
			Film	Putih	1.393			
			Pellet	Putih	0.660			
5	BB.F.5	21.5	Line	Other	1.165	39	1.81	1,813.95
			Line	Other	2.129			
			Line	Other	2.944			
			Line	Mix	2.711			
			Line	Mix	2.04			
			Line	Mix	7.292			
			Line	Transparan	3.357			
			Line	Transparan	0.694			
			Line	Transparan	0.357			
			Line	Transparan	4.449			
			Line	Transparan	0.741			

Line	Transparan	4.802
Line	Transparan	4.201
Line	Transparan	2.335
Line	Transparan	1.492
Line	Biru	3.206
Line	Biru	4.607
Line	Biru	2.217
Line	Biru	4.611
Line	Biru	4.525
Line	Biru	0.272
Line	Biru	2.641
Line	Biru	1.353
Line	Biru	3.213
Line	Biru	1.179
Line	Biru	1.240
Line	Biru	1.086
Line	Hitam	3.766
Line	Hitam	0.938
Line	Hitam	3.114
Line	Hijau	0.876
Fragment	Transparan	6.341
Fragment	Transparan	1.589
Fragment	Transparan	0.365
Fragment	Transparan	0.471
Fragment	Transparan	0.730

			Fragment	Transparan	1.640			
			Fragment	Hitam	0.262			
			Pellet	Putih	0.256			
6	BB.F.6	15.6	Line	Biru	1.410	14	0.90	897.44
			Line	Biru	5.470			
			Line	Biru	1.653			
			Fragment	Hijau	0.745			
			Fragment	Hijau	0.211			
			Fragment	Hijau	0.657			
			Fragment	Hijau	0.480			
			Fragment	Hijau	0.369			
			Fragment	Hijau	0.589			
			Fragment	Hijau	1.228			
			Fragment	Other	0.333			
			Fragment	Hitam	0.323			
			Fragment	Hitam	0.348			
			Fragment	Hitam	0.303			
7	BB.F.7	10	Line	Biru	0.589	25	2.5	2500
			Line	Biru	2.441			
			Line	Biru	19.712			
			Line	Biru	2.236			
			Line	Biru	5.619			
			Line	Biru	6.077			
			Line	Biru	1.434			

			Line	Biru	5.07			
			Line	Biru	2.633			
			Line	Biru	4.213			
			Line	Other	0.407			
			Line	Other	1.074			
			Line	Other	1.27			
			Line	Merah	6.171			
			Line	Merah	3.476			
			Line	Hitam	0.747			
			Line	Transparan	1.611			
			Line	Transparan	2.618			
			Fragment	Other	1.148			
			Fragment	Transparan	0.73			
			Fragment	Hitam	0.99			
			Fragment	Hitam	0.756			
			Fragment	Hitam	0.756			
			Fragment	Hitam	0.602			
			Fragment	Hitam	0.503			
8	BB.F.8	25.5	Line	Biru	0.723	30	1.18	1,176.47
			Line	Biru	1.014			
			Line	Biru	1.094			
			Line	Biru	2.316			
			Line	Biru	1.482			
			Line	Other	5.194			
			Line	Hitam	3.598			

			Line	Hitam	9.297			
			Line	Merah	0.935			
			Line	Merah	3.158			
			Line	Mix	3.260			
			Line	Mix	0.995			
			Line	Transparan	1.296			
			Fragment	Transparan	0.733			
			Fragment	Transparan	0.397			
			Fragment	Mix	0.218			
			Fragment	Mix	0.124			
			Fragment	Mix	0.133			
			Fragment	Mix	0.25			
			Fragment	Mix	0.228			
			Fragment	Hitam	0.59			
			Fragment	Hitam	0.86			
			Fragment	Hitam	0.708			
			Fragment	Hitam	0.769			
			Fragment	Hitam	0.27			
			Fragment	Hitam	0.173			
			Fragment	Hitam	0.187			
			Fragment	Other	0.196			
			Fragment	Other	1.869			
			Film	Transparan	1.381			
9	BB.F.9	20	Line	Merah	0.554	39	1.95	1950
			Line	Merah	1.143			

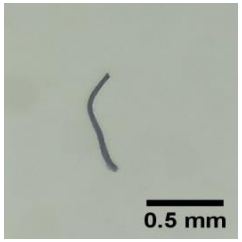
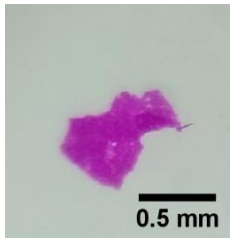
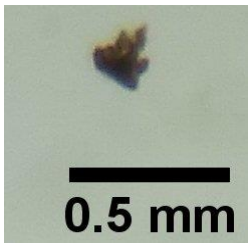
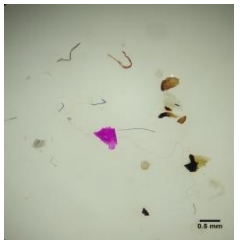
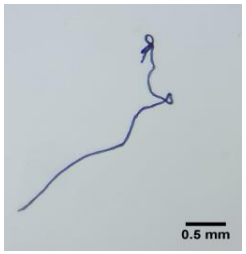
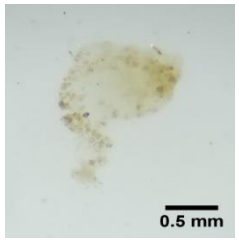
Line	Merah	3.998
Line	Merah	4.016
Line	Other	10.621
Line	Hitam	3.421
Line	Biru	2.189
Line	Biru	4.354
Line	Biru	0.708
Line	Biru	1.795
Line	Biru	0.748
Line	Biru	0.275
Line	Biru	2.681
Line	Transparan	1.019
Line	Transparan	1.435
Line	Transparan	4.137
Line	Transparan	2.929
Line	Other	4.549
Line	Other	3.073
Fragment	Transparan	3.412
Fragment	Transparan	1.691
Fragment	Transparan	1.184
Fragment	Transparan	0.441
Fragment	Hitam	2.061
Fragment	Hitam	0.684
Fragment	Hitam	0.718
Fragment	Hitam	1.025

			Fragment	Hitam	1.003			
			Fragment	Hitam	1.424			
			Fragment	Hitam	0.246			
			Fragment	Hitam	0.469			
			Fragment	Hitam	0.464			
			Fragment	Hitam	0.601			
			Fragment	Hitam	0.761			
			Fragment	Hitam	2.126			
			Fragment	Hijau	1.346			
			Film	Putih	0.802			
			Pellet	Putih	1.917			
			Pellet	Putih	0.597			
			Line	Mix	1.091			
			Line	Biru	1.535			
10	BB.F.10	8	Fragment	Hijau	0.11	5	0.625	625
			Fragment	Mix	0.097			
			Fragment	Other	0.158			
TOTAL						**282**		

Keterangan
*Data Bentuk berdasarkan pada Gesamp (2019)
*Data Warna berdasarkan Frias et al (2018)

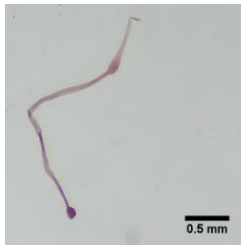
Lampiran 13

DATA WARNA DAN BENTUK MPs SAMPEL FESES

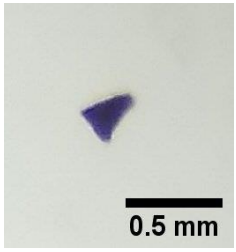
NO				
	SAMPEL BB.F.1			
1				
	Line hitam	Fragment ungu	Fragment hitam	Gabungan
	SAMPEL BB.F.2			
2				
	Line biru	Fragment transparan	Film Putih	Gabungan

SAMPEL BB.F.3

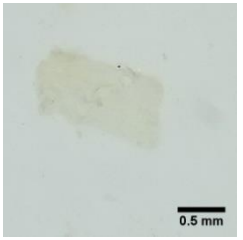
3



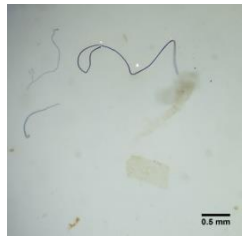
Line ungu



Fragment Biru



Film Transparan

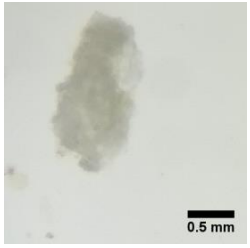


Gabungan

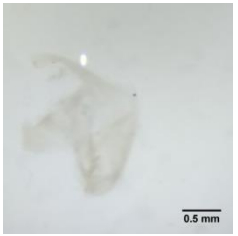
4.

SAMPEL BB.F.4

Line kuning



Fragment Abu-abu

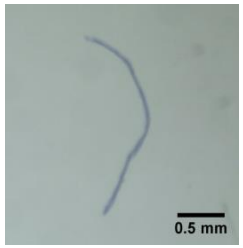


Fragment putih

Gabungan

SAMPEL BB.F.5

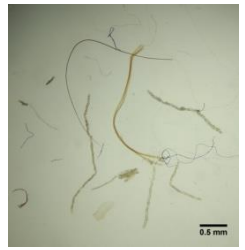
5



Line Biru

Line Mix

Fragment Hitam



Gabungan

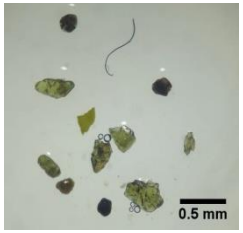
6

SAMPEL BB.F.6

Line Mix

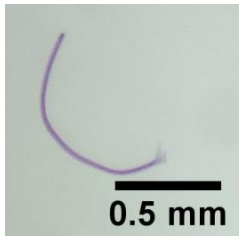
Fragment hijau

Fragment hitam

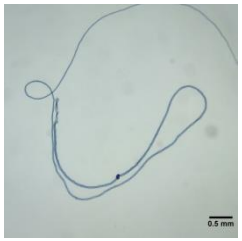


Gabungan

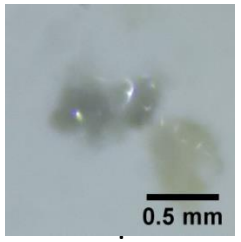
SAMPEL BB.F.7



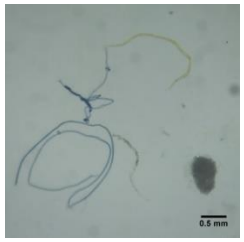
Line ungu



Line Biru



Fragment Abu-abu

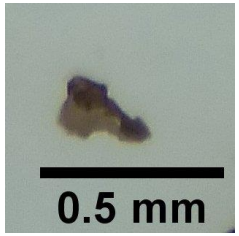


Gabungan

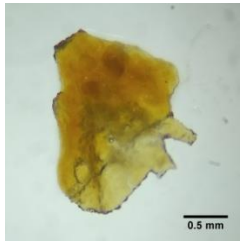
8

SAMPEL BB.F.8

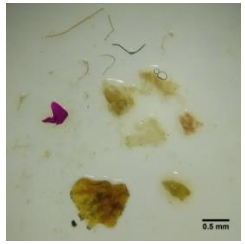
Line merah



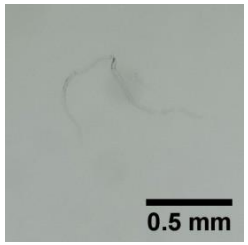
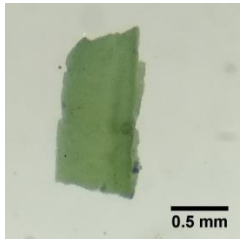
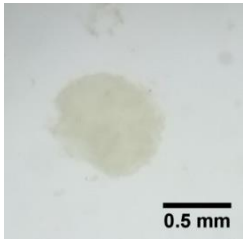
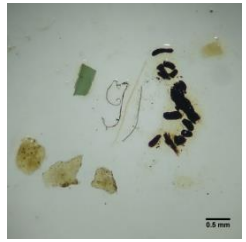
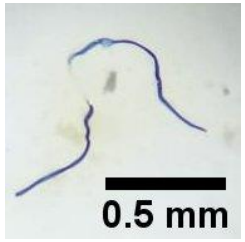
Fragment mix



Fragment coklat



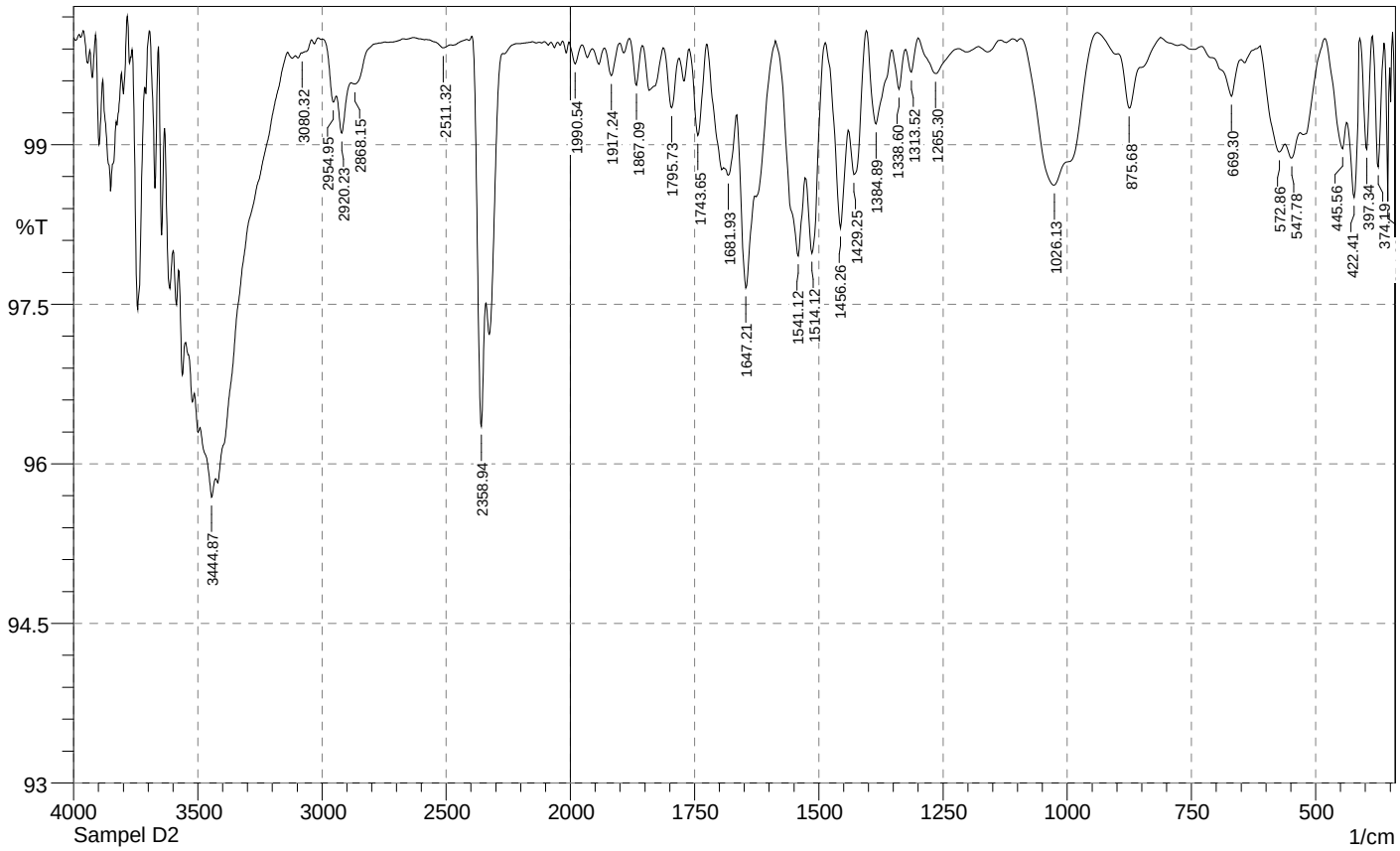
Gabungan

9	**SAMPEL BB.F.10**			
				
	Line transparan	Fragment hijau	Pellet putih	Gabungan
	SAMPEL BB.F.10			
10				
				
	Line biru	Fragment mix	Fragment hijau	Fragment Abu-abu

Lampiran 14

HASIL ANALISIS FTIR MPs

No	Jenis Sampel	Bentuk Mikroplastik	Warna	Jenis Polimer
1	Ikan Kurisi Merah	Line	Biru	*Polystyrene (PS)*
		Line	Mix	*Polystyrene (PS)*
		Line	Ungu	*Polystyrene (PS)*
2	Ikan Kembung	Line	Biru	*Polystyrene (PS)*
		Line	Biru	*Polystyrene (PS)*
3	Feses Manusia	Line	Biru	*Polystyrene (PS)*
		Fragment	HIjau	*Polyvinyl chloride (PVC)*
		Fragment	Ungu	*Polystyrene (PS)*
		Film	Transparan	*Low-density polyethylene (LDPE)*
		Pellet	Putih	*Polystyrene (PS)*

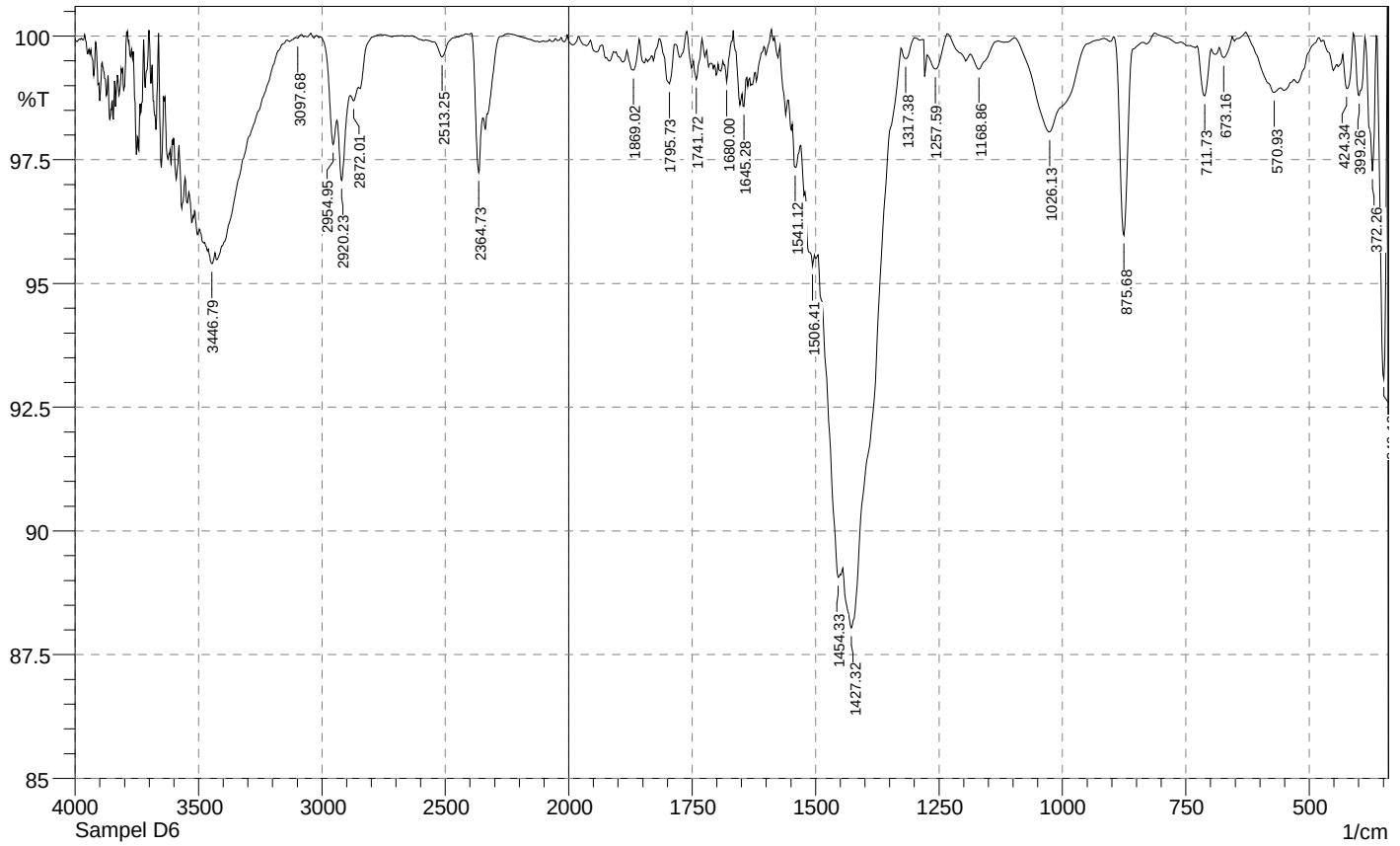


No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	354.9	98.468	1.334	362.62	351.04	0.031	0.023
2	374.19	98.791	1.198	385.76	362.62	0.06	0.059
3	397.34	98.956	1.056	410.84	385.76	0.051	0.052
4	422.41	98.504	1.157	437.84	410.84	0.119	0.072
5	445.56	98.961	0.386	482.2	437.84	0.113	0.036
6	547.78	98.875	0.178	561.29	530.42	0.138	0.011
7	572.86	98.931	0.288	611.43	561.29	0.164	0.047
8	669.3	99.454	0.352	709.8	650.01	0.084	0.035
9	875.68	99.343	0.55	896.9	812.03	0.103	0.078
10	1026.13	98.62	1.402	1093.64	939.33	0.509	0.526
11	1265.3	99.669	0.293	1300.02	1219.01	0.067	0.051
12	1313.52	99.682	0.265	1325.1	1300.02	0.019	0.014
13	1338.6	99.52	0.375	1354.03	1325.1	0.034	0.021
14	1384.89	99.194	0.809	1404.18	1354.03	0.099	0.095
15	1429.25	98.718	0.715	1440.83	1404.18	0.132	0.069
16	1456.26	98.213	1.198	1487.12	1440.83	0.192	0.101
17	1514.12	97.978	1.135	1527.62	1487.12	0.215	0.096
18	1541.12	97.954	1.027	1587.42	1527.62	0.308	0.134
19	1647.21	97.653	1.246	1664.57	1629.85	0.265	0.098
20	1681.93	98.714	0.248	1691.57	1664.57	0.131	0.017
21	1743.65	99.087	0.834	1761.01	1726.29	0.075	0.063
22	1795.73	99.346	0.513	1813.09	1780.3	0.053	0.034
23	1867.09	99.558	0.404	1880.6	1855.52	0.024	0.021
24	1917.24	99.648	0.282	1930.74	1901.81	0.026	0.018
25	1990.54	99.759	0.191	2005.97	1977.04	0.017	0.01
26	2358.94	96.353	2.024	2395.59	2339.65	0.518	0.214
27	2511.32	99.911	0.04	2580.76	2484.32	0.021	0.006
28	2868.15	99.571	0.053	2883.58	2746.63	0.113	-0.022
29	2920.23	99.108	0.397	2943.37	2883.58	0.168	0.043
30	2954.95	99.401	0.171	2997.38	2943.37	0.071	0.007
31	3080.32	99.861	0.01	3082.25	3041.74	0.018	0.005
32	3444.87	95.687	0.293	3491.16	3429.43	1.102	0.033

Date/Time; 7/13/2020 10:36:57 AM

No. of Scans;

Resolution;



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	349.12	93.073	8.113	364.55	341.4	0.38	0.469
2	372.26	97.272	2.72	387.69	364.55	0.148	0.147
3	399.26	98.798	1.222	410.84	387.69	0.071	0.073
4	424.34	98.941	0.845	432.05	410.84	0.069	0.055
5	570.93	98.862	0.277	628.79	559.36	0.197	0.051
6	673.16	99.565	0.28	682.8	655.8	0.036	0.021
7	711.73	98.792	0.976	727.16	698.23	0.096	0.067
8	875.68	95.979	3.968	896.9	837.11	0.335	0.316
9	1026.13	98.063	1.845	1097.5	948.98	0.658	0.597
10	1168.86	99.331	0.387	1186.22	1130.29	0.1	0.044
11	1257.59	99.336	0.457	1274.95	1232.51	0.077	0.046
12	1317.38	99.543	0.291	1327.03	1300.02	0.035	0.019
13	1427.32	88.037	2.762	1444.68	1327.03	3.63	0.731
14	1454.33	89.061	1.145	1494.83	1446.61	1.819	0.121
15	1506.41	95.354	0.482	1521.84	1502.55	0.36	0.037
16	1541.12	97.351	0.722	1546.91	1529.55	0.183	0.031
17	1645.28	98.577	0.388	1649.14	1639.49	0.05	0.008
18	1680	99.072	0.65	1687.71	1666.5	0.042	0.024
19	1741.72	99.123	0.522	1747.51	1730.15	0.044	0.023
20	1795.73	99.037	0.838	1816.94	1784.15	0.075	0.059
21	1869.02	99.308	0.528	1882.52	1857.45	0.055	0.036
22	2364.73	97.241	1.721	2395.59	2347.37	0.322	0.154
23	2513.25	99.579	0.34	2546.04	2453.45	0.076	0.049
24	2872.01	98.688	0.178	2885.51	2852.72	0.173	0.013
25	2920.23	97.08	1.398	2939.52	2885.51	0.486	0.143
26	2954.95	97.808	0.878	3007.02	2939.52	0.301	0.047
27	3097.68	99.958	0.038	3107.32	3082.25	0.001	0.002
28	3446.79	95.399	0.257	3460.3	3433.29	0.54	0.019

Comment;

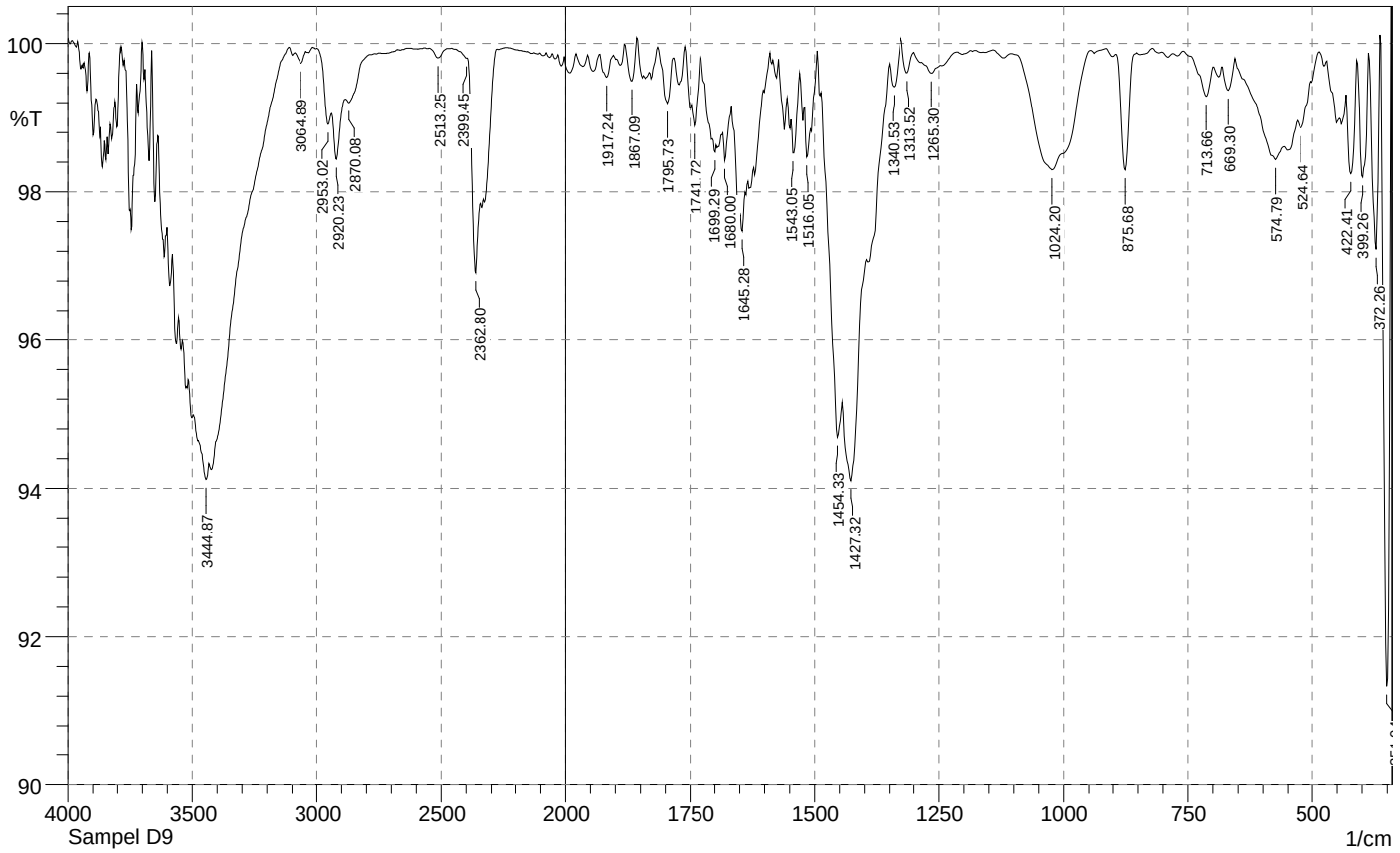
Sampel D6

Date/Time; 7/13/2020 10:22:47 AM

No. of Scans;

Resolution;

Apodization;

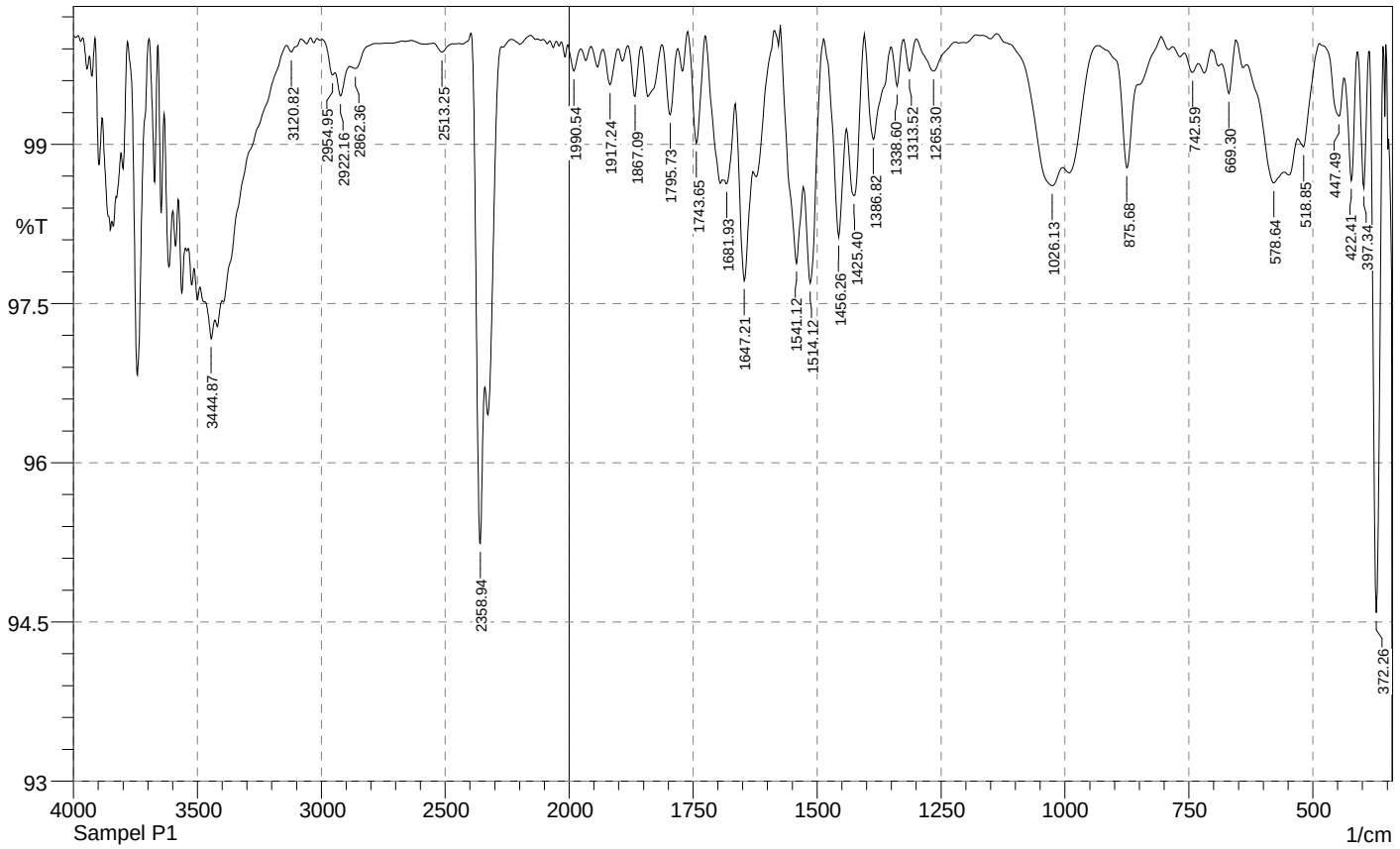


No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	351.04	91.331	9.967	364.55	341.4	0.486	0.598
2	372.26	97.225	2.811	387.69	364.55	0.159	0.159
3	399.26	98.195	1.628	410.84	387.69	0.115	0.097
4	422.41	98.245	1.275	432.05	410.84	0.12	0.078
5	524.64	98.863	0.212	530.42	503.42	0.109	0.018
6	574.79	98.432	0.387	655.8	557.43	0.424	0.082
7	669.3	99.37	0.368	680.87	655.8	0.053	0.025
8	713.66	99.286	0.447	759.95	700.16	0.098	0.043
9	875.68	98.294	1.571	894.97	852.54	0.141	0.116
10	1024.2	98.297	1.59	1105.21	947.05	0.662	0.584
11	1265.3	99.601	0.126	1284.59	1246.02	0.055	0.009
12	1313.52	99.606	0.368	1327.03	1300.02	0.027	0.024
13	1340.53	99.415	0.455	1350.17	1327.03	0.039	0.028
14	1427.32	94.104	1.746	1444.68	1396.46	1.018	0.189
15	1454.33	94.689	1.417	1487.12	1444.68	0.651	0.133
16	1516.05	98.467	0.573	1519.91	1508.33	0.067	0.016
17	1543.05	98.522	0.59	1546.91	1529.55	0.082	0.028
18	1645.28	97.468	0.343	1649.14	1639.49	0.099	0.007
19	1680	98.421	0.454	1683.86	1666.5	0.094	0.016
20	1699.29	98.534	0.12	1705.07	1697.36	0.047	0.002
21	1741.72	98.893	0.502	1747.51	1730.15	0.06	0.023
22	1795.73	99.193	0.666	1815.02	1784.15	0.063	0.047
23	1867.09	99.496	0.549	1882.52	1857.45	0.031	0.035
24	1917.24	99.545	0.305	1930.74	1903.74	0.038	0.02
25	2362.8	96.909	1.662	2395.59	2343.51	0.439	0.171
26	2399.45	99.803	0.011	2459.24	2395.59	0.032	-0.003
27	2513.25	99.808	0.127	2547.97	2472.74	0.039	0.018
28	2870.08	99.202	0.141	2885.51	2787.14	0.207	0.013
29	2920.23	98.439	0.687	2939.52	2885.51	0.269	0.07
30	2953.02	98.909	0.347	2999.31	2939.52	0.152	0.021
31	3064.89	99.735	0.152	3088.03	3043.67	0.037	0.015
32	3444.87	94.124	0.335	3495.01	3433.29	1.522	0.049

Date/Time; 7/13/2020 10:30:13 AM

No. of Scans;

Resolution;

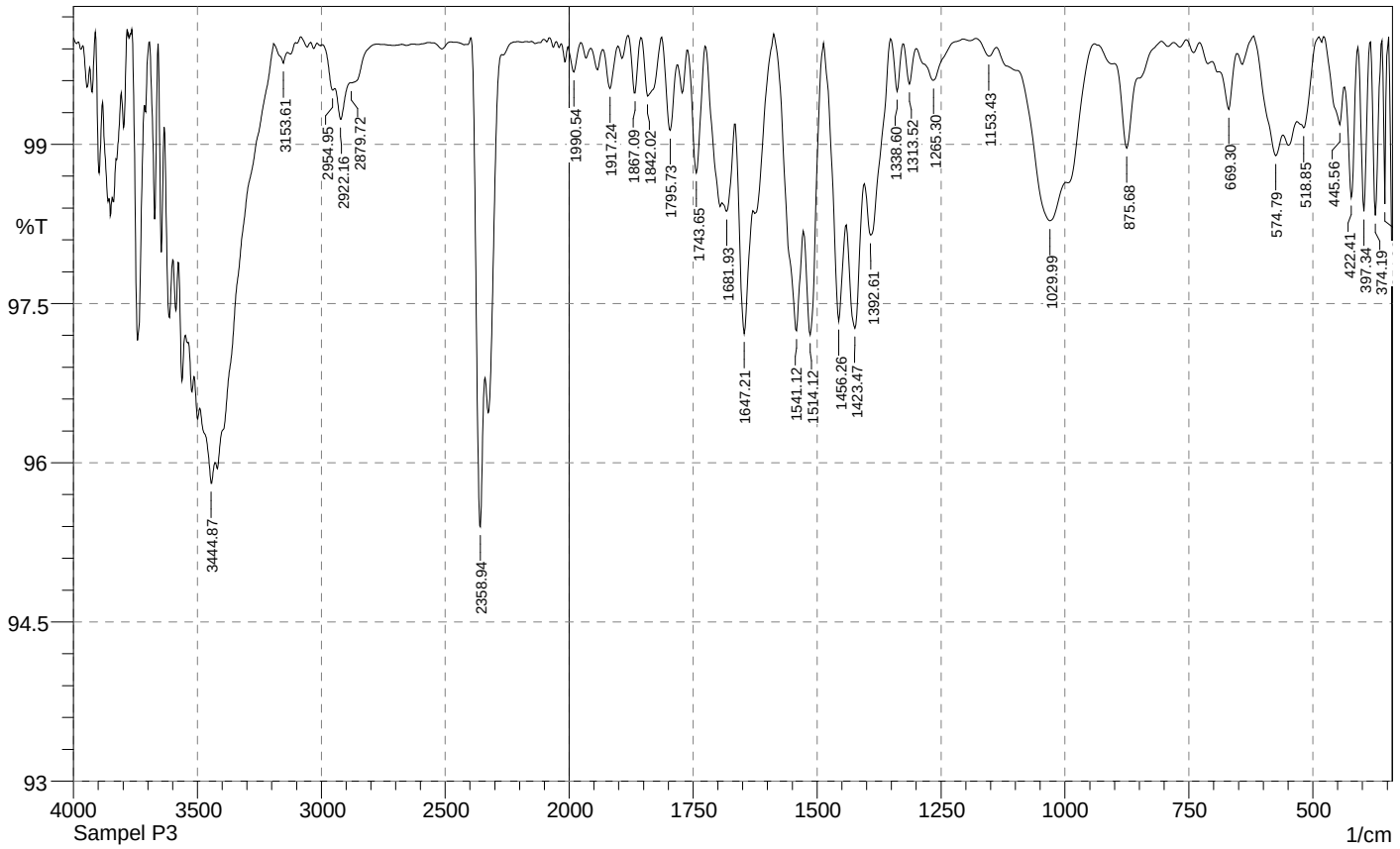


No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	372.26	94.588	5.314	387.69	358.76	0.348	0.336
2	397.34	98.587	1.286	408.91	387.69	0.071	0.059
3	422.41	98.66	1.096	437.84	408.91	0.091	0.06
4	447.49	99.267	0.422	486.06	437.84	0.076	0.032
5	518.85	98.976	0.311	530.42	486.06	0.116	0.02
6	578.64	98.637	0.379	634.58	557.43	0.303	0.049
7	669.3	99.479	0.399	684.73	655.8	0.041	0.024
8	742.59	99.678	0.123	759.95	731.02	0.031	0.008
9	875.68	98.78	0.891	931.62	852.54	0.157	0.07
10	1026.13	98.611	0.404	1111	1004.91	0.364	0.069
11	1265.3	99.691	0.289	1300.02	1220.94	0.054	0.047
12	1313.52	99.69	0.299	1325.1	1300.02	0.017	0.016
13	1338.6	99.548	0.401	1350.17	1325.1	0.025	0.02
14	1386.82	99.044	0.956	1404.18	1350.17	0.122	0.116
15	1425.4	98.517	1.006	1440.83	1404.18	0.155	0.09
16	1456.26	98.124	1.304	1487.12	1440.83	0.195	0.108
17	1514.12	97.692	1.372	1527.62	1487.12	0.241	0.117
18	1541.12	97.881	1.163	1573.91	1527.62	0.27	0.141
19	1647.21	97.714	1.349	1664.57	1629.85	0.245	0.103
20	1681.93	98.63	0.213	1687.71	1664.57	0.113	0.015
21	1743.65	99.012	1.03	1761.01	1726.29	0.073	0.079
22	1795.73	99.28	0.641	1813.09	1780.3	0.054	0.042
23	1867.09	99.451	0.474	1882.52	1855.52	0.034	0.025
24	1917.24	99.561	0.336	1932.67	1901.81	0.035	0.021
25	1990.54	99.692	0.227	2005.97	1977.04	0.023	0.013
26	2358.94	95.237	2.626	2395.59	2339.65	0.685	0.285
27	2513.25	99.871	0.081	2547.97	2445.74	0.034	0.013
28	2862.36	99.715	0.068	2885.51	2785.21	0.073	0.004
29	2922.16	99.457	0.241	2945.3	2885.51	0.103	0.026
30	2954.95	99.653	0.08	2997.38	2945.3	0.041	0.003
31	3120.82	99.87	0.083	3140.11	3082.25	0.021	0.011
32	3444.87	97.169	0.24	3469.94	3429.43	0.475	0.017

Date/Time; 7/13/2020 10:44:09 AM

No. of Scans;

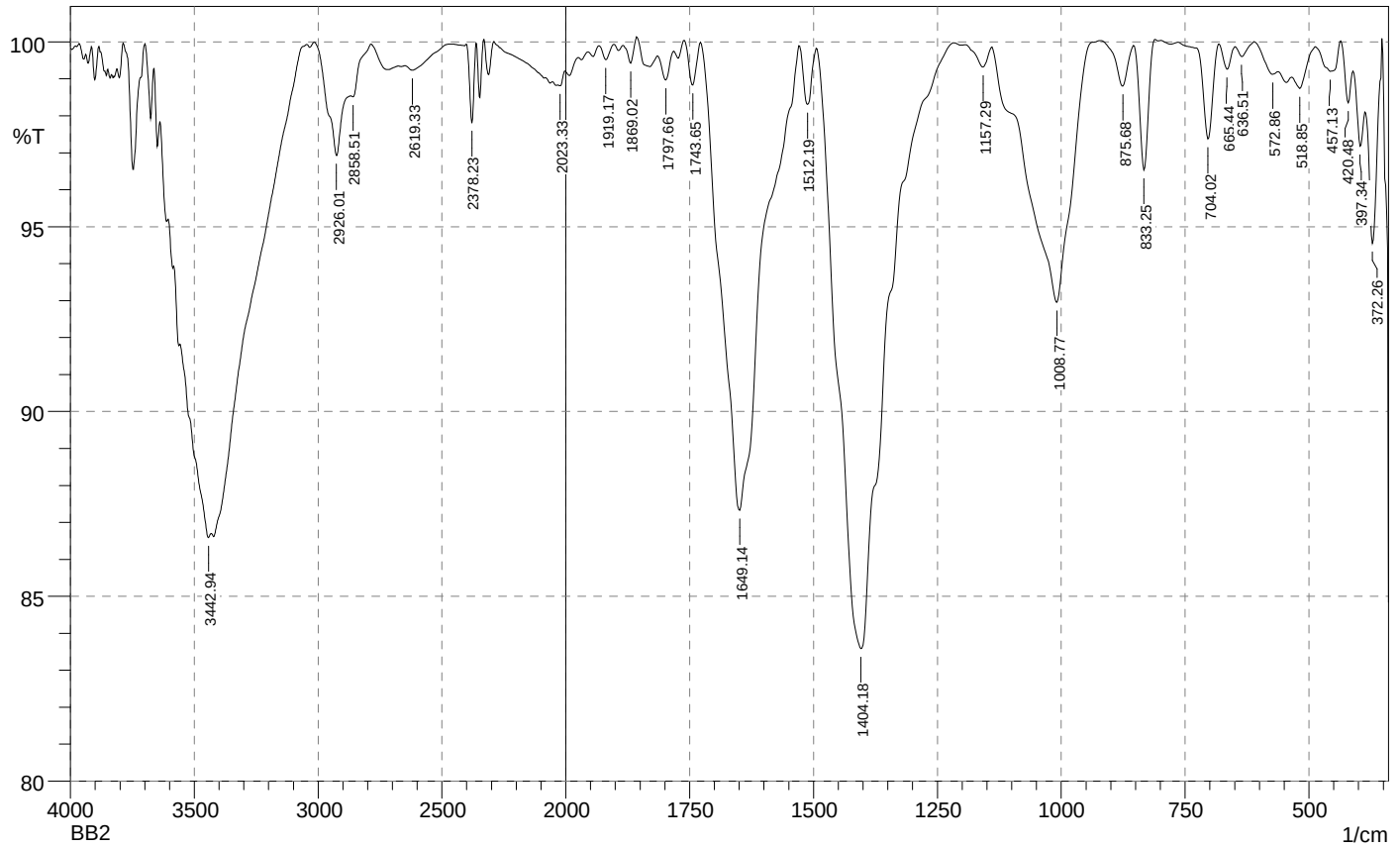
Resolution;



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	354.9	98.439	1.553	360.69	347.19	0.031	0.031
2	374.19	98.33	1.64	383.83	360.69	0.081	0.078
3	397.34	98.369	1.569	408.91	383.83	0.083	0.076
4	422.41	98.502	1.227	435.91	408.91	0.099	0.067
5	445.56	99.185	0.465	478.35	435.91	0.087	0.047
6	518.85	99.155	0.302	532.35	487.99	0.098	0.023
7	574.79	98.894	0.412	619.15	561.29	0.171	0.059
8	669.3	99.328	0.446	688.59	651.94	0.066	0.029
9	875.68	98.966	0.725	900.76	852.54	0.127	0.063
10	1029.99	98.28	0.657	1138	997.2	0.559	0.114
11	1153.43	99.831	0.115	1178.51	1138	0.017	0.009
12	1265.3	99.602	0.334	1300.02	1205.51	0.074	0.053
13	1313.52	99.567	0.359	1327.03	1300.02	0.028	0.019
14	1338.6	99.499	0.472	1352.1	1327.03	0.026	0.023
15	1392.61	98.145	0.788	1404.18	1352.1	0.267	0.111
16	1423.47	97.268	1.157	1440.83	1404.18	0.35	0.099
17	1456.26	97.332	1.48	1487.12	1440.83	0.309	0.126
18	1514.12	97.205	1.569	1527.62	1487.12	0.298	0.133
19	1541.12	97.244	1.36	1587.42	1527.62	0.405	0.173
20	1647.21	97.217	1.545	1666.5	1629.85	0.314	0.119
21	1681.93	98.371	0.364	1691.57	1666.5	0.155	0.026
22	1743.65	98.73	1.176	1761.01	1726.29	0.104	0.09
23	1795.73	99.132	0.733	1813.09	1782.23	0.066	0.05
24	1842.02	99.454	0.555	1855.52	1813.09	0.058	0.059
25	1867.09	99.483	0.532	1882.52	1855.52	0.026	0.028
26	1917.24	99.527	0.382	1932.67	1901.81	0.036	0.024
27	1990.54	99.68	0.259	2004.04	1977.04	0.021	0.014
28	2358.94	95.395	2.474	2397.52	2339.65	0.676	0.268
29	2879.72	99.58	0.007	2881.65	2771.71	0.103	-0.011
30	2922.16	99.236	0.311	2945.3	2881.65	0.159	0.035
31	2954.95	99.511	0.096	2995.45	2945.3	0.062	0.003
32	3153.61	99.764	0.129	3192.19	3136.25	0.037	0.014
33	3444.87	95.804	0.33	3489.23	3429.43	1.028	0.035

Date/Time; 7/13/2020 10:50:32 AM

No. of Scans;



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	339.47	84.841	0	352.97	339.47	0.237	-0.242
2	372.26	94.552	4.435	387.69	352.97	0.483	0.345
3	397.34	97.175	1.391	410.84	387.69	0.202	0.066
4	420.48	98.349	1.177	435.91	410.84	0.102	0.06
5	457.13	99.203	0.758	487.99	435.91	0.115	0.103
6	518.85	98.739	0.582	534.28	487.99	0.161	0.051
7	572.86	99.125	0.233	611.43	563.21	0.107	0.024
8	636.51	99.607	0.312	650.01	611.43	0.036	0.025
9	665.44	99.265	0.642	680.87	650.01	0.057	0.045
10	704.02	97.377	2.579	765.74	680.87	0.263	0.25
11	833.25	96.536	3.445	854.47	810.1	0.291	0.288
12	875.68	98.803	1.144	920.05	854.47	0.137	0.128
13	1008.77	92.956	6.989	1139.93	937.4	3.051	2.986
14	1157.29	99.319	0.561	1193.94	1139.93	0.085	0.059
15	1404.18	83.583	16.279	1492.9	1217.08	8.234	8.105
16	1512.19	98.311	1.549	1529.55	1494.83	0.141	0.12
17	1649.14	87.328	12.625	1728.22	1529.55	5.281	5.231
18	1743.65	98.831	1.185	1761.01	1728.22	0.082	0.085
19	1797.66	98.97	0.719	1815.02	1782.23	0.095	0.05
20	1869.02	99.424	0.611	1884.45	1857.45	0.032	0.034
21	1919.17	99.516	0.396	1932.67	1903.74	0.035	0.024
22	2023.33	98.816	0.143	2032.97	2004.04	0.134	0.011
23	2378.23	97.823	2.129	2401.38	2362.8	0.181	0.173
24	2619.33	99.233	0.212	2648.26	2459.24	0.352	0.062
25	2858.51	98.514	0.193	2868.15	2787.14	0.241	-0.029
26	2926.01	96.924	2.177	3014.74	2870.08	1.029	0.558
27	3442.94	86.593	0.508	3556.74	3433.29	6.387	0.249

Comment;

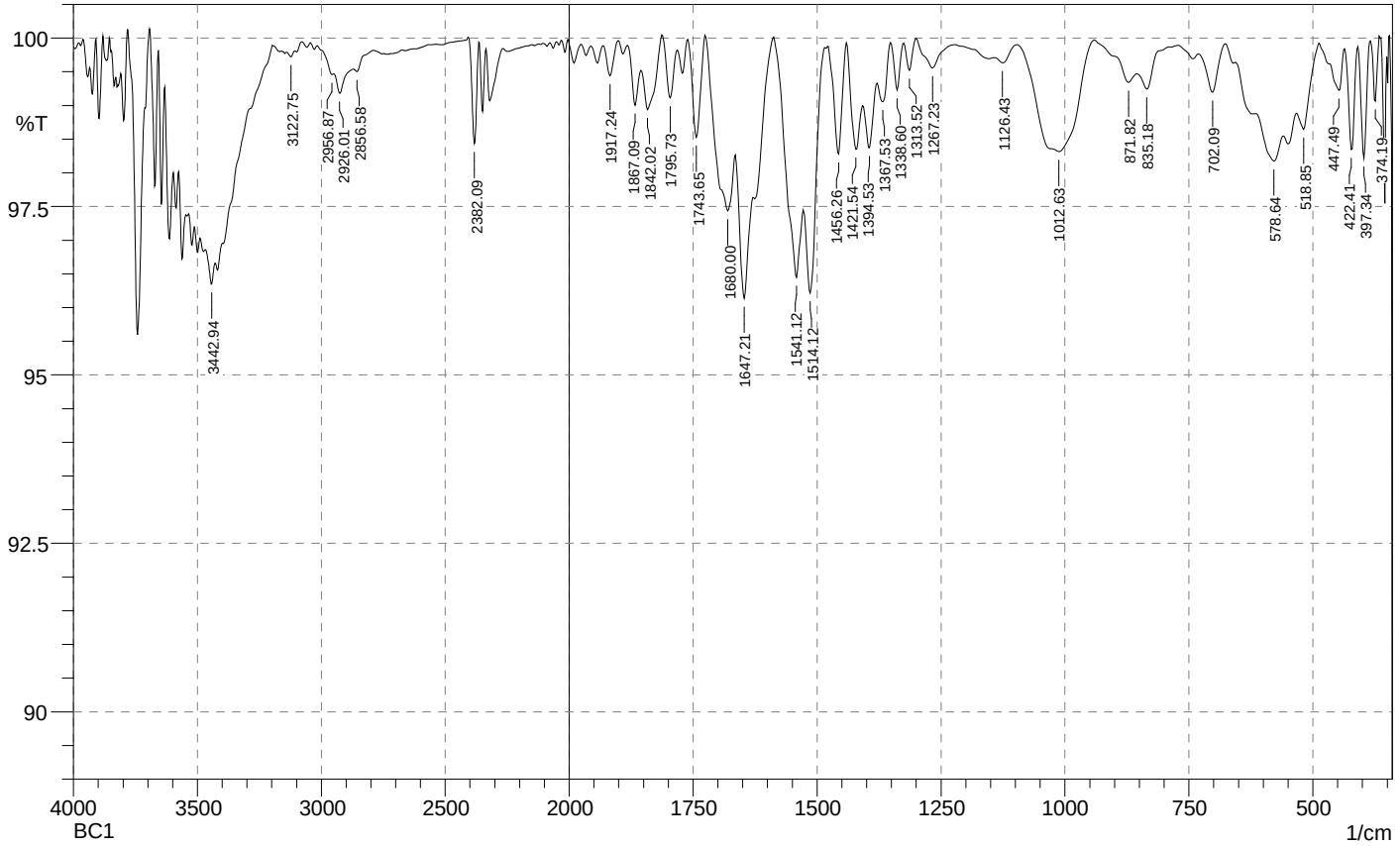
BB2

Date/Time; 7/29/2020 12:55:43 PM

No. of Scans;

Resolution;

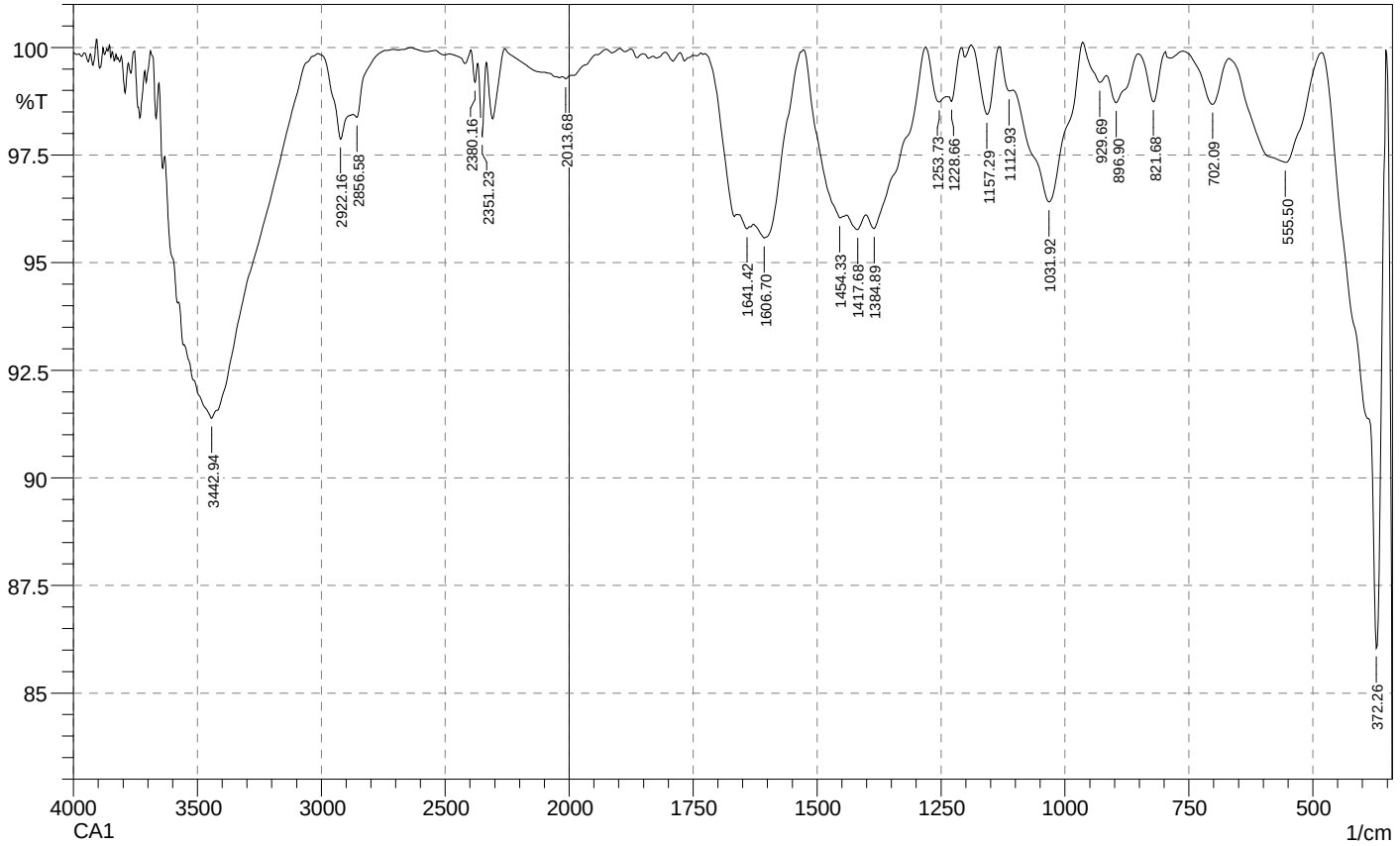
Apodization;



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	374.19	99.064	0.934	383.83	366.48	0.035	0.034
2	397.34	98.216	1.696	408.91	383.83	0.093	0.083
3	422.41	98.346	1.512	435.91	408.91	0.1	0.083
4	447.49	99.226	0.634	487.99	435.91	0.096	0.07
5	518.85	98.647	0.554	532.35	487.99	0.16	0.045
6	578.64	98.176	0.486	615.29	559.36	0.38	0.066
7	702.09	99.198	0.649	731.02	677.01	0.105	0.068
8	835.18	99.242	0.345	854.47	788.89	0.117	0.022
9	871.82	99.343	0.227	941.26	854.47	0.125	0.02
10	1012.63	98.317	1.623	1095.57	941.26	0.668	0.626
11	1126.43	99.632	0.144	1141.86	1095.57	0.052	0.013
12	1267.23	99.559	0.399	1300.02	1220.94	0.078	0.061
13	1313.52	99.52	0.439	1325.1	1300.02	0.027	0.023
14	1338.6	99.227	0.703	1352.1	1325.1	0.045	0.037
15	1367.53	99.055	0.535	1379.1	1352.1	0.079	0.035
16	1394.53	98.371	0.783	1408.04	1379.1	0.152	0.047
17	1421.54	98.347	1.035	1440.83	1408.04	0.157	0.08
18	1456.26	98.278	1.628	1477.47	1440.83	0.142	0.126
19	1514.12	96.218	1.997	1527.62	1485.19	0.419	0.168
20	1541.12	96.446	1.58	1587.42	1527.62	0.535	0.201
21	1647.21	96.137	1.81	1664.57	1629.85	0.452	0.139
22	1680	97.438	1.269	1726.29	1664.57	0.459	0.23
23	1743.65	98.525	1.486	1761.01	1726.29	0.111	0.113
24	1795.73	99.114	0.808	1813.09	1782.23	0.061	0.052
25	1842.02	98.938	0.75	1855.52	1813.09	0.123	0.083
26	1867.09	99.003	0.678	1882.52	1855.52	0.07	0.035
27	1917.24	99.443	0.481	1930.74	1901.81	0.04	0.03
28	2382.09	98.433	1.537	2407.16	2364.73	0.139	0.135
29	2856.58	99.504	0.083	2870.08	2789.07	0.111	-0.002
30	2926.01	99.181	0.31	2949.16	2870.08	0.208	0.038
31	2956.87	99.458	0.059	3016.67	2949.16	0.092	-0.002
32	3122.75	99.721	0.078	3140.11	3107.32	0.034	0.005
33	3442.94	96.348	0.382	3468.01	3429.43	0.581	0.03

Date/Time; 7/29/2020 12:43:27 PM

No. of Scans;



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	372.26	86.045	13.891	480.28	352.97	3.418	3.369
2	555.5	97.332	2.493	667.37	482.2	1.351	1.199
3	702.09	98.676	1.13	761.88	669.3	0.264	0.196
4	821.68	98.734	1.144	852.54	796.6	0.152	0.122
5	896.9	98.718	0.784	916.19	852.54	0.232	0.122
6	929.69	99.19	0.376	964.41	916.19	0.106	0.051
7	1031.92	96.409	3.18	1105.21	964.41	1.31	1.049
8	1112.93	98.985	0.315	1132.21	1105.21	0.082	0.025
9	1157.29	98.443	1.595	1190.08	1132.21	0.181	0.191
10	1228.66	98.748	0.295	1232.51	1209.37	0.071	0.013
11	1253.73	98.733	0.542	1280.73	1238.3	0.164	0.059
12	1384.89	95.794	0.822	1400.32	1282.66	1.37	0.37
13	1417.68	95.765	0.342	1440.83	1402.25	0.697	0.032
14	1454.33	96.041	0.674	1525.69	1440.83	1.025	0.264
15	1606.7	95.57	1.183	1627.92	1527.62	1.188	0.293
16	1641.42	95.787	0.117	1658.78	1635.64	0.418	0.005
17	2013.68	99.269	0.066	2027.19	1994.4	0.099	0.004
18	2351.23	97.927	1.714	2368.59	2333.87	0.178	0.124
19	2380.16	99.187	0.565	2397.52	2368.59	0.059	0.032
20	2856.58	98.378	0.191	2870.08	2708.06	0.355	-0.214
21	2922.16	97.872	1.081	3014.74	2870.08	0.732	0.195
22	3442.94	91.384	0.411	3552.88	3423.65	4.688	0.2

Comment;

CA1

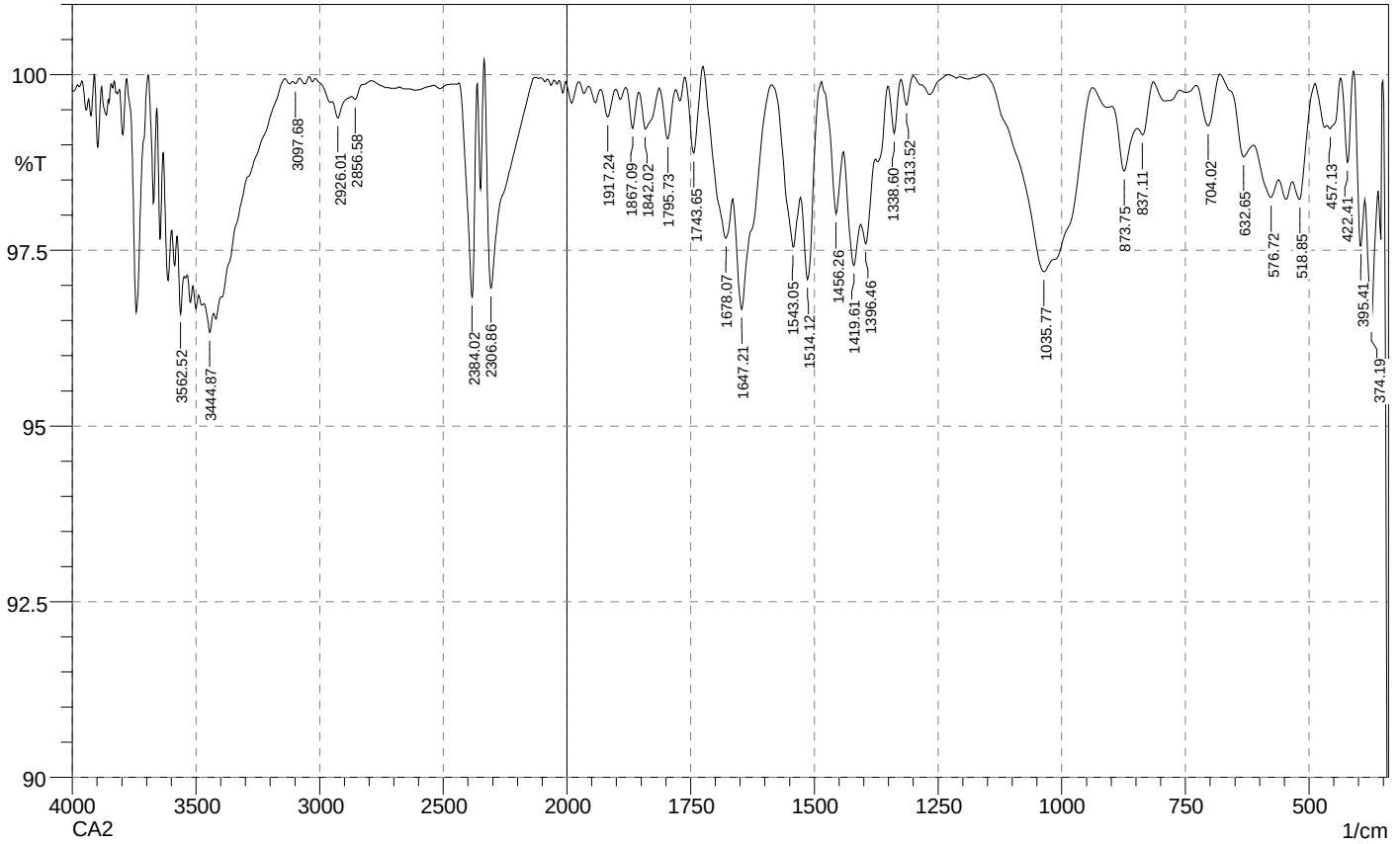
Date/Time; 7/29/2020 12:25:28 PM

No. of Scans;

Resolution;

Apodization;

SHIMADZU

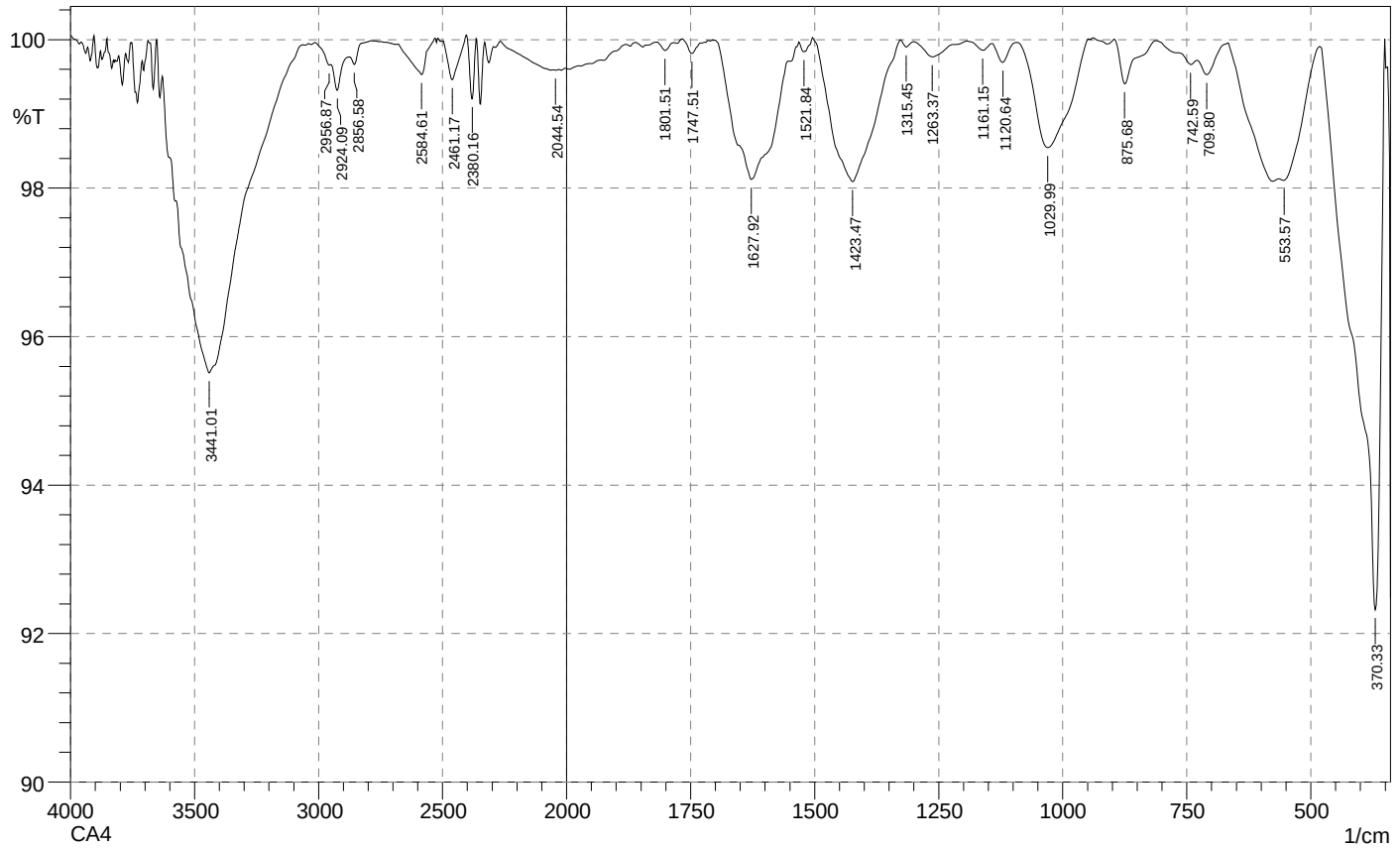


No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	374.19	96.456	1.827	387.69	360.69	0.308	0.105
2	395.41	97.563	1.27	410.84	387.69	0.149	0.061
3	422.41	98.751	1.253	435.91	410.84	0.067	0.067
4	457.13	99.232	0.225	464.84	435.91	0.074	0.025
5	518.85	98.224	0.717	534.28	487.99	0.224	0.057
6	576.72	98.252	0.405	611.43	561.29	0.324	0.051
7	632.65	98.831	0.474	680.87	611.43	0.186	0.036
8	704.02	99.27	0.661	729.09	680.87	0.085	0.07
9	837.11	99.146	0.296	846.75	815.89	0.081	0.023
10	873.75	98.628	0.769	898.83	846.75	0.212	0.074
11	1035.77	97.193	2.708	1157.29	937.4	1.421	1.336
12	1313.52	99.57	0.389	1325.1	1300.02	0.024	0.02
13	1338.6	99.165	0.716	1350.17	1325.1	0.05	0.038
14	1396.46	97.59	0.59	1406.11	1377.17	0.247	0.036
15	1419.61	97.285	0.986	1440.83	1406.11	0.33	0.084
16	1456.26	98.017	1.233	1485.19	1440.83	0.209	0.093
17	1514.12	97.083	1.696	1527.62	1485.19	0.306	0.135
18	1543.05	97.548	1.134	1585.49	1527.62	0.358	0.118
19	1647.21	96.658	1.93	1664.57	1585.49	0.625	0.294
20	1678.07	97.674	0.983	1724.36	1664.57	0.386	0.17
21	1743.65	98.884	1.157	1762.94	1724.36	0.083	0.09
22	1795.73	99.085	0.713	1813.09	1780.3	0.078	0.049
23	1842.02	99.228	0.54	1855.52	1813.09	0.096	0.056
24	1867.09	99.236	0.544	1880.6	1855.52	0.052	0.028
25	1917.24	99.397	0.394	1930.74	1901.81	0.051	0.025
26	2306.86	96.96	3.204	2333.87	2137.13	1.151	1.214
27	2384.02	96.829	3.044	2438.02	2362.8	0.489	0.449
28	2856.58	99.648	0.078	2870.08	2791	0.068	0
29	2926.01	99.385	0.252	2949.16	2870.08	0.149	0.03
30	3097.68	99.874	0.049	3109.25	3082.25	0.012	0.003
31	3444.87	96.332	0.325	3468.01	3429.43	0.592	0.024
32	3562.52	96.591	0.823	3577.95	3547.09	0.4	0.049

Date/Time; 7/29/2020 1:16:39 PM

No. of Scans;

Resolution;



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	370.33	92.322	7.275	480.28	352.97	2.12	1.966
2	553.57	98.104	0.269	565.14	482.2	0.419	0.062
3	709.8	99.529	0.266	729.09	667.37	0.074	0.03
4	742.59	99.667	0.09	767.67	729.09	0.044	0.006
5	875.68	99.404	0.597	896.9	812.03	0.091	0.089
6	1029.99	98.544	1.439	1093.64	948.98	0.492	0.483
7	1120.64	99.695	0.26	1143.79	1093.64	0.035	0.026
8	1161.15	99.857	0.101	1186.22	1143.79	0.017	0.009
9	1263.37	99.767	0.189	1300.02	1217.08	0.049	0.033
10	1315.45	99.902	0.086	1327.03	1300.02	0.007	0.005
11	1423.47	98.087	1.927	1504.48	1327.03	0.792	0.802
12	1521.84	99.838	0.151	1531.48	1504.48	0.011	0.011
13	1627.92	98.118	1.736	1701.22	1552.7	0.739	0.644
14	1747.51	99.817	0.186	1766.8	1714.72	0.018	0.018
15	1801.51	99.853	0.112	1816.94	1782.23	0.013	0.008
16	2044.54	99.588	0.006	2054.19	2031.04	0.041	0
17	2380.16	99.202	0.832	2403.3	2364.73	0.065	0.072
18	2461.17	99.461	0.548	2495.89	2403.3	0.108	0.116
19	2584.61	99.529	0.461	2679.13	2530.61	0.154	0.14
20	2856.58	99.667	0.15	2877.79	2787.14	0.054	0.004
21	2924.09	99.32	0.381	2951.09	2877.79	0.134	0.043
22	2956.87	99.658	0.033	3014.74	2951.09	0.049	-0.003
23	3441.01	95.512	2.867	3574.1	3064.89	5.29	2.798

Comment;

CA4

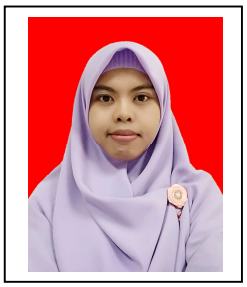
Date/Time; 7/29/2020 12:09:00 PM

No. of Scans;

Resolution;

Apodization;

CURICULUM VITAE



A. Data Pribadi

1. Nama : Lisawati Nurtang
2. Tempat/Tanggal lahir : Sarawak, 11 Januari 1992
3. Alamat : Aspol Panaikang Blok/33
4. Status Sipil
   a. Suami : Rahman, S.Sos
   b. Anak : -

B. Riwayat Pendidikan

- Tamat SD tahun 2004 di MIS DDI Jampu-Jampu Watansoppeng
- Tamat SLTP tahun 2007 di SMP Negeri 4 Lalabata Watansoppeng
- Tamat SLTA tahun 2010 di SMA Negeri 1 Watansoppeng
- Sarjana (S1) tahun 2014 di Universitas Muslim Indonesia

C. Karya Ilmiah /Artikel yang telah dipublikasikan:

- Kandungan Logam Berat Kadmium (Cd) Dan Tembaga (Cu) Pada **Kijing (***Pilsbryoconcha Exilis***)** Di Muara Sungai Tallo Kota Makassar Tahun 2014
- Analysis Of Microplastic Intake By Human Through Red Fish (Nemiptus Japonicas) And Mackerel (Rastrelliger Sp) Consumption In The Coastal Area Community Of Tamasaju Village, North Galesong, Takalar Regency