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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Afrianto, W. F. (2021). The potential distribution prediction of the invasive alien species Acacia decurrens Wild, in Indonesia. *International Journal of Applied Biology*, *5*(5), 74–84. https://doi.org/10.20956/ijab.v5i2.17949

Afrianto, W. F., Hikmat, A., & Widyatmoko, D. (2020). Plant species diversity and degree of homogeneity after the 2010 eruption of Mount Merapi, Indonesia. *Biosaintifika*, *12*(2), 274–281. https://doi.org/10.15294/biosaintifika.v12i2.23525

Alavinpanah, S., Matinfar, H. R., Rafiei Emam, A., Khodaei, K., Hadji Bagheri, R., & Yazdan Panah, A. (2010). Criteria of selecting satellite data for studying land resources. *Desert*, *15*(2), 83–102.

Almalki, R., Khaki, M., Saco, P. M., & Rodriguez, J. F. (2022). Monitoring and mapping vegetation cover changes in arid and semi-arid areas using remote sensing technology: A review. *Remote Sensing*, *14*(20), 5143. https://doi.org/10.3390/rs14205143

Alvarez-Vanhard, E., Corpetti, T., & Houet, T. (2021). UAV & satellite synergies for optical remote sensing applications: A literature review. *Science of Remote Sensing*, *3*(October), 100019. https://doi.org/10.1016/j.srs.2021.100019

Anthony, O., Annette, W., Eadie, C., Cheryl, G., Isabel, H., Jane, M., Kodela, P., & Helen, T. (2001). *Flora of Australia volume 11 A Mimosaceae Acacia Part 1* (Vol. 11A). Australian Biological Resources Study.

Arafat, S. M., Aboelghar, M. A., & Ahmed, E. F. (2013). Crop Discrimination Using Field Hyper Spectral Remotely Sensed Data. *Advances in Remote Sensing*, *02*(02), 63–70. https://doi.org/10.4236/ars.2013.22009

Arasumani, M., Thiel, F., Pham, V. D., Hellmann, C., Kaiser, M., & van der Linden, S. (2023). Advancing peatland vegetation mapping by spaceborne imaging spectroscopy. *Ecological Indicators*, *154*(June), 110665. https://doi.org/10.1016/j.ecolind.2023.110665

ASDI. (2007). *ASD Accessories User Manual*. ASD Inc.

Backer, C. A., & van Den Brink, B. (1963). *Flora of Java (Spermatophyta Only)* (2nd ed.). The Netherland.

UNIVERSITAS
GADJAH MADA
Pemetaan Spesies Invasif Acacia decurrens Menggunakan Citra Hiperspektral PRISMA dan Multiple Endmember Spectral Mixture Analysis (MESMA) Di Sebagian Taman Nasional Gunung Merapi
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Bhargava, A., Sachdeva, A., Sharma, K., Alsharif, M. H., Uthansakul, P., & Uthansakul, M. (2024). Hyperspectral imaging and its applications: A review. *Heliyon*, *10*(12), 33208. https://doi.org/10.1016/j.heliyon.2024.e33208

Bissessur, P., Dennis Reinegger, R., Baider, C., Mamoodee, R., & Benjamin Vincent Florens, F. (2023). Invasive alien plant control: The priority to save one of the most rapidly declining island-endemic plant species worldwide. *Journal for Nature Conservation*, *73*(April), 126417. https://doi.org/10.1016/j.jnc.2023.126417

Bonanno, G. (2016). Alien species: To remove or not to remove? That is the question. *Environmental Science and Policy*, *59*, 67–73. https://doi.org/10.1016/j.envsci.2016.02.011

Cavalli, R. M. (2022). Spatial Validation of Spectral Unmixing Results: A Case Study of Venice City. *Remote Sensing*, *14*(20). https://doi.org/10.3390/rs14205165

Chang, Y., Ma, Q., Qi, P., Guo, X., Lin, D., Guo, L., Di, D., Zhao, Y., Wang, H., & Chen, T. (2025). Characteristics of orographic clouds and associated mechanisms in the Qilian Mountains, northeastern Tibetan Plateau based on FengYun-4A satellite TBB product. *Atmospheric Research*, *320*(November), 1–16. https://doi.org/10.1016/j.atmosres.2025.108031

Chanie, Y., & Abewa, A. (2021). Expansion of Acacia decurrens plantation on the acidic highlands of Awi zone, Ethiopia, and its socio-economic benefits. *Cogent Food and Agriculture*, *7*(1), 1917150. https://doi.org/10.1080/23311932.2021.1917150

Chaudhary, A., Kala, A., Adhikari, B. S., & Rawat, G. S. (2022). Perception and knowledge of community people on invasive Alien Plant species in Chandak-Aunla Ghat and Hat-Kalika watersheds of Kailash sacred landscape - India: A case study. *Environmental Challenges*, *9*, 100604. https://doi.org/10.1016/j.envc.2022.100604

Chu, Q., Liu, Y., Peng, C., Zhang, Y., Cernava, T., Qiong, L., Zhou, Y., Siddiqui, J. A., Ghani, M. I., Wang, Q., Liu, Y., & Chen, X. (2024). Invasive alien plants in the Qinghai-Tibetan Plateau (China): Current state and future predictions.

UNIVERSITAS
GADJAH MADA
Pemetaan Spesies Invasif Acacia decurrens Menggunakan Citra Hiperspektral PRISMA dan Multiple Endmember Spectral Mixture Analysis (MESMA) Di Sebagian Taman Nasional Gunung Merapi
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Ecological Indicators, *166*, 112488. https://doi.org/10.1016/j.ecolind.2024.112488

Cogliati, S., Sarti, F., Chiarantini, L., Cosi, M., Lorusso, R., Lopinto, E., Miglietta, F., Genesio, L., Guanter, L., Damm, A., Pérez-López, S., Scheffler, D., Tagliabue, G., Panigada, C., Rascher, U., Dowling, T. P. F., Giardino, C., & Colombo, R. (2021). The PRISMA imaging spectroscopy mission: overview and first performance analysis. *Remote Sensing of Environment*, *262*, 112499. https://doi.org/10.1016/j.rse.2021.112499

Damarjati, S., Nugraha, W. A., & Arjasakusuma, S. (2022). Mapping the invasive palm species Arenga obtusifolia using multiple *endmember* spectral mixture analysis (MESMA) and PRISMA hyperspectral data in Ujung Kulon National Park, Indonesia. *Geocarto International*, *37*(27), 18254–18274. https://doi.org/10.1080/10106049.2022.2138981

Dash, J. P., Watt, M. S., Pearse, G. D., Heaphy, M., & Dungey, H. S. (2017). Assessing very high resolution UAV imagery for monitoring forest health during a simulated disease outbreak. *ISPRS Journal of Photogrammetry and Remote Sensing*, *131*, 1–14. https://doi.org/10.1016/j.isprsjprs.2017.07.007

De Luca, G., Carotenuto, F., Genesio, L., Pepe, M., Toscano, P., Boschetti, M., Miglietta, F., & Gioli, B. (2024). Improving PRISMA hyperspectral spatial resolution and geolocation by using Sentinel-2: development and test of an operational procedure in urban and rural areas. *Journal of Photogrammetry and Remote Sensing*, *215*, 112–135. https://doi.org/10.1016/j.isprsjprs.2024.07.003

Degerickx, J., Roberts, D. A., & Somers, B. (2019). Enhancing the performance of Multiple Endmember Spectral Mixture Analysis (MESMA) for urban land cover mapping using airborne lidar data and band selection. *Remote Sensing of Environment*, *221*, 260–273. https://doi.org/10.1016/j.rse.2018.11.026

Deloso, B. E., & Marler, T. E. (2020). Bi-pinnate compound Serianthes nelsonii leaf-level plasticity magnifies leaflet-level plasticity. *Biology*, *9*(10), 1–15. https://doi.org/10.3390/biology9100333

Dixit, A., & Agarwal, S. (2021). Non-linear spectral unmixing of hyperspectral data

UNIVERSITAS
GADJAH MADA
Pemetaan Spesies Invasif Acacia decurrens Menggunakan Citra Hiperspektral PRISMA dan Multiple Endmember Spectral Mixture Analysis (MESMA) Di Sebagian Taman Nasional Gunung Merapi
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

using Modified PPNMM. *Applied Computing and Geosciences*, *9*, 100053. https://doi.org/10.1016/j.acags.2021.100053

Duncan, P., Podest, E., Esler, K. J., Geerts, S., & Lyons, C. (2023). Mapping Invasive Herbaceous Plant Species with Sentinel-2 Satellite Imagery: Echium plantagineum in a Mediterranean Shrubland as a Case Study. *Geomatics*, *3*(2), 328–344. https://doi.org/10.3390/geomatics3020018

Fernández-García, V., Marcos, E., Fernández-Guisuraga, J. M., Fernández-Manso, A., Quintano, C., Suárez-Seoane, S., & Calvo, L. (2021). Multiple *endmember* spectral mixture analysis (Mesma) applied to the study of habitat diversity in the fine-grained landscapes of the cantabrian mountains. *Remote Sensing*, *13*(5), 1–19. https://doi.org/10.3390/rs13050979

Fernández-Guisuraga, J. M., Monzón-González, A., Fernández-García, V., Peña-Pérez, S. A., & Calvo, L. (2025). Estimation of Prometheus fuel types using physically based remote sensing techniques. In *Fire Ecology* (Vol. 21, Issue 1, pp. 2–21). https://doi.org/10.1186/s42408-025-00373-4

Franke, J., Roberts, D. A., Halligan, K., & Menz, G. (2009). Hierarchical Multiple Endmember Spectral Mixture Analysis (MESMA) of hyperspectral imagery for urban environments. *Remote Sensing of Environment*, *113*(8), 1712–1723. https://doi.org/10.1016/j.rse.2009.03.018

Ghazaryan, G., Krupp, L., Seyfried, S., Landgraf, N., & Nendel, C. (2024). Enhancing peatland monitoring through multisource remote sensing: optical and radar data applications. *International Journal of Remote Sensing*, *45*(18), 6372–6394. https://doi.org/10.1080/01431161.2024.2387133

Gibson, M. R., Richardson, D. M., Marchante, E., Marchante, H., Rodger, J. G., Stone, G. N., Byrne, M., Fuentes-Ramírez, A., George, N., Harris, C., Johnson, S. D., Roux, J. J. L., Miller, J. T., Murphy, D. J., Pauw, A., Prescott, M. N., Wandrag, E. M., & Wilson, J. R. U. (2011). Reproductive biology of Australian acacias: Important mediator of invasiveness? *Diversity and Distributions*, *17*(5), 911–933. https://doi.org/10.1111/j.1472-4642.2011.00808.x

Goebel, M., & Iwaszczuk, D. (2023). Spectral Analysis of Images of Plants Under

UNIVERSITAS
GADJAH MADA
Pemetaan Spesies Invasif Acacia decurrens Menggunakan Citra Hiperspektral PRISMA dan Multiple Endmember Spectral Mixture Analysis (MESMA) Di Sebagian Taman Nasional Gunung Merapi
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Stress Using a Close-Range Camera. *Remote Sensing and Spatial Information Sciences*, *48*(1/W3-2023), 63–69. https://doi.org/10.5194/isprs-archives-XLVIII-1-W3-2023-63-2023

Habashi, J., Jamshid Moghadam, H., Mohammady Oskouei, M., Pour, A. B., & Hashim, M. (2024). PRISMA hyperspectral remote sensing data for mapping alteration minerals in Sar-e-Châh-e-Shur Region, Birjand, Iran. In *Remote Sensing* (Vol. 16, Issue 7). https://doi.org/10.3390/rs16071277

Holzman, M. E., Rivas, R. E., & Bayala, M. I. (2021). Relationship between tir and nir-swir as indicator of vegetation water availability. *Remote Sensing*, *13*(17). https://doi.org/10.3390/rs13173371

Iqbal, I. M., Balzter, H., Firdaus-e-Bareen, & Shabbir, A. (2023). Mapping Lantana camara and Leucaena leucocephala in protected areas of Pakistan: A geo-spatial approach. *Remote Sensing*, *15*(4), 1020. https://doi.org/10.3390/rs15041020

Iqbal, I. M., Balzter, H., Firdaus-E-barren, & Shabbir, A. (2021). Identifying the spectral signatures of invasive and native plant species in two protected areas of pakistan through field spectroscopy. *Remote Sensing*, *13*(19), 2–26. https://doi.org/10.3390/rs13194009

Jensen, T., Hass, F. S., Akbar, M. S., Petersen, P. H., & Arsanjani, J. J. (2020). Employing machine learning for detection of invasive species using sentinel-2 and aviris data: The case of Kudzu in the United States. *Sustainability (Switzerland)*, *12*(9). https://doi.org/10.3390/SU12093544

Ji, C., Li, X., Wei, H., & Li, S. (2020). Comparison of Di ff erent Multispectral Sensors for Photosynthetic and Non-Photosynthetic. *Remote Sensing*, *12*(115), 1–17. https://doi.org/10.3390/rs12010115

Keshava, N., & Mustard, J. F. (2002). Spectral unmixing. *IEEE Signal Processing Magazine*, *19*(1), 44–57. https://doi.org/10.1109/79.974727

Khdery, G., & Yones, M. (2021). Innovative spectral library for identification common wild plants using hyperspectral technology in Northwestern Coast, Egypt. *Egyptian Journal of Remote Sensing and Space Science*, *24*(3), 485–491. https://doi.org/10.1016/j.ejrs.2020.08.002

UNIVERSITAS
GADJAH MADA
Pemetaan Spesies Invasif Acacia decurrens Menggunakan Citra Hiperspektral PRISMA dan Multiple Endmember Spectral Mixture Analysis (MESMA) Di Sebagian Taman Nasional Gunung Merapi
Hana Syafi Raihan, Dr. Nur Mohammad Farda, S.Si., M.Cs.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Kishore, B. S. P. C., Kumar, A., Saikia, P., Lele, N., Srivastava, P., Pulla, S., Suresh, H., Kumar Bhattarcharya, B., Latif Khan, M., & Sukumar, R. (2024). Mapping of understorey invasive plant species clusters of Lantana camara and Chromolaena odorata using airborne hyperspectral remote sensing. *Advances in Space Research*, *73*(2), 1379–1396. https://doi.org/10.1016/j.asr.2022.12.026

Kopeć, D., Zakrzewska, A., Halladin-Dąbrowska, A., Wylazłowska, J., & Sławik, Ł. (2023). The essence of acquisition time of airborne hyperspectral and on-ground reference data for classification of highly invasive annual vine Echinocystis lobata (Michx.) Torr. & A. Gray. *GIScience and Remote Sensing*, *60*(1), 2204682. https://doi.org/10.1080/15481603.2023.2204682

Kumar Rai, P., & Singh, J. S. (2020). Invasive alien plant species: Their impact on environment, ecosystem services and human health. *Ecological Indicators*, *111*, 106020. https://doi.org/10.1016/j.ecolind.2019.106020

Kunwar, R. M. (2003). Invasive alien plants and Eupatorium: Biodiversity and livelihood. *Himalayan Journal of Sciences*, *1*(2), 129–133. https://doi.org/10.3126/hjs.v1i2.213

Liew, O. W., Chong, P. C. J., Li, B., & Asundi, A. K. (2008). Signature optical cues: Emerging technologies for monitoring plant health. In *Sensors* (Vol. 8, Issue 5). https://doi.org/10.3390/s8053205

Lillesand, T., Kiefer, R., & Chipman, J. (2015). Remote sensing and image interpretation. In *Australian Journal of Geodesy, Photogrammetry & Surveying*. JohnWiley & Sons.

Loizzo, R., Ananasso, C., Guarini, R., Lopinto, E., Candela, L., & Pisani, A. R. (2016). The prisma hyperspectral mission. *Living Planet Symposium*, 1–4.

Lorenzo, P., González, L., & Reigosa, M. J. (2010). The genus Acacia as invader: The characteristic case of Acacia dealbata link in Europe. *Annals of Forest Science*, *67*(1), 101–101. https://doi.org/10.1051/forest/2009082

Malhi, R. K. M., Kiran, G. S., Srivastava, P. K., Bhattacharya, B. K., & Mohanta, A. (2024). Spectral mixture analysis of AVIRIS-NG data for grouping plant functional types. *Advances in Space Research*, *73*(2), 1439–1448.

UNIVERSITAS
GADJAH MADA
Pemetaan Spesies Invasif Acacia decurrens Menggunakan Citra Hiperspektral PRISMA dan Multiple Endmember Spectral Mixture Analysis (MESMA) Di Sebagian Taman Nasional Gunung Merapi
Hana Syafi Raihan, Dr. Nur Mohammad Farda, S.Si., M.Cs.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

https://doi.org/10.1016/j.asr.2022.12.023

McCoy, R. (2005). *Field Methods in Remote Sensing*. The Guilford Press.

Meerdink, S., Hiatt, D., Flory, S. L., & Zare, A. (2024). Dealing with imperfect data for invasive species detection using multispectral imagery. *Ecological Informatics*, *79*, 102432. https://doi.org/10.1016/j.ecoinf.2023.102432

Michishita, R., Jiang, Z., & Xu, B. (2012). Monitoring two decades of urbanization in the Poyang Lake area, China through spectral unmixing. *Remote Sensing of Environment*, *117*(September), 3–18. https://doi.org/10.1016/j.rse.2011.06.021

Mondal, B. P. (2018). Hyperspectral analysis of soil properties for soil management. *Advances in Agriculture for Sustainable Development*, *September*, 59–65. https://www.researchgate.net/publication/327884743

Morris, T. L., Esler, K. J., Barger, N. N., Jacobs, S. M., & Cramer, M. D. (2011). Ecophysiological traits associated with the competitive ability of invasive Australian acacias. *Diversity and Distributions*, *17*(5), 898–910. https://doi.org/10.1111/j.1472-4642.2011.00802.x

Ndlovu, H., & Shoko, C. (2023). Assessing Lantana camara spatial distribution in response to rainfall and temperature variations in Inkomati catchment in Mpumalanga. *Physics and Chemistry of the Earth*, *132*, 103470. https://doi.org/10.1016/j.pce.2023.103470

Nembambula, F., Malahlela, O. E., & Mugwedi, L. (2023). Exploring the capability of high-resolution satellite data in delineating the potential distribution of common invasive alien plant species in the Tshivhase Tea Estate. *Applied Geomatics*, *15*(3), 683–695. https://doi.org/10.1007/s12518-023-00520-z

Nigussie, Z., Tsunekawa, A., Haregeweyn, N., Tsubo, M., Adgo, E., Ayalew, Z., & Abele, S. (2021). The impacts of Acacia decurrens plantations on livelihoods in rural Ethiopia. *Land Use Policy*, *100*, 104928. https://doi.org/10.1016/j.landusepol.2020.104928

Nininahazwe, F., Théau, J., Marc Antoine, G., & Varin, M. (2023a). Mapping invasive alien plant species with very high spatial resolution and multi-date satellite imagery using object-based and machine learning techniques: A comparative

UNIVERSITAS
GADJAH MADA
Pemetaan Spesies Invasif Acacia decurrens Menggunakan Citra Hiperspektral PRISMA dan Multiple Endmember Spectral Mixture Analysis (MESMA) Di Sebagian Taman Nasional Gunung Merapi
Hana Syafi Raihan, Dr. Nur Mohammad Farda, S.Si., M.Cs.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

study. *GIScience and Remote Sensing*, *60*(1), 2190203. https://doi.org/10.1080/15481603.2023.2190203

Nininahazwe, F., Théau, J., Marc Antoine, G., & Varin, M. (2023b). Mapping invasive alien plant species with very high spatial resolution and multi-date satellite imagery using object-based and machine learning techniques: A comparative study. *GIScience and Remote Sensing*, *60*(1). https://doi.org/10.1080/15481603.2023.2190203

Okujeni, A., Jänicke, C., Cooper, S., Frantz, D., Hostert, P., Clark, M., Segl, K., & van der Linden, S. (2021). Multi-season unmixing of vegetation class fractions across diverse Californian ecoregions using simulated spaceborne imaging spectroscopy data. *Remote Sensing of Environment*, *264*, 112588. https://doi.org/10.1016/j.rse.2021.112558

Ostertag, R., Cordell, S., Michaud, J., Cole, T. C., Schulten, J. R., Publico, K. M., & Enoka, J. H. (2009). Ecosystem and restoration consequences of invasive woody species removal in Hawaiian lowland wet forest. *Ecosystems*, *12*(3), 503–515. https://doi.org/10.1007/s10021-009-9239-3

Padmanaba, M., Tomlinson, K. W., Hughes, A. C., & Corlett, R. T. (2017). Alien plant invasions of protected areas in Java, Indonesia. *Scientific Reports*, *7*(1), 9334. https://doi.org/10.1038/s41598-017-09768-z

Pathak, H. N., Bhuju, D. R., Shrestha, B. B., & Ranjitkar, S. (2021). Impacts of invasive alien plants on ecosystem services of Ramsar lake cluster in middle mountain Nepal. *Global Ecology and Conservation*, *27*, e01597. https://doi.org/10.1016/j.gecco.2021.e01597

Paz-Kagan, T., Caras, T., Herrmann, I., Shachak, M., & Karnieli, A. (2017). Multiscale mapping of species diversity under changed land use using imaging spectroscopy: *Ecological Applications*, *27*(5), 1466–1484. https://doi.org/10.1002/eap.1540

Pengra, B. W., Johnston, C. A., & Loveland, T. R. (2007). Mapping an invasive plant, Phragmites australis, in coastal wetlands using the EO-1 Hyperion hyperspectral sensor. *Remote Sensing of Environment*, *108*(1), 74–81. https://doi.org/10.1016/j.rse.2006.11.002

UNIVERSITAS
GADJAH MADA
Pemetaan Spesies Invasif Acacia decurrens Menggunakan Citra Hiperspektral PRISMA dan Multiple Endmember Spectral Mixture Analysis (MESMA) Di Sebagian Taman Nasional Gunung Merapi
Hana Syafi Raihan, Dr. Nur Mohammad Farda, S.Si., M.Cs.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Prayoga, F. R., Kamal, M., & Arjasakusuma, S. (2024). Mapping of Invasive Species Acacia Decurrens in Part of Mount Merbabu National Park Using Prisma Hyperspectral Imagery. *Journal Geografika*, *5*(1), 63–75.

Pu, R. (2017). Hyperspectral remote sensing fundamentals and practices. In *CRC Press*.

Quintano, C., Fernández-Manso, A., & Roberts, D. A. (2013). Multiple Endmember Spectral Mixture Analysis (MESMA) to map burn severity levels from Landsat images in Mediterranean countries. *Remote Sensing of Environment*, *136*, 76–88. https://doi.org/10.1016/j.rse.2013.04.017

Quintano, C., Fernández-Manso, A., & Roberts, D. A. (2020). Enhanced burn severity estimation using fine resolution ET and MESMA fraction images with machine learning algorithm. *Remote Sensing of Environment*, *244*, 111815. https://doi.org/10.1016/j.rse.2020.111815

Rahayu, S., Pratama, R. G., Imron, M. A., Mahmud, J., & Nugroho, W. D. (2021). The occurrence of gummosis on invasive acacia decurrens after mount merapi eruption in Yogyakarta, Indonesia. *Management of Biological Invasions*, *12*(4), 886–900. https://doi.org/10.3391/MBI.2021.12.4.08

Raja, J., Moorthi, K., & Rajendran, A. (2022). De-noising of salt and pepper noise using deep learning-based alpha-guided grey wolf optimization. *Applied Soft Computing*, *130*, 109649. https://doi.org/10.1016/j.asoc.2022.109649

Riaño, D., Chuvieco, E., Salas, J., & Aguado, I. (2003). Assessment of different topographic corrections in landsat-TM data for mapping vegetation types. *Transactions on Geoscience and Remote Sensing*, *41*, 1056–1061. https://doi.org/10.1109/TGRS.2003.811693

Roberts, D. A., Gardner, M., Church, R., Ustin, S., Scheer, G., & Green, R. O. (1998). Mapping chaparral in the Santa Monica Mountains using multiple *endmember* spectral mixture models. *Remote Sensing of Environment*, *65*(3), 267–279. https://doi.org/10.1016/S0034-4257(98)00037-6

Roman, A., & Ursu, T. (2016). *Multispectral satellite imagery and airborne laser scanning techniques for the detection of archaeological vegetation marks*. Mega

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GADJAH MADA
Pemetaan Spesies Invasif Acacia decurrens Menggunakan Citra Hiperspektral PRISMA dan Multiple Endmember Spectral Mixture Analysis (MESMA) Di Sebagian Taman Nasional Gunung Merapi
Hana Syafi Raihan, Dr. Nur Mohammad Farda, S.Si., M.Cs.
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Publishing House. https://www.researchgate.net/publication/315797574

Rossi, C., & Gholizadeh, H. (2023). Uncovering the hidden: Leveraging sub-pixel spectral diversity to estimate plant diversity from space. *Remote Sensing of Environment*, *296*, 113734. https://doi.org/10.1016/j.rse.2023.113734

Roth, K. L., Dennison, P. E., & Roberts, D. A. (2012). Comparing *endmember* selection techniques for accurate mapping of plant species and land cover using imaging spectrometer data. *Remote Sensing of Environment*, *127*, 139–152. https://doi.org/10.1016/j.rse.2012.08.030

Sabat-Tomala, A., Raczko, E., & Zagajewski, B. (2022). Mapping invasive plant species with hyperspectral data based on iterative accuracy assessment techniques. *Remote Sensing*, *14*, 1–19. https://doi.org/10.3390/rs14010064

Salko, S. S., Hovi, A., Burdun, I., Juola, J., & Rautiainen, M. (2024). Hyperspectral characterization of vegetation in hemiboreal, boreal and Arctic peatlands using a geographically extensive field dataset. *Ecological Informatics*, *82*, 102772. https://doi.org/10.1016/j.ecoinf.2024.102772

Schaaf, A., Dennison, P., Fryer, G., Roth, K., & Roberts, D. (2011). Mapping plant functional types at multiple spatial resolutions using imaging spectrometer data. *GIScience and Remote Sensing*, *48*(3), 324–344. https://doi.org/10.2747/1548-1603.48.3.324

Seeley, M., & Asner, G. P. (2021). Imaging spectroscopy for conservation applications. *Remote Sensing*, *13*(2), 1–17. https://doi.org/10.3390/rs13020292

Shebl, A., Abriha, D., Fahil, A. S., El-Dokouny, H. A., Elrasheed, A. A., & Csámer, Á. (2023). PRISMA hyperspectral data for lithological mapping in the Egyptian Eastern Desert: Evaluating the support vector machine, random forest, and XG boost machine learning algorithms. *Ore Geology Reviews*, *161*, 105652. https://doi.org/10.1016/j.oregeorev.2023.105652

Shennan, G., & Crabbe, R. (2024). A review of spaceborne synthetic aperture radar for invasive alien plant research. *Remote Sensing Applications: Society and Environment*, *36*(1), 101358. https://doi.org/10.1016/j.rsase.2024.101358

Shi, C., & Wang, L. (2014). Incorporating spatial information in spectral unmixing: A

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review. *Remote Sensing of Environment*, *149*, 70–87. https://doi.org/10.1016/j.rse.2014.03.034

Somers, B., Asner, G. P., Tits, L., & Coppin, P. (2011). Endmember variability in spectral mixture Analysis: A review. *Remote Sensing of Environment*, *115*(7), 1603–1616. https://doi.org/10.1016/j.rse.2011.03.003

Song, D. X., Wang, Z., He, T., Wang, H., & Liang, S. (2022). Estimation and validation of 30 m fractional vegetation cover over China through integrated use of Landsat 8 and Gaofen 2 data. *Science of Remote Sensing*, *6*(May), 100058. https://doi.org/10.1016/j.srs.2022.100058

Storey, J., Choate, M., & Lee, K. (2014). Landsat 8 operational land imager on-orbit geometric calibration and performance. *Remote Sensing*, *6*(11), 11127–11152. https://doi.org/10.3390/rs61111127

Sulistyarini, A. (2023). *Multiple endmember spectral mixture analysis (MESMA) untuk pemetaan spesies invasif Acacia decurrens di Sebagian Taman Nasional Gunung Merbabu Menggunakan Citra Hiperspektral PRISMA*. Universitas Gadjah Mada.

Sunardi, Sulistijorini, & Setyawati, T. (2017). Invasion of acacia decurrens willd. After eruption of Mount Merapi, Indonesia. *Biotropia*, *24*(1), 35–46. https://doi.org/10.11598/btb.2017.24.1.524

Teillet, P. M., Guindon, B., & Goodenough, D. G. (1982). On the slope-aspect correction of multispectral scanner data. *Canadian Journal of Remote Sensing*, *8*(2), 84–106. https://doi.org/10.1080/07038992.1982.10855028

Tesfamichael, S. G., Newete, S. W., Adam, E., & Dubula, B. (2018). Field spectroradiometer and simulated multispectral bands for discriminating invasive species from morphologically similar cohabitant plants. *GIScience and Remote Sensing*, *55*(3), 417–436. https://doi.org/10.1080/15481603.2017.1396658

Thenkabail, P. S., Lyon, J. G., & Huete, A. (2019). *Hyperspectral remote sensing of vegetation: Advanced application in remote sensing of agricultural crops and natural vegetation*. CRC Press.

Tripathi, P., & Garg, R. D. (2020). First impressions from the PRISMA hyperspectral mission. *Current Science*, *119*(8), 1267–1281.

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https://doi.org/10.18520/cs/v119/i8/1267-1281

Umarhadi, D. A., & Danoedoro, P. (2020). The effect of topographic correction on canopy density mapping using satellite imagery in mountainous area. *International Journal on Advanced Science, Engineering and Information Technology*, *10*(3), 1317–1325. https://doi.org/10.18517/ijaseit.10.3.7739

Valero-Jorge, A., González-De Zayas, R., Matos-Pupo, F., Becerra-González, A. L., & Álvarez-Taboada, F. (2024). Mapping and monitoring of the invasive species dichrostachys cinerea (Marabú) in Central Cuba using landsat imagery and machine learning (1994–2022). *Remote Sensing*, *16*(5), 798. https://doi.org/10.3390/rs16050798

Vangi, E., D'amico, G., Francini, S., Giannetti, F., Lasserre, B., Marchetti, M., & Chirici, G. (2021). The new hyperspectral satellite prisma: Imagery for forest types discrimination. *Sensors*, *21*(4), 1182. https://doi.org/10.3390/s21041182

Wang, J., Yang, D., Chen, S., Zhu, X., Wu, S., Bogonovich, M., Guo, Z., Zhu, Z., & Wu, J. (2021). Automatic cloud and cloud shadow detection in tropical areas for PlanetScope satellite images. *Remote Sensing of Environment*, *264*(July), 112604. https://doi.org/10.1016/j.rse.2021.112604

Wijayati, D., & Rijanta, R. (2020). Evaluasi zonasi Taman Nasional Gunung Merapi. *Jurnal Litbang Sukowati*, *3*(2), 92–106. https://doi.org/10.32630/sukowati.v3i2.93

Yang, Y., Bian, Z., Ren, W., Wu, J., Liu, J., & Shrestha, N. (2023). Spatial patterns and hotspots of plant invasion in China. *Global Ecology and Conservation*, *43*, e02424. https://doi.org/10.1016/j.gecco.2023.e02424

Yildiz, V., & Yaman, A. (2025). Comparison and accuracy assessment of unmanned aerial vehicle and terrestrial measurement in base map production. *Egyptian Journal of Remote Sensing and Space Science*, *28*(1), 53–62. https://doi.org/10.1016/j.ejrs.2024.12.003