

Dr. Ali Kaan Yetik

Assistant Professor — Division of Land and Water Resources, Department of Biosystems Engineering

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PROFILE

Ali Kaan Yetik is an Assistant Professor in the Division of Land and Water Resources, Department of Biosystems Engineering, Niğde Ömer Halisdemir University, having served in the same department as a Research Assistant from 2020 to 2025.

All three degrees in Biosystems Engineering — BSc (2019), MSc (2021) and PhD (2025) — were completed at Bursa Uludağ University (formerly Uludağ University). The doctoral thesis examined the impacts of climate change on reference crop evapotranspiration, drought and sugar beet yield in Türkiye.

Research interests span irrigation water management and deficit irrigation, crop water stress, climate change impacts on crop water use, drought and precipitation, water footprints, and crop and hydrological modelling, more recently combined with remote sensing and machine learning.

Research interests

- Irrigation water management and deficit irrigation
- Crop water stress (CWSI)
- Climate change impacts on crop water use, drought and precipitation
- Water footprint
- Crop and hydrological modelling (LINTUL-MULTICROP, AquaCrop, CROPWAT, TAGEM-SUET, HBV)
- Remote sensing and machine learning in agriculture

POSITIONS

- **Assistant Professor**, Niğde Ömer Halisdemir University, Department of Biosystems Engineering, Land and Water Resources (11 Nov 2025 – present)
- **Research Assistant**, Niğde Ömer Halisdemir University, Department of Biosystems Engineering, Land and Water Resources (15 Jan 2020 – 11 Nov 2025)

EDUCATION

- **PhD, Biosystems Engineering** — Bursa Uludağ University, Graduate School of Natural and Applied Sciences (2021–2025; completed 12 Feb 2025)
Thesis: İklim değişikliğinin Türkiye'de referans bitki su tüketimi, kuraklık ve şeker pancarı verimi üzerine etkileri [*Impacts of climate change on reference crop evapotranspiration, drought and sugar beet yield in Türkiye — translated*]
Advisor: Burak Nazmi Candoğan
- **MSc (with thesis), Biosystems Engineering** — Bursa Uludağ University, Graduate School of Natural and Applied Sciences (2019–2021; completed 27 Jan 2021)
Thesis: Şeker pancarında (*Beta vulgaris* L.) su-verim ilişkilerinin ve bitki su stres indeksi (CWSI) kullanılarak sulama zamanının belirlenmesi [*Determining water–yield relationships and irrigation scheduling in sugar beet (Beta vulgaris L.) using the Crop Water Stress Index (CWSI) — translated*]
Advisor: Assoc. Prof. Dr. Burak Nazmi Candoğan
- **BSc, Biosystems Engineering** — Uludağ University, Faculty of Agriculture (2014–2019; completed 31 Jan 2019)

ADMINISTRATIVE & EDITORIAL DUTIES

- Erasmus Coordinator, Department of Biosystems Engineering (since 10 Dec 2025)
- Member, Faculty Executive Board, Faculty of Agricultural Sciences and Technologies (since 17 Dec 2025)
- Editorial Board Member, *Journal of Agricultural Sciences (SCI)*, Ankara University (since 12 Nov 2025)

PUBLICATIONS

International refereed journal articles (17)

1. 2026 — Yetik, A. K., Candoğan, B. N. Projected Variations in Reference Crop Evapotranspiration Across Türkiye. *Selcuk Journal of Agriculture and Food Sciences*, 40.
doi:10.15316/selcukjafsci.1821374
2. 2026 — Yetik, A. K. Projected Blue and Green Water Footprints of Irrigated Potato under Future Climate Scenarios in Semi-Arid Central Anatolia, Türkiye. *Potato Research*, 69, 162.
doi:10.1007/s11540-026-10115-x
3. 2026 — Yetik, A. K., Şen, B. Influence of Seasonal Snow Conditions on Winter Wheat Irrigation Requirement in a Semi-Arid Region. *Adnan Menderes Üniversitesi Ziraat Fakültesi Dergisi*, 23(1), 107–114. doi:10.25308/aduziraat.1912335

4. 2026 — Yetik, A. K., Candoğan, B. N. Assessment of Agricultural Water Footprint Dynamics of Niğde Province Using Innovative Trend Analysis. *ÇOMÜ Ziraat Fakültesi Dergisi*, 14(1), 91–103. doi:10.33202/comuagri.1886479
5. 2026 — Štyriaková, D., Winnie, K., Šuba, J., Prekopová, M., Štyriaková, I., Yetik, A. K., Nelson, W. W., Zacharoudi, S. Impact of microfertilizer[®] plant Biostimulant on Maize Growth and Yield under Different Climatic Conditions in Kenya. *Eurasian Journal of Agricultural Research*, 10(1), 1–15.
6. 2026 — Štyriaková, D., Hajnal-Jafari, T., Žunić, V., Šuba, J., Prekopová, M., Yetik, A. K., Štyriaková, I. Influence of biostimulant applications on vegetative growth and yield of strawberry under full and reduced fertilization. *DYSONA – Applied Science*, (7), 41–49. doi:10.30493/DAS.2025.531444
7. 2025 — Yetik, A. K., Candoğan, B. N. Projected Changes in Drought Severity and Spatial Patterns across Türkiye under RCP4.5 and RCP8.5 Scenarios. *Journal of Biological and Environmental Sciences*, (19), 35–47. doi:10.5281/zenodo.17568859
8. 2025 — Yetik, A. K. Machine learning-based estimation of daily ETo under limited meteorological data. *Journal of Agricultural Faculty of Gaziosmanpaşa University*, 42(3), 250–261. doi:10.55507/gopzfd.1709027
9. 2025 — Secrafi, M., Kızıldeniz Gürbüz, T., Yetik, A. K., Boughalleb, F., Abdellaoui, R. Modeling and predicting biomass yield of *Stipagrostis ciliata* (Desf.), a climate-resilient forage, under future climate conditions in Tunisia using the LINTUL-MULTICROP model. *Euro-Mediterranean Journal for Environmental Integration*, (10), 5097–5113. doi:10.1007/s41207-025-00902-2
10. 2025 — Yetik, A. K., Candoğan, B. N., Sincik, M., Demir, A. O., Büyükcangaz, H. Assessing Water Stress Dynamics in Kenaf (*Hibiscus cannabinus* L.) Through the Crop Water Stress Index and Physiological Parameters. *Journal of Agronomy and Crop Science*, 211. doi:10.1111/jac.70112
11. 2025 — Candoğan, B. N., Yetik, A. K., Sincik, M., Demir, A. O., Büyükcangaz, H. Water Productivity and Yield Response of Deficit-Irrigated Kenaf (*Hibiscus cannabinus* L.) under Subhumid Climate Conditions. *Journal of Irrigation and Drainage Engineering*, 151(3). doi:10.1061/JIDEDH.IRENG-10329
12. 2025 — Yetik, A. K., Şen, B. Optimizing Lavender (*Lavandula angustifolia* Mill.) Yield and Water Productivity with Deficit Irrigation in Semi-Arid Climates. *Agronomy*, 15(5). doi:10.3390/agronomy15051009
13. 2024 — Yetik, A. K., Arslan, B., Şen, B. Trends and variability in precipitation across Turkey: a multimethod statistical analysis. *Theoretical and Applied Climatology*, 155, 473–488. doi:10.1007/s00704-023-04645-4
14. 2023 — Yetik, A. K., Şen, B. Evaluation of the Impacts of Climate Change on Irrigation Requirements of Maize by CROPWAT Model. *Gesunde Pflanzen*. doi:10.1007/s10343-022-00751-x
15. 2023 — Yetik, A. K., Candoğan, B. N. Chlorophyll Response to Water Stress and the Potential of Using Crop Water Stress Index in Sugar Beet Farming. *Sugar Tech*, 25(1), 57–68. doi:10.1007/s12355-022-01184-6

16. 2022 — Candoğan, B. N., Yetik, A. K., Sincik, M., Demir, A. O., Büyükcangaz, H. Determination of Diurnal Leaf Gas Exchange for Drip-Irrigated Kenaf Plant in Sub-Humid Climatic Conditions. *Polish Journal of Environmental Studies*, 31(5), 4557–4566. doi:10.15244/pjoes/150014
17. 2022 — Yetik, A. K., Candoğan, B. N. Optimisation of irrigation strategy in sugar beet farming based on yield, quality and water productivity. *Plant, Soil and Environment*, 68(8), 358–365. doi:10.17221/234/2022-PSE

National refereed journal articles (10)

1. 2024 — Yetik, A. K., Ünal, Z. Analitik Hiyerarşi Süreci (AHP) ile Sulama Sistemi Seçimi. *[Irrigation system selection with the Analytic Hierarchy Process (AHP) — translated] Osmaniye Korkut Ata Üniversitesi Fen Bilimleri Enstitüsü Dergisi*, 7(5), 2190–2204. doi:10.47495/okufbed.1440315
2. 2024 — Yetik, A. K., Candoğan, B. N. Climate Change Impacts on Precipitation Dynamics in the Southern Marmara Region of Turkey. *Bursa Uludağ Üniversitesi Ziraat Fakültesi Dergisi*, 38(1), 123–141. doi:10.20479/bursauludagziraat.1442146
3. 2024 — Sabitova, A., Suleimanova, G., Kızıldeniz Gürbüz, T., Yetik, A. K. Modeling Climate Change Scenarios for Spring Barley in Southeast of Almaty in Kazakhstan Using the LINTUL Approach. *Black Sea Journal of Engineering and Science*, 7(3), 465–472. doi:10.34248/bsengineering.1445076
4. 2023 — Elmas, İ., Yetik, A. K., Kuşçu, H. Farklı Sulama Aralıkları ve Düzeylerinin Salçalık Domatesin Verim ve Kalite Bileşenlerine Etkileri ve Ekonomik Analizi. *[Effects of different irrigation intervals and levels on yield and quality components of processing tomato, and an economic analysis — translated] Bilecik Şeyh Edebali Üniversitesi Fen Bilimleri Dergisi*, 10(1), 129–139. doi:10.35193/bseufbd.1188145
5. 2023 — Yetik, A. K., Kızıldeniz Gürbüz, T., Ünal, Z. Simulating the Yield Responses of Sugar Beet to Different Climate Change Scenarios by LINTUL-MULTICROP Model. *Black Sea Journal of Engineering and Science*, 6(2), 53–59. doi:10.34248/bsengineering.1181263
6. 2023 — Yetik, A. K., Dönmez, S., Akkaya Aslan, Ş. T. Parsel Sınır Komşuluğu İlişkilerinin Bitki Deseni Oluşumuna Etkisinin Farklı Yöntemlerle Belirlenmesi: Mustafakemalpaşa Örneği. *[Determining the effect of parcel boundary-neighbourhood relations on crop pattern formation with different methods: the case of Mustafakemalpaşa — translated] Iğdır Üniversitesi Fen Bilimleri Enstitüsü Dergisi*, 13(1), 170–178. doi:10.21597/jist.1120642
7. 2021 — Saygılı, Y. S., Yetik, A. K., Baş, F., Şen, B. Investigation of Solar Powered Drying System Potential in Niğde Province. *Turkish Journal of Agriculture – Food Science and Technology*, 9, 2409–2417. doi:10.24925/turjaf.v9isp.2409-2417.4812
8. 2021 — Aşık, M., Yetik, A. K., Candoğan, B. N., Kuşçu, H. Determining the yield responses of maize plant under different irrigation scenarios with AquaCrop model. *International Journal of Agriculture, Environment and Food Sciences*, (3), 260–270. doi:10.31015/jaefs.2021.3.2
9. 2021 — Yetik, A. K., Aşık, M. Toprak Nem İçeriğinin İzlenmesi ve Tayininde Kullanılan Yöntemler. *[Methods used for monitoring and determining soil moisture content — translated] Bilecik Şeyh Edebali Üniversitesi Fen Bilimleri Dergisi*, 8(1), 484–496. doi:10.35193/bseufbd.842370

10. 2020 — Yetik, A. K., Şen, B. Importance and Techniques of Water Harvesting Systems. *Turkish Journal of Agriculture – Food Science and Technology*, 8, 46–53. doi:10.24925/turjaf.v8isp1.46-53.3952

Book chapters (5)

1. 2024 — Jobe, A. A., Yetik, A. K., Ünal, Z. Robot Farming: Transforming Agriculture with Advanced Techniques for Efficient Cultivation, Irrigation and Crop Monitoring. In: *New Trends in Computer Sciences* (ed. A. Alaybeyoğlu). All Sciences. ISBN 978-625-6530-87-4. English.
2. 2022 — Seçme, H., Yetik, A. K. Arazi Toplulaştırmasının Önemi ve Sağladığı Faydalar. [*The importance and benefits of land consolidation – translated*] In: *Ziraat, Orman ve Su Ürünleri Alanında Yeni Trendler* (ed. N. Ersoy). Duvar Yayınları. ISBN 978-625-8261-57-8. Turkish.
3. 2022 — Yetik, A. K., Şen, B. İç Anadolu Bölgesinde İklim Değişikliği ve Olası Etkileri. [*Climate change and its possible impacts in the Central Anatolia Region – translated*] In: *Fen Bilimleri ve Mühendislik Araştırmaları: Faydacı Yaklaşımlar* (ed. İ. Çetiner). SRA Academic Publishing. ISBN 978-625-7148-66-5. Turkish.
4. 2021 — Yetik, A. K., Aşık, M., Seçme, H., Karaer, M., Candoğan, B. N. Tarımda Nesnelerin İnterneti (IoT) ve Uygulamaları. [*The Internet of Things (IoT) and its applications in agriculture – translated*] In: *Sürdürülebilirlik için Gıda, Çevre, Tarımsal Ormancılık ve Tarımda Yeni Araştırmalar* (ed. K. Bellitürk, M. F. Baran, A. Çelik). İksad. ISBN 978-625-7562-28-7. Turkish.
5. 2021 — Seçme, H., Karaer, M., Yetik, A. K. Uzaktan Algılama ve Coğrafi Bilgi Sistemlerinin Tarım Alanında Uygulanma Olanakları. [*Application possibilities of remote sensing and geographic information systems in agriculture – translated*] In: *Değişen Bir Dünyada Sürdürülebilir Tarım Yönetimi* (ed. M. F. Baran, K. Bellitürk, A. Çelik). İksad. ISBN 978-625-7636-45-2. Turkish.

Conference papers (13)

1. 2026 — Yetik, A. K., Şen, B. Quantifying Climate Sensitivity of Apple Orchard Vigor Using Sentinel-2 NDVI and Lagged Meteorological Variables. *International Anatolian Agriculture, Food, Environment and Biology Congress*, p. 57. abstract, oral presentation.
2. 2026 — Yetik, A. K. Remote Sensing-Based Evaluation of Vegetation Condition and Drought-Related Spatial Dynamics in Bursa Province, Türkiye. *International Anatolian Agriculture, Food, Environment and Biology Congress*, pp. 58–65. full paper, oral presentation.
3. 2026 — Yetik, A. K. Application of HBV Model for Long-Term Water Budget Estimation in the Konya Closed Basin: The Gümüşler Dam Outlet. *2nd International Kosovo Academic Research Congress*, pp. 591–601. full paper, oral presentation. doi:10.30546/19023.978-9952-610-31-4.2025.5097
4. 2025 — Haverkort, A., Kızıldeniz Gürbüz, T., Yağız, A. K., Yavuz, C., Yetik, A. K., Aytekin, R. İ., Yerlikaya, B. A. Exploring development, growth, yield and water use of several crops under climate change with LINTUL-MULTICROP, a statistical and mechanical simulation. *IV. International Congress of the Turkish Journal of Agriculture – Food Science and Technology*, Niğde, p. 241. abstract, oral presentation.

5. 2025 — Şen, B., Yetik, A. K., Topal, A. Methods Used in Calculating Water Footprint in Agricultural Production. *IV. International Congress of the Turkish Journal of Agriculture – Food Science and Technology*, Niğde, pp. 741–752. full paper, oral presentation.
6. 2025 — Yetik, A. K. Optimizing Deficit Irrigation Strategies for White Cabbage under Semi-Arid Conditions Using the TAGEM-SUET Model. *I. International Digital Agriculture Congress – INDAC 2025*. full paper, oral presentation.
7. 2022 — Yetik, A. K., Seçme, H., Candoğan, B. N. Trend Analysis of Reference Crop Evapotranspiration in Niğde Province. *6th International Anatolian Agriculture, Food, Environment and Biology Congress*, pp. 759–764. full paper, oral presentation.
8. 2022 — Şen, B., Gümüş, B., Bağdatlı, M. C., Yetik, A. K. Investigation of the Effect of Different Irrigation Levels to Be Applied to Strawberry Varieties on Fruit and Plant Development Parameters in Niğde Climate Conditions. *6th International Anatolian Agriculture, Food, Environment and Biology Congress*, p. 1010. abstract, poster.
9. 2022 — Yetik, A. K. Trend Analysis of Reference Crop Evapotranspiration in Ankara Province. *2nd International Conference on Engineering and Applied Natural Sciences*, pp. 1044–1048. full paper, oral presentation.
10. 2021 — Seçme, H., Yetik, A. K., Karaer, M., Kuşçu, H. Türkiye'deki Mısır (Zea mays) Yetiştiriciliğinde Sulamanın Kalite ve Verim Üzerine Etkisi. *[Effect of irrigation on quality and yield in maize (Zea mays) cultivation in Türkiye — translated] Adıyaman International Congress of Science and Applied Sciences (Adıyaman Uluslararası Fen ve Uygulamalı Bilimler Kongresi)*, pp. 36–43. full paper, oral presentation.
11. 2021 — Saygılı, Y. S., Yetik, A. K., Baş, F., Şen, B. Investigation of Solar Powered Drying System Potential in Niğde Province. *2nd International Congress of the Turkish Journal of Agriculture – Food Science and Technology*, p. 12. abstract, oral presentation.
12. 2020 — Yetik, A. K., Candoğan, B. N. The Effects of Deficit Irrigation on Net Photosynthesis Rate, Stomatal Conductance, Intracellular CO₂ Concentration and Transpiration Rate in Sugar Beet. *II. International Agricultural, Biological and Life Science Conference*, pp. 288–296. full paper, oral presentation.
13. 2020 — Yetik, A. K., Şen, B. Su Hasadı Sistemlerinin Önemi ve Teknikleri. *[Importance and techniques of water harvesting systems — translated] 5th International Anatolian Agriculture, Food, Environment and Biology Congress*, pp. 347–348. abstract, poster.

PROJECTS

- **Estimating the Crop Water Stress Index of white cabbage grown under semi-arid conditions using machine learning models** (*translated*)
Original title: Yarı-kurak iklim koşullarında yetiştirilen beyaz lahanada makine öğrenmesi modelleri kullanılarak bitki su stres indeksinin tahmin edilmesi
TÜBİTAK · Principal Investigator · 12 Dec 2025 – ongoing · National
Team: Burak Şen (Researcher)

- **Effects of climate change (elevated CO2 concentration and high temperature) on growth, water status and yield of two local alfalfa cultivars (Medicago sativa L. cv. Bilensoy 80 and Nimet) (translated)**
Original title: Yüksek CO2 konsantrasyonu ve yüksek sıcaklık olmak üzere iklim değişikliğinin etkilerinin iki yerli yonca (Medicago sativa L. cv. Bilensoy 80 ve Nimet) çeşidinde büyüme, su durumu ve verim üzerindeki etkileri
Scientific research project supported by higher education institutions · Researcher · 20 May 2021 – 9 Jan 2025 · National
Team: Tefide Kızıldeniz Gürbüz (PI)
- **Determining the effect of deficit irrigation on yield, yield components and physiological traits of kenaf (Hibiscus cannabinus L.) based on soil and plant monitoring (translated)**
Original title: Kısıntılı sulamanın kenaf bitkisinde (Hibiscus cannabinus L.) verim, verim bileşenleri ve fizyolojik özellikler üzerine etkisinin, toprağın ve bitkinin izlenmesine dayalı olarak belirlenmesi
TÜBİTAK · Scholarship holder · 15 Sept 2018 – 3 Oct 2021 · National
Team: Burak Nazmi Candoğan (PI), Mehmet Sincik, Hakan Büyükcangaz, Ali Osman Demir

SUPERVISED THESES

- MSc, Başak Kılıçaslan (2026, ongoing): Niğde koşullarında fakülte çatılarından hasat edilen yağmur suyunun tarla bitkileri sulamasında kullanım potansiyelinin belirlenmesi. [*Assessing the potential use of rainwater harvested from faculty rooftops for irrigating field crops under Niğde conditions – translated*] Interdisciplinary Digital Agriculture Program, Graduate School of Natural and Applied Sciences, Niğde Ömer Halisdemir University.

TEACHING

Course	Level	Language	h/week	Term	Years
Technical Drawing I	BSc	English	4	Fall	2025–26, 2026–27
Technical Drawing II	BSc	English	4	Spring	2024–25, 2025–26
Irrigation and Drainage	BSc	English	3	Spring	2024–25, 2025–26
Kinetics and Bioreactor Design	BSc	English	4	Fall	2025–26
Design of Water Management Systems	BSc	English	3	Spring	2025–26

Course	Level	Language	h/week	Term	Years
Dijital Tarımda Karar Destek Sistemleri <i>Decision Support Systems in Digital Agriculture</i>	MSc	Turkish	3	Fall	2026–27

CONTACT

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ResearchGate	https://www.researchgate.net/profile/Ali-Kaan-Yetik
LinkedIn	https://www.linkedin.com/in/alikaanyetik/
University profile	https://akapedia.ohu.edu.tr/cv/alikaanyetik

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