Journal of Landscape Research and Practices (JOLARP), 7(1):21-26
Peyzaj Araştırmaları ve Uygulamaları Dergisi
E-ISSN: *2687-2366*

Research article

DOI: 10.56629/paud.1694327

OBSERVATIONAL RESEARCH BASED ON SOCIAL MESSAGING DATA TOWARDS QUALITY CLASSIFICATION IN LANDSCAPE PLANTS

Yusuf Evren Doğan[1*], Erhan Vecdi Küçükerbaş[2]

[1]Yalova University, Yalova Vocational School, Department of Park and Horticulture
[2]Ege University, Faculty of Agriculture, Department of Landscape Architecture
[*]Corresponding author

Abstract

This study is based on the analysis of 2,077 messages shared within the first four months of 2025 in a large WhatsApp group comprising landscape plant producers and marketers across Türkiye. The participants include stakeholders from various regions, including growers, contractors, and sellers. The aim of this study is to observe how producers present plant quality in digital communication platforms and to extract a data structure that can inform the QPlantScore quality classification system. Plant names, size, pot volume, and quality-related expressions in the messages were coded through content analysis. Repetitive listings and regional information were also examined for representational distribution. The most frequently mentioned species included Leylandii, Cypress, Laurel, and Thuja. Quality descriptors such as "dense form", "first-class", and "premium" appeared frequently, indicating a lack of standard terminology. The findings highlight the need for a standardized classification system and demonstrate the potential of social messaging data for market-oriented horticultural research.

Anahtar sözcükler / Keywords: Landscape plants, Quality classification, QPlantScore, Outdoor Ornamental Plants, Plant Material

PEYZAJ BİTKİLERİNDE KALİTE SINIFLANDIRMASINA YÖNELİK SOSYAL MESAJLAŞMA VERİLERİNE DAYALI GÖZLEMSEL BİR ARAŞTIRMA

Özet

Bu çalışma, Türkiye'deki peyzaj bitkisi üreticileri ve pazarlamacılarının yer aldığı büyük bir WhatsApp grubunda 2025 yılının ilk dört ayında paylaşılan 2077 mesajın analizine dayanmaktadır. Gruptaki katılımcılar Türkiye'nin farklı bölgelerinden üretici, uygulamacı ve satıcılardan oluşmaktadır. Çalışmada amaç, üreticilerin dijital iletişim ortamlarında kaliteyi nasıl sunduğunu gözlemlemek ve bu gözlemlerden elde edilen bulgularla QPlantScore adlı kalite sınıflandırma sistemine altlık oluşturabilecek bir veri yapısı ortaya koymaktır. Mesajlarda yer alan bitki adları, boyut, saksı hacmi ve kaliteye ilişkin ifadeler içerik analizi ile kodlanmış; ayrıca tekrar eden ilanlar ve lokasyon bilgileri üzerinden temsiliyet değerlendirmesi yapılmıştır. En çok paylaşılan türler arasında Leylandi, Selvi, Taflan ve Mazı öne çıkmaktadır. Kalite tanımlarında ise sık formlu, A kalite, 1. sınıf gibi subjektif ifadelerin yoğunluğu dikkat çekicidir. Bulgular, üretici iletişiminde kalite sınıflandırmasının yaygın olmadığını ve standardizasyona duyulan ihtiyacın yüksek olduğunu göstermektedir. Çalışma, sosyal medya verilerinin sektörel analizlerde kullanılabilirliğini göstermesi açısından da önem taşımaktadır.

Keywords / Anahtar sözcükler*: Peyzaj Bitkileri, Kalite Sınıflandırması, QPlantScore, Dışmekan Süs Bitkileri, Bitki Materyali*

Received:12.05.2025 ***Acceptance:*** 26.06.2025 ***Online publication:*** 30.06.2025

Yusuf Evren Doğan, yedogan@yalova.edu.tr, ORCID: 0000-0001-8039-1862
Erhan Vecdi Küçükerbaş, erhan.vecdi.kucukerbas@ege.edu.tr, ORCID:0000-0003-3397-9633

Research article
DOI: 10.56629/paud.1694327

1. Introduction

The landscape plant sector plays a fundamental role in various areas ranging from urban aesthetics and climate regulation to biodiversity enhancement and environmental sustainability. One of the most critical components of this sector is outdoor ornamental plants, which are preferred in both public and private projects depending on their quality characteristics. However, the definition of quality in these plants varies among producers, with criteria such as height, form, health status, and cultivation method expressed in diverse and inconsistent ways.

While several guidelines and classification frameworks adopted by producer associations exist in European countries (BdB, 2022), there is no widely implemented or standardized system in Turkey. This lack of a national quality standard contributes to ambiguity in quality perception in the domestic market and undermines the competitiveness of Turkish products in international trade (TAGEM, 2019).

In many European countries, nursery stock producers are organized under national associations that define technical and quality standards, ensuring consistency in plant production and trade. For example, the Bund deutscher Baumschulen (BdB) in Germany has established comprehensive guidelines that cover parameters such as plant height, root system, age, form, and health status. These standards are widely accepted by German producers and serve as a reference in both domestic and export markets (BdB, 2022). Similarly, the European Nurserystock Association (ENA) published the European Technical and Quality Standards for Nurserystock in 2010, aiming to harmonize quality terminology and classification across Europe. The ENA guidelines provide a shared vocabulary and clear grading criteria that facilitate transparent communication between producers and buyers (ENA, 2010).

In contrast, Turkey currently lacks a nationally adopted or legally binding quality classification system for ornamental plants. Although some producers may informally reference European practices, the absence of an institutional standard leads to inconsistencies and weakens export potential. Therefore, the development of the QPlantScore system draws from these established European frameworks while adapting them to the local context. By aligning its structure with internationally recognized standards and terminology, QPlantScore aims to support transparency, comparability, and traceability in landscape plant trade

In response to this gap, the QPlantScore model has been developed to classify landscape plants based on objective, quantifiable, and comparable criteria. QPlantScore proposes a system in which plants are graded from A to E according to their height, crown diameter, form, density, health status, age, and root or pot characteristics. However, the applicability of such a structure depends on a deeper understanding of current quality presentation practices in the sector (QPlantScore, 2025).

In this context, social messaging platforms—particularly WhatsApp—have become digital marketplaces where producers in Turkey communicate directly, promote their products, and provide pricing. In recent years, social media data have increasingly been used as information sources in agriculture and horticulture, offering a strong foundation for observing producer behavior and market trends (Kara, 2018).

Despite this growing relevance, there has been no concrete research in Turkey that employs social data analysis to observe plant quality classification practices. The present study was thus designed to address this gap.

This research is based on a content analysis of 2,077 messages sent during the first four months of 2025 within a large social messaging group composed of 1,024 producers

Research article
DOI: 10.56629/paud.1694327

from various regions across Turkey. The messages were examined to identify plant names, size and pot volume details, quality expressions, location data, and repeated listings. These insights were then used to reveal existing practices in quality presentation and to propose improvements contributing to the QPlantScore classification model.

2. Material and Methods

2.1. Material

The material for this study consists of a digital dataset derived from 2,077 messages shared between January 1 and April 30, 2025, in a large WhatsApp group composed of 1,024 verified users engaged in landscape plant production from various cities in Turkey. The participants include small-, medium-, and large-scale producers, as well as practitioners and product marketers. The group is not closed to producers only; rather, it functions as an open communication platform aimed at facilitating direct sales and procurement. For this reason, the content of the group can be considered a representative digital reflection of Turkey's landscape plant market.

The dataset comprises written content related to plant production, including plant names, plant sizes, pot volumes, quality descriptors, and self-reported location information provided by users. All data were anonymized and processed without any personally identifiable user information. No images were included in this study; only textual content was analyzed.

2.2. Methods

A qualitative data analysis and descriptive content analysis approach was adopted in this study. WhatsApp chat data were first transferred into Excel format and subsequently coded under six categories: "sender", "plant name", "plant height", "pot volume", "quality-related descriptions", and "location". The coding process was conducted manually by the researcher. When possible, plant names in Turkish were matched with their corresponding Latin genus names. Each message was also analyzed to determine whether it included a plant name, whether species-level detail was provided, and whether duplicate listings for the same plant were made by the same user.

Messages containing location information were filtered, and a city-based frequency analysis was conducted. The frequency of plant names mentioned in the messages was also calculated to provide preliminary insights into production and marketing intensity in the sector. The data obtained were then linked to criteria that could serve as a foundation for the QPlantScore system in presenting plant quality.

As no direct survey or interview methods requiring ethical approval were employed, no ethics committee application was necessary. All data were obtained from a publicly accessible digital group of producers, and only publicly shared content was analyzed.

3. Findings

The dataset analyzed in this study consists of 2,077 textual messages shared between January 1 and April 30, 2025, within a publicly accessible WhatsApp group comprising 1,024 producers, sellers, and practitioners operating across Türkiye. This group functions as an open platform for direct plant sales and producer–consumer communication. All messages included in the study were qualitatively coded using content analysis and systematically classified based on plant name, plant size, pot volume, quality-related descriptors, location information, and repeated listings.

3.1. General Distribution

Out of the total 2,077 messages, 574 (27.6%) contained a direct mention of a plant name. The number of messages specifying plant size was 153 (7.4%), while 242 messages (11.6%) included pot volume information. Only 23 messages (1.1%) contained any form of quality-related expression. Messages providing location data were limited to 97 (4.6%). These

Research article
DOI: 10.56629/paud.1694327

findings reveal that the majority of producers tend to share posts by referencing only the plant name, and that standardized, criterion-based product descriptions are considerably limited.

3.2. Distribution by Species

Among the plant species mentioned in the shared posts, the most frequently encountered ones were × Cupressocyparis leylandii (Leyland cypress), Viburnum tinus (Laurustinus), Prunus laurocerasus (Cherry laurel), Thuja occidentalis (Arborvitae), and Cupressus sempervirens (Italian cypress). These five species account for approximately 40% of all messages containing plant names and represent plant types with a high production volume in the Turkish landscape sector. Functionally, these species are dense, fast-growing, evergreen plants commonly used as hedge elements.

3.3. Visibility of Quality Descriptions

Among the only 23 messages containing quality-related expressions, producers frequently used subjective terms such as "A quality", "first class", "compact form", "single trunk", "dense", and "well-shaped". The most frequently mentioned species in these messages included Viburnum tinus (Laurustinus / Kartopu, 3 messages), Nerium oleander (Oleander / Zakkum, 2), Laurus nobilis (Bay Laurel / Defne, 2), Photinia × fraseri (Red Tip Photinia / Alev çalısı, 2), Grevillea robusta (Silky Oak / Grevilya, 2), and Euonymus japonicus (Japanese Euonymus / Taflan, 2). This finding suggests that the perception of visual quality is emphasized more strongly for species with decorative foliage.

3.4. Container Volume and Pot Size

In species cultivated in dwarf forms—such as Lavender (Lavandula), Lantana (Lantana camara), and Japanese Euonymus (Euonymus japonicus)—producers were more likely to specify pot volume. Although the overall rate of messages mentioning pot volume was 11.6%, this figure increased to around 30% when these specific species were examined. Similarly, in hedge plants such as Leyland cypress (× Cupressocyparis leylandii), Arborvitae (Thuja occidentalis), and Italian cypress (Cupressus sempervirens), it was more common for producers to provide size measurements, often indicating heights such as 30-40 cm, 40-60 cm, 80-100cm, 150-200 cm or minimum 175 cm etc. to emphasize transplant maturity.

3.5. Locations

Among the 97 messages in which location information was explicitly stated, the most frequently mentioned cities were Yalova (25 messages), Bursa (25), Sakarya (16), İzmir (8), Istanbul (7), and Mersin (6). This distribution indicates that outdoor ornamental plant production in Türkiye is geographically concentrated in the Marmara and Aegean regions, and that the participants of the WhatsApp group reflect these production centers. The group content analyzed in this study provides a representative snapshot of the geographical structure of Türkiye’s ornamental plant production sector.

3.6. Repeated Posts

An examination of the dataset revealed that the same users repeatedly posted listings for the same species on different days. These repetitions are likely due to factors such as unsold inventory, low demand, or strategies to increase visibility. The species most frequently associated with repeated posts were typically those with high market competition, such as Leyland cypress (× *Cupressocyparis leylandii*), Arborvitae (*Thuja occidentalis*), and Japanese Euonymus (*Euonymus japonicus*).

4. Conclusion and Discussion

This study presents a content-based evaluation of current quality presentation practices by analyzing the communication behaviors of landscape plant producers in Türkiye through social messaging platforms, particularly WhatsApp. The main findings indicate that quality-related expressions are rarely included in plant sales posts, and that

Research article
DOI: 10.56629/paud.1694327

technical details such as plant size and pot volume are also used to a limited extent. The fact that only 1.1% of the 2,077 analyzed messages contained explicit references to plant quality suggests that systematic classification is not widely practiced within the sector.

The quality terms that are used tend to be highly subjective, relying on qualitative expressions such as “A quality,” “first class,” or “compact form.” This lack of standardization complicates objective quality assessment, limiting comparability in the domestic market and diminishing competitiveness in international trade. In contrast, many European countries have addressed these issues through standardized frameworks developed by producer associations (European Nurserystock Association, 2010).

Inconsistencies in plant nomenclature also emerged as a significant issue. The interchangeable use of multiple Turkish names for the same species, along with frequent errors or omissions in Latin names, presents a barrier to accurate communication across the supply chain. These inconsistencies not only confuse buyers but can also lead to mismatches between project designs and plant deliveries, resulting in inefficiencies and losses.

These findings point to an urgent need for a shared language of plant quality and taxonomy among producers, sellers, and designers. Especially for landscape architects, incorrect species identification during the procurement process can undermine design intent and site performance. Addressing this requires sector-wide efforts in botanical literacy, species identification, and the adoption of standardized quality descriptors.

The analysis also revealed a strong tendency among producers to rely on a narrow set of familiar species, despite Türkiye’s rich native and exotic plant diversity. This limited palette may contribute to monotonous urban landscapes and increase susceptibility to pests and diseases. Promoting species diversity in design and production is essential for long-term ecological resilience and aesthetic quality.

Another noteworthy pattern was the repeated posting of identical listings by the same users. While this likely reflects actual marketing behavior—such as attempts to sell unsold inventory or maintain visibility—it can bias data interpretation, particularly in frequency-based analyses. The overrepresentation of certain species or descriptors should be considered when generalizing findings.

One of the main aims of this study is to inform the development of the QPlantScore quality classification model. By analyzing how producers currently communicate plant features, this research contributes concrete and measurable input to the design of objective criteria. The frequent use of vague descriptors highlights the need for structured terminology and reference tools. Inconsistent and repetitive messaging patterns point to the value of user-friendly reporting formats—such as digital checklists or AI-supported classifiers—that align with actual producer behavior and promote adoption in practice.

This study also fills a gap in the landscape plant and horticultural literature by demonstrating how informal digital communication reflects real-world practices in the absence of regulation. It further shows that social messaging data can be a valuable resource for understanding sectoral dynamics and identifying areas for improvement in standardization and communication.

From a practical standpoint, the study identifies structural challenges—such as subjective terminology, inconsistent naming, and limited species use—that affect all parts of the landscape supply chain. Addressing these issues through shared terminology, training programs, and digital tools will improve procurement efficiency and support overall sector development.

Despite the richness of the dataset and the number of participants, the study has certain

Research article
DOI: 10.56629/paud.1694327

limitations regarding representativeness. The data were collected from a single WhatsApp group, and while the group includes over one thousand users from various cities, most messages originated from the Marmara and Aegean regions. Therefore, the findings may not fully reflect practices in other regions such as Central Anatolia, the Mediterranean, or Eastern Türkiye. Caution should be exercised in generalizing the results, and future research should incorporate additional networks to compare regional patterns and gain broader insights.

In conclusion, this study offers a timely and original contribution to both research and practice in the landscape plant sector. The insights derived from social messaging platforms provide a basis for developing a more structured, standardized, and transparent system of plant quality classification in Türkiye. The refinement and adoption of the QPlantScore system, supported by real-world communication data, have the potential to improve market coordination, enhance international competitiveness, and elevate quality assurance practices across the sector.

Acknowledgements

This study was supported by the TÜBİTAK 2219 International Postdoctoral Research Fellowship Program and was conducted in coordination with the QPlantScore project at Osnabrück University of Applied Sciences in Germany. We extend our sincere thanks to all academics and staff members at the affiliated institutions who supported this work. We also gratefully acknowledge the indirect contributions of all producers and practitioners participating in the analyzed WhatsApp group.

References

BdB (2022). Qualitätsstandards für Baumschulpflanzen. Bund deutscher Baumschulen.

ENA European Nurserystock Association. (2010). European Technical & Quality Standards for Nurserystock. European Nurserystock Association

Kara, A. (2018). Yeni İletişim Ortamlarında Pazarlama Faaliyetlerinin Kullanımı ile ilgili İçerik Analizi: Türk Organik Tarım Sektörü Örnek Olayı, *İşletme Ekonomi Ve Yönetim Araştırmaları Dergisi*, 1(1), 17-33.

QPlantScore (2025). Quality classification system for landscape plants. Access date: 01.05.2025, https://www.qplantscore.com

Tarımsal Araştırmalar ve Politikalar Genel Müdürlüğü, TAGEM, (2019). Süs bitkileri sektör politikaları raporu. Access date: 02.05.2025. https://www.tarimorman.gov.tr/TAGEM/Belgeler/yayin/SÜS%20BİTKİLERİsektörpolitika%20.pdf