

Integrated Korean Flora Database: A Versatile Web-based Database for Dissecting Flora Investigations

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Flora investigations have been conducted by many researchers for a long time in Korea. Even though large amount of investigation data has been accumulated, there is no accurate statistics or database because most of data were published in a printed form. We developed a web-based database of flora investigation, named as the Integrated Korean Flora Database (<http://www.floradb.net/>) to understand distribution patterns and habitats of plants in Korea. Till now, 480 published paper, 356 thesis, 76 reports and books, and 8 unpublished papers written in between 1962 and 2017 were collected and their species lists from 280 papers were parsed into the database. From 124,105 records, 3,100 species belonging to 206 families and 965 genera were identified via comparing with two major Korean plant species lists. 55 endangered species, 159 endemic species, and 367 rare species were identified. The most frequently surveyed species were *Commelina communis* in herbaceous and *Rosa multiflora* in woody plants. Microclimate data provided by Korea Meteorological Administration were also integrated and analyzed to assign cold hardness zones for each species. By comparing minimum temperature (<2%) acquired from automated weather stations (AWS) near by plant species, 6a to 10b zones (7b is the most frequent zone) were identified. Integrated Korean Flora Database will be a fundamental platform of Korea flora investigation as well as a new standard for classifying distribution of plants based on accurate microclimate data. Moreover, it can also provide evidences of investigated plant species, such as specimen and/or pictures with connecting to the InfoBoss Cyber Herbarium (<http://herbarium.infoboss.co.kr/>) and Biodiversity Observation Database (BODB; <http://www.biodiversitydb.org/>).

Key words: Flora database, Microclimate, Automatic weather system, Cold hardness zones, Plant distribution

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