ABSTRACT

MUHAMMAD WIHARTO. Vegetation Classification of Gunung Salak Sub Mountain Zone, Bogor, West Java. Under supervision of CECEP KUSMANA, LILIK BUDI PRASETYO, and TUKIRIN PARTOMIHARDJO.

The research objectives were classifying sub mountain zone of Salak Mountain’s vegetation structurally, physiognomically, floristically; studying the relationship between floristic vegetation types and abiotic factors; and the alteration of structure and species composition in each vegetation type along environmental gradient. Sampling was done with systematic sampling with random start. Vegetation alliances were determined by ordination with factor analysis, and vegetation associations were determined with cluster analysis. Vegetation types at physiognomic and structural level were determined based on UNESCO and NVCS vegetation types. U-Mann Whitney statistic was employed to know whether there were abiotic factors differentiations between alliances and between vegetation structures. Chi-square test was used to know the relationship between vegetation associations and abiotic factors, also the preference of dominant tree species toward abiotic factors. There are three vegetation types founded at alliance levels, which are Schima wallichii-Pandanus punctatus/Cinchona officinalis forest alliance (alliance 1); Gigantochloa apus-Mallotus blumeanus/ C. officinalis forest alliance (alliance 2); and Pinus merkusii-Athyrium dilatatum/Dicranopteris dichotoma forest alliance (alliance 3). Alliance 1 is a broad leaf mix forest dominated by Schima wallichii, alliance 2 is a bamboo forest dominated by G. apus, and alliance 3 is a planted forest dominated by P. merkusii. The abiotic factors that consistently differentiate alliance 1 with the other alliances are N total, dust content of the soil, and slope. P soil’s content for alliance 2, while C organic soil’s content and cation exchange capacity of the soil for alliance 3. Successively, there are 5, 6, and 7 vegetation associations at alliance 1, 2, and 3. Stand structure of alliance 1 and 3 forming J reverse curve. The mean value of dominant tree species diversity and evenness index increases from alliance 2 to 3, and to 1, while the mean value of dominant tree species richness index increases from alliance 3 to 2, and to 1. Each dominant tree species has clumped distribution pattern and uniquely preference to abiotic factor.

Key words: Alliance, Cluster analysis, Ordination, Vegetation association, Vegetation classification.