

Flora and life form spectrum of Hallasan Natural Reserve, Jeju Island

Chan-Soo Kim^{1*}, and Jung-Goon Koh²

¹ Warm-Temperate Forest Research Center, Korea Forest Research Institute, Seouipo 697-050, Korea

² Research Institute for Mt. Halla, Jeju 690-200, Korea

The floristic regions and provinces of Jeju Island are included in East Asiatic floristic region of Holarctic floristic kingdom. The flora in Jeju consists of plants migrated from continent, which distribute in China, Jeju through Japan as a belt, originated from tropics and subtropics and evolved in Jeju, Taiwan and Japan. This study was performed to get more knowledge on the vegetation, distributions of distributional limit species and their life form spectrum, in this region. The vascular plants include 83 species 35 genera 12 families of Pteridophytes, 5 varieties 5 species 3 families of gymnosperm, 100 taxa in 2 varieties 98 species 58 genera 8 families of monocotyledon and 362 taxa in 3 cultivars 10 varieties 349 species 186 genera 65 families of dicotyledon in Hallasan Natural Reserve Region. The total of vascular plants is 550 taxa in 3 cultivars 11 varieties 536 species 284 genera 88 families. Dominantly dormancy form of life form is Hemicryptophytes with 190 species (34.5%) and Geophytes with 122 species (22.2%). According to the life form spectrum, Hemicryptophytes dominated high portions which suggests Hallasan Natural Reserve Region has Hemicryptophytic climate and similar to middle parts in Korean peninsular. The differences, however, were noticed by that it has more Chamaephytes and less Therophytes than Korean peninsular and partially shows the characteristics of arctic or subalpine climate.

Agro-meteorological disaster features occurred in horticultural crops during 2001-2006 in Korea

Hyeong-Ho Seo^{*1}, Jung-Bae Kim¹, and Seung-Heui Kim¹

¹ National Horticultural Research Institute, Rural Development Administration, Suwon 440-706. South Korea.

* Corresponding Author Email: appleseo@rda.go.kr

The occurrence of agro-meteorological disasters were increased not only a huge disaster as typhoon 'RUSA' in 2002, but also small scale agro-meteorological disaster regionally as late frost risk, and also its occurrence frequency and damage were trend to be increased gradually. A fruit tree, cultivated in the same places for 15~30 years, economic life, is the most suffered to damage by various agro-meteorological disasters in among horticultural crops. Specially, the recent freezing damage is giving the damage which is most serious in the fruit tree. We have been searched a cause until now from nutrient condition of fruit tree, soil physical condition and lower minimum air temperature condition, but an abnormal warm winter is discussed with a leading cause recently. Regardless of the recent observed warmer winter in Korea, more freeze damages and associated economic losses are reported in fruit industry than ever before. The cause of freezing damage has the closer relationship with the dormancy depth and internal dormancy breaking which show the degree of cold hardiness. The summer season heavy rainfall by typhoon 'MAEMI' in 2003, was flooded many crops and the effect which was enormous in growth of the crops. Case of the grape vine, when became the flooding, the fruit cracking was occurred, growth of the root became poor and the various physiology disorders were appeared. Salty wind damage which is a kind of salt stress, made by scattering of the sea water due to the powerful typhoon, gave enormous damages to fruit tree in coastal area. Also, The hail was increased occurrence frequency and destruction of greenhouse due to the winter heavy snow was increased. The research on the cause of agro-meteorological disaster does to do in order to avoid a agro-meteorological disaster and also the policy measure as the crop insurance covering must develop continuously.