Invasion of acacia decurrens willd. after eruption of mount merapi, Indonesia

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Abstrak

Eruption of Mount Merapi in 2010 caused a dense cover of Acacia decurrens Willd., which is an Invasive Alien Plant Species (IAPS). The dense cover happened in all areas of Mount Merapi National Park (MMNP) in Java, Indonesia. This study was aimed to describe the relationship between major natural disturbance from volcanic eruption in triggering the invasion of A.decurrens in Mount Merapi National Park. Vegetation data were collected using line transect in two different sites. The first site was Cangkringan which was affected by pyroclastic flow and the second site was Selo which was not affected by pyroclastic flow. Distribution patterns and association of A.decurrens with other species in each location was analyzed using ordination analysis of the Non-Metric Multidimensional Scaling (NMDS). Microclimate such as temperature, humidity, light density and soil humidity was recorded in each location. Correlation between species abundance and microclimate data was assessed using Canonical Correspondence Analysis (CCA). The results showed that the population of A. decurrens was more dominant in Cangkringan than in Selo site. Cangkringan site was impacted with pyroclastic flow during Mount Merapi eruption in 2010, while Selo site was not affected. In Cangkringan,Â A.decurrens was distributed in clump, while in Selo the plant was randomly distributed. Ordination analysis using NMDS showed that there was positive association between A.decurrens and herbaceous plant.Â Negative association was observed between A.decurrens and other tree species. CCA analysis showed that temperature and light density was positively correlated with A. decurrens abundance. This study showed that the IAPS invasion in MMNP was correlated with the eruption of Mount Merapi.