

Research of fire effect from the distribution and composition of trees in a small park in Kanazawa City

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In the Great Kanto Earthquake and the Great Hanshin Awaji Earthquake, many victims were found due to earthquake fires. On the other hand, there was a report that the sunburn stoppage by the forest was observed in the green land, and there was a report that it was able to survive by doing evacuation to the green land, and after the Great Kanto Earthquake a lot of research on fire prevention effect by trees has been done. In recent years, it is said that parks and green spaces in urban areas become important when thinking about disaster prevention and disaster in active seismic activity.

Therefore, in this study, we tried three small parks in Kanazawa city, Ishikawa prefecture, and evaluated about prevention of spreading fire by trees in the park during earthquake fires, we propose improvement of safety.

In each park, tree species, tree height, distribution, structures in the park were investigated. Regarding fire prevention properties of plants, we divided them from existing research and estimation into summer season and winter season. For each park, estimates were made about the fire protection power in summer and winter, and the fire protection function of the park was evaluated.

Although it is very simple, we analyzed the safety of the park, assuming spreading of fire from the west for the two patterns of the current situation and the improvement plan for the spread fire simulation.

Fire prevention of each park is thought to exhibit fire resistance to some extent in the summer as for trees, but it is considered highly probable that the fire protection power in winter will be dangerous because many deciduous trees are seen. Also, the number of trees is not so large. It can be said that fire spreading can not be adequately shielded, there is a danger. It is suggested that existing research is dangerous in terms of area.

Therefore, looking at the spreading simulation, it turned out that a certain degree of safety area can be secured in the park at present. However, when considering it as an evacuation site, it is impossible to secure a sufficient safety area and it can be said that it is a "dangerous evacuation place". In the improvement plan, it became possible to increase the safety area by increasing the forest zone around the park and inside.

It can not be said that each park has sufficient safety as an evacuation site, suggesting the possibility of danger especially in the winter. As an improvement plan, increase of green amount and change to evergreen tree may be considered. However, when considering the function as a park, there is a limit to increase the amount of green. Therefore, in order to improve the fire protection function of the park, in addition to improving the planting of the park, it is necessary to go along with urban planning such as incombustibility and flame retardation of surrounding buildings .