

Measurement of inorganic nitrogen leaching and its origin in forest soil by resin core method and tension free method

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Nitrogen loading from forest watershed can affect downstream ecosystem, therefore, to clarify the interaction between nitrogen cycle and nitrogen loading from forested ecosystem is important. In this study, we measured nitrogen leaching in forest soil by both resin core method and tension free lysimeter method and estimate nitrate origin by measuring oxygen isotope in nitrate in order to clarify the interaction between nitrogen cycle and nitrogen leaching process. Resin core method are very useful method, however, there are a few studies that compared nitrogen leaching by method and other method. Moreover, there are a few studies that test of measurement of oxygen isotope in nitrate in resin core methods. This study was conducted at two forested watersheds (Aburahi-S and Surumi-A) in Shiga Prefecture. In Aburahi-S, we measured nitrogen leaching by resin core method and tension free lysimeter method, and nitrogen leaching were measured by only resin core method in Surumi-A.

The amount of nitrogen leaching were averaged $0.61 \pm 0.79 \text{ kgN/ha}$ in resin core method and $0.21 \pm 0.26 \text{ kgN/ha}$ in Aburahi-S from May 2014 to February. Little ammonium was not leaching in both methods. In tension free lysimeter method, there is the possibility that unsaturated flow was difficult to collected, and that may lead underestimated of nitrogen leaching at tension free lysimeter method. The results of nitrogen leaching at Surumi-A watershed and oxygen isotope of nitrated will be explain at presentation on this day.