

Table 7.3: Partitioning and recovery of ^{15}N tracer retained by 15-year-old *Picea abies* in the Fichtelgebirge (Wülfersreuth, NE-Bavaria, Germany) after one growing season. The tracers were applied in March 1991 as a single wet deposition of $4.1 \text{ mmol m}^{-2} \text{ }^{15}\text{NH}_4^+$ or $^{15}\text{NO}_3^-$, respectively. The recovery of the tracers was measured in needles, twigs, stems and roots of *Picea abies* in November 1991 ($n = 5$). The relative contribution of ammonium and nitrate to total mineral nitrogen uptake from the soil was estimated based on the assumption that the tracers were diluted proportionally to the NH_4^+ -to- NO_3^- ratio in water extracts from the soil organic layer (recalculated from Buchmann et al. 1995).

Compartment	Absolute ^{15}N tracer uptake [$\mu\text{mol } ^{15}\text{N m}^{-2}$]		Estimated contribution to total N uptake from the soil based on a NH_4^+ -to- NO_3^- ratio of 8.9 : 1 in soil water extracts [%]	
	$^{15}\text{N-NH}_4^+$	$^{15}\text{N-NO}_3^-$	NH_4^+	NO_3^-
Needles	85	178	43	10
Twigs	46	76	23	4
Stem	8	26	4	2
Roots	20	68	10	4
Total	159	349	80	20
Recovery [%]	3.9	8.5		