

**Table 6.1:** Kinetic parameters for amino acid uptake by mycorrhizal roots collected along a European north-south transect and fine roots collected from non-mycorrhizal seedlings grown in peat in the greenhouse.  $V_{\max}$  and  $K_M$  values ( $\pm$  standard errors of the fitted parameters) were calculated by non-linear curve fitting of the experimental data to the Michaelis-Menten equation [ $v = (V_{\max} \cdot [S]) / (K_M + [S])$ ] in a substrate concentration range of 0.001-0.25 mM (mycorrhizal roots) or 0.001-0.35 mM (non-mycorrhizal roots); n.a. = not available.

Location	Tree species	Glutamine		Glycine		Glutamic acid	
		$V_{\max}$ [ $\mu\text{mol g}_{\text{dw}}^{-1} \text{ h}^{-1}$ ]	$K_{\text{M}}$ [ $\mu\text{M}$ ]	$V_{\max}$ [ $\mu\text{mol g}_{\text{dw}}^{-1} \text{ h}^{-1}$ ]	$K_{\text{M}}$ [ $\mu\text{M}$ ]	$V_{\max}$ [ $\mu\text{mol g}_{\text{dw}}^{-1} \text{ h}^{-1}$ ]	$K_{\text{M}}$ [ $\mu\text{M}$ ]
<i>Lactarius subdulcis</i>							
Gribskov	<i>Fagus sylvatica</i>	13.3 ± 1.0	81 ± 14	18.1 ± 1.5	105 ± 18	n.a.	n.a.
Schacht	<i>Fagus sylvatica</i>	11.6 ± 1.2	77 ± 18	14.5 ± 1.1	102 ± 16	n.a.	n.a.
Hathersage	<i>Fagus sylvatica</i>	12.4 ± 0.9	79 ± 13	22.8 ± 4.2	197 ± 67	10.1 ± 1.3	115 ± 33
<i>Russula ochroleuca</i>							
Gribskov	<i>Fagus sylvatica</i>	5.3 ± 0.6	79 ± 21	4.4 ± 0.9	127 ± 49	n.a.	n.a.
*	<i>Picea abies</i>	n.a.	n.a.	4.8 ± 0.6	135 ± 30	n.a.	n.a.
Hathersage	<i>Fagus sylvatica</i>	1.4 ± 0.1	86 ± 20	3.1 ± 0.3	233 ± 35	n.a.	n.a.
<i>Unidentified morphotypes</i>							
Åheden	<i>Pinus sylvestris</i>	11.6 ± 1.6	130 ± 38	8.3 ± 1.0	50 ± 17	n.a.	n.a.
	<i>Picea abies</i>	7.7 ± 1.4	36 ± 22	10.7 ± 1.8	42 ± 20	n.a.	n.a.
Gribskov*	<i>Picea abies</i>	24.7 ± 3.1	104 ± 29	n.a.	n.a.	n.a.	n.a.
Waldstein	<i>Picea abies</i>	24.0 ± 6.7	111 ± 59	34.1 ± 5.6	113 ± 38	n.a.	n.a.
Schacht	<i>Fagus sylvatica</i>	14.7 ± 1.6	19 ± 8	17.9 ± 1.7	21 ± 7	n.a.	n.a.
<i>non-mycorrhizal roots</i>							
Grenhouse,	<i>Pinus sylvestris</i>	28.1 ± 3.6	136 ± 43	31.1 ± 5.2	89 ± 41	22.3 ± 2.5	86 ± 28
Sheffield	<i>Picea abies</i>	13.4 ± 1.4	33 ± 13	28.1 ± 2.9	107 ± 28	33.3 ± 6.2	107 ± 51
	<i>Betula pubescens</i>	8.8 ± 3.6	219 ± 179	5.3 ± 0.8	83 ± 34	6.0 ± 0.9	92 ± 37
	<i>Fagus sylvatica</i>	4.0 ± 0.7	105 ± 47	3.2 ± 0.5	64 ± 30	3.8 ± 0.7	88 ± 48

\* Mycorrhizas were collected in a Norway spruce forest adjacent to the beech site at Gribskov