

Supplementary Table S1. List of vegetation indices used in correlation analyses with nitrate equations for their calculation from reflectance's in given wavelength (RX is the reflectance) and the references for each index.

<i><b>Vegetation index</b></i>	<i><b>Equation</b></i>
ANMB <sub>650-725</sub>	Area under curve (650 - 725nm) normalised to maximal band depth
NDVI	$NDVI = (R_{780} - R_{670}) / (R_{780} + R_{670})$
NDGI	$NDGI = (R_{780} - R_{550}) / (R_{780} + R_{670})$
NRERI	$NRERI = (R_{780} - R_{720}) / (R_{780} - R_{680})$
RDVI	$RDVI = (R_{800} - R_{670}) / \sqrt{(R_{800} + R_{670})}$
MSR	$MSR = ((R_{780} / R_{670}) - 1) / \sqrt{((R_{780} / R_{670}) + 1)}$
MTVI1	$MTVI1 = 1.2 * [1.2 * (R_{800} - R_{550}) - 2.5 * (R_{670} - R_{550})]$
TCARI	$TCARI = 3 * [(R_{700} - R_{670}) - 0.2 * (R_{700} - R_{550}) * (R_{700} / R_{670})]$
OSAVI	$OSAVI = (1 + 0.16) * (R_{800} - R_{670}) / (R_{800} + R_{670} + 0.16)$
TCARI/OSAVI	$TCARI/OSAVI$
G (Greenness Index)	$G = (R_{554}) / (R_{677})$
TVI	$TVI = 0.5 * [120 * (R_{750} - R_{550}) - 200 * (R_{670} - R_{550})]$
ZM	$ZM = (R_{750}) / (R_{710})$
SRPI	$SRPI = (R_{430}) / (R_{680})$
NPQI	$NPQI = (R_{415} - R_{435}) / (R_{415} + R_{435})$
PRI	$PRI = (R_{531} - R_{570}) / (R_{531} + R_{570})$
NPCI	$NPCI = (R_{680} - R_{430}) / (R_{680} + R_{430})$
SIP1	$SIP1 = (R_{800} - R_{450}) / (R_{800} + R_{650})$
VOG3	$VOG3 = (R_{734} - R_{747}) / (R_{715} + R_{720})$
VOG2	$VOG2 = (R_{734} - R_{747}) / (R_{715} + R_{726})$
GM1	$GM1 = (R_{750}) / (R_{550})$
GM2	$GM2 = (R_{750}) / (R_{550})$
WI	$WI = (R_{900}) / (R_{970})$
WI/NDVI	$WI/NDVI$



rogen status parameters,  
ice in wavelength X nm)

### ***Reference***

---

- Malenovský *et al.* (2006)  
Rouse *et al.* (1974)  
Klem *unpublished*  
Klem *et al.* (2014)  
Rougean & Breon (1995)  
Chen (1996)  
Haboudane *et al.* (2004)  
Haboudane *et al.* (2002)  
Rondeaux *et al.* (1996)  
Haboudane *et al.* (2002)  
Smith *et al.* (1995)  
Broge & Leblanc (2000)  
Zarco-Tejada *et al.* (2001)  
Peñuelas *et al.* (1995)  
Barnes *et al.* (1992)  
Gamon *et al.* (1992)  
Peñuelas *et al.* (1994)  
Peñuelas *et al.* (1995)  
Zarco-Tejada *et al.* (2001)  
Zarco-Tejada *et al.* (2001)  
Gitelson & Merzlyak (1997)  
Gitelson & Merzlyak (1997)  
Peñuelas *et al.* (1997)  
Piñol *et al.* (1998)