BOREAS TE-08 ASPEN BARK CHEMISTRY DATA

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Summary:

The BOREAS TE-08 team collected pigment density data from aspen bark and leaves from four sites within the BOREAS SSA from 24-May-1994 to 16-Jun-1994 (IFC-1), 19-Jul-1994 to 08-Aug-1994 (IFC 2), and 30-Aug-1994 to 19-Sep-1994 (IFC-3). One to nine trees from each site were sampled during the three IFCs. Each tree was sampled in five different locations for bark pigment properties: basal stem section, which was any bark sample taken below one-half the tree height; upper stem section, which was any bark sample taken from the main stem above one-half the tree height; bark taken from branches up to 3 years old; a 2-year old branch segment; and a 1-year old branch segment. Additionally, a limited number of leaves were collected. Bark samples were removed from the stem of the tree, placed in ziplock bags, and transported to UNH, where they were processed and analyzed by a spectrophotometer. In each data file, samples are identified by Site, date, Tree#, and Sample Location (see 1st paragraph above). Pigment density values are normalized to mg/m2. Density values for the following pigments are provided: Chl a, Chl b, Total Chl (Chl a+b), Carotenoids, Chl a to b ratio, and the Total Chl to carotenoids ratio.

A guide document which includes more information about this data set can be found at http://daac.ornl.gov/daacdata/boreas/TE/te08bchm/comp/TE08_Bark_Chem.txt.

ORNL DAAC maintains information on the entire BOREAS Project.

Data Citation

Cite this data set as follows:

Spencer, S., and B. N. Rock. 1999. BOREAS TE-08 Aspen Bark Chemistry Data. Data set. Available on-line [http://www.daac.ornl.gov] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAC/335.

References:

Hixcox, J.D. and G.F. Israelstam. 1979. A method for the extraction of chlorophyll from leaf tissue without maceration. Can. J. Bot. 57:1332-1334.

Lichtenthaler, H.K. 1987. Chlorophylla and carotenoids: pigments of photosynthetic biomembranes. Methods in Enzymology. 148:349-382.

Rock, B.N. et al. High-spectral resolution field and laboratory optical reflectance measurements of red spruce and eastern hemlock needles and branches. 1994. Remote Sensing of Environment. 47:176-189.

Sellers, P. and F. Hall. 1994. Boreal Ecosystem-Atmosphere Study: Experiment Plan. Version 1994-3.0, NASA BOREAS REPORT (EXPLAN 94).

Sellers, P., F. Hall, H. Margolis, B. Kelly, D. Baldocchi, G. den Hartog, J. Cihlar, M.G. Ryan, B. Goodison, P. Crill, K.J. Ranson, D. Lettenmaier, and D.E. Wickland. 1995. Boreal Ecosystem-Atmosphere Study (BOREAS): an overview and early results from the 1994 field year. Bulletin of the American Meteorological Society. V76: 1549-1577.

Sellers, P., F. Hall, and K.F. Huemmrich. 1996. Boreal Ecosystem-Atmosphere Study: 1994 Operations. NASA BOREAS REPORT (OPS DOC 94).

Sellers, P. and F. Hall. 1996. Boreal Ecosystem-Atmosphere Study: Experiment Plan. Version 1996-2.0, NASA BOREAS REPORT (EXPLAN 96).

Sellers, P., F. Hall, and K.F. Huemmrich. 1997. Boreal Ecosystem-Atmosphere Study: 1996 Operations. NASA BOREAS REPORT (OPS DOC 96).

Sellers, P.J., F.G. Hall, R.D. Kelly, A. Black, D. Baldocchi, J. Berry, M. Ryan, K.J. Ranson, P.M. Crill, D.P. Lettenmaier, H. Margolis, J. Cihlar, J. Newcomer, D. Fitzjarrald, P.G. Jarvis, S.T. Gower, D. Halliwell, D. Williams, B. Goodison, D.E. Wickland, and F.E. Guertin. 1997. BOREAS in 1997: Experiment Overview, Scientific Results and Future Directions. Journal of Geophysical Research 102 (D24):28,731-28,770.

Spencer, S.L. 1996. Anatomical, Pigment, and Spectral Evidence of Cortical Photosynthesis in Populus tremuloides from the Canadian Boreal Region.

Master's Thesis, Dept. Nat. Res., University of New Hampshire, 186 pp.

Spencer, S.L. and B.N. Rock. 1996. Assessing aspen bark carbon assimilation in the boreal region. In Proceedings of 22nd Conference on Agricultural and Forest Meteorology with Symposium on Fire and Forest Meteorology. 28 January-2 February, 1996, Atlanta, Georgia. American Meteorological Society, pp:86-89.

Data Format:

For information on Parameter/Variable Names, Variable Description/Definition, Units of Measurement, and Data File Format see this companion file http://daac.ornl.gov/daacdata/boreas/TE/te08bchm/comp/te08bchm.def

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