Daisy Newsletter no. 1

This year Daisy has its 25 years birthday! She has served us faithfully through many projects. However, it may be time to think about how she will manage the next 25 years. We hope you will help us defining this process.

Extra effort at PLEN towards securing the future of the model

So far, Prof. Søren Hansen and Per Abrahamsen have cooperated to keep Daisy up to date and operational in between their other commitments and from project to project. PLEN has now employed Prof. Merete Styczen to support the activities around Daisy and look at possible sources of funding for the general maintenance of the model and activities that can stimulate the use and improvement of the model. In that connection would we like to have a closer dialogue with the Daisy-users.

Closer dialogue with Daisy-users

Access to relevant material – a plea!

In order to keep track of what Daisy is used for, we would be very happy to receive citations of published papers and reports as well as copies of documented new parameterizations of vegetation modules. This way you can help us to provide a better service to future users. We have collected what we could find till the beginning of 2011, so everything from 2011 and onwards will be of interest. Citations will be made available at the Daisy homepage and mentioned in the Newsletter. Please send to: styczen@plen.ku.dk

What would you like us to do?

We would like to know your opinion on how we can maintain better contact with Daisy users and provide better service in the future. You can help us by answering the questions below:
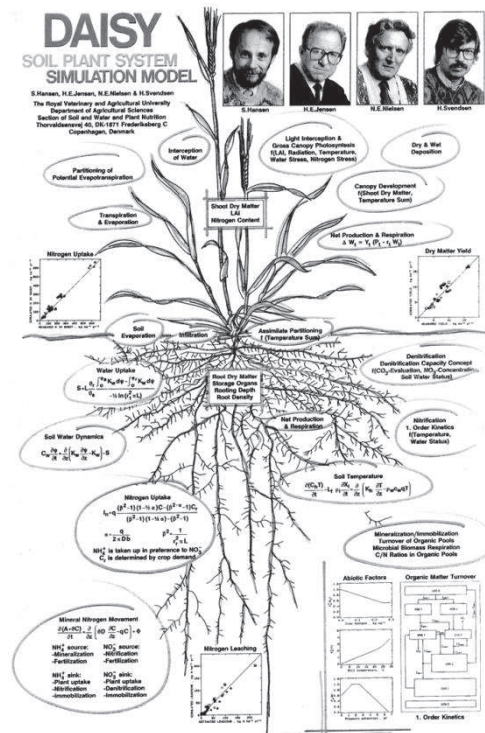
1. Would you like to receive a newsletter at regular intervals, including references, information about new features and perhaps experience from case studies?
2. Earlier on we have organised meetings once or twice per year where Danish modellers could discuss common problems and ideas. Would this be of interest to you?
3. Would you be interested in E-learning modules on aspects of Daisy use available on-line?
4. Would you be willing to pay a (reasonable) fee to access an on-line course on the use of Daisy for a particular purpose? (For example basic simulations of nitrate, pesticide leaching with and without macropores, use of the 2-D Daisy model or similar?)
5. Would you like to participate in a short (1-2 days) workshop on Daisy-use?
6. Other suggestions?

Please send your opinion to: styczen@plen.ku.dk.

The code will be migrated to new platform

The server from which Daisy is presently downloaded will be phased out this year, and the code will have to be moved. We will inform you about the changes through this Newsletter and provide a link to the new site on
http://plen.ku.dk/english/research/env_chem_phys/agrohydrology/

Interesting developments

As you may know, Daisy has in several projects been used to simulate pesticide leaching to drains through different types of macropores. In ongoing projects the effects of different tillage methods on soil hydraulic parameters and on onset of macropore flow are being explored.

Even the conditions in the wheel tracks are being investigated and modelled. Frost decreases the bulk density and influences the hydraulic conductivity and it is attempted to take this into consideration as well.

These issues will be further explored in future newsletters.

Recent articles and reports where Daisy was used:

F. Plauborg, K. Manevski, Z. Zhou, M. N. Andersen. 2015. The use of computer simulation models in precision nutrient management. 10th European Conference on Precision Agriculture July 12-16, 2015. International Society of Precision Agriculture (ISPA). Tel Aviv 6713818, Isreal.

Zhenjiang, Zhou; Andersen, Mathias Neumann; Plauborg, Finn; Edlefsen, Ove. 2015. Response of potato to drip and gun irrigation systems. Agricultural Engineering International, Vol. 2015 Special Issue: 18th World Congress of CIGR, 2015.

Asseng, S., Ewert, F., Martre, P., Rötter, R.P., Lobell, D.B., Cammarano, D., Kimball, B.A., Ottman, M.J., Wall, G.W., White, J.W., Reynolds, M.P., Alderman, P.D., Prasad, P.V.V., Aggarwal, P.K., Antothai, J., Basso, B., Biernath, C., Challinor, A.J., De Sanctis, G., Doltra, J.,

Fereres, E., Garcia-Vila, M., Gayler, S., Googenboom, G., Hunt, L.A., Izaurralde, R.C., Jabloun, M., Jones, C.D., Kersebaum, K.C., Koehler, A.-K., Müller, C., Naresh Kumar, S., Nendel, C., O'Leary, G., Olesen, J.E., Palosuo, T., Priesack, E., Eyshi Rezaei, E., Ruane, A.C., Semenov, M.A., Shcherbak, I., Stöckle, C., Stratonovitch, P., Streck, T., Supit, I., Tao, F., Thorburn, P., Waha, K., Wang, E., Wallach, D., Wolf, J., Zhao, Z. & Zhu, Y. (2005). Rising temperatures reduce global wheat production. Nature Climate Change 5, 143-147.

Zhenjiang, Z, Andersen, MN & Plauborg, F. 2014, 'Effects of fertilisation and irrigation on yield and nitrogen use efficiency of potatoes'. i C Cordovil (red.), The nitrogen challenge: building a blueprint for nitrogen use efficiency and food security: Proceeding of the 18th Nitrogen Workshop. s. 247.

Plauborg, F, Manevski, K, Zhenjiang, Z & Andersen, MN. 2014, 'Usefulness of Models in Precision Nutrient Management' ASA, CSSA and SSSA Annual Meeting, Long Beach, Californien, USA, 02/11/14 - 05/11/14,

Rötter, R.P., Palosuo, T., Kersebaum, K.C., Angulo, C., Bindi, M., Ewert, F., Ferrise, R., Hlavinka, P., Moriondo, M., Nendel, C., Olesen, J.E., Patil, R., Ruget, F., Takáč, J. & Trnka, M. (2012). Simulation of spring barley yield variability in different climatic zones of Northern and Central Europe. A comparison of nine crop growth models. Field Crops Research 133, 23-36.

Rötter, R., Carter, T.R., Olesen, J.E. & Porter, J.R. (2011). Crop-climate models need an overhaul. Nature Climate Change 1, 175-177.

Børgesen, C.D. & Olesen, J.E. (2011). A probabilistic assessment of climate change impacts on yield and nitrogen leaching from winter wheat in Denmark. Natural Hazards and Earth System Sciences 11, 2541-2553.

Palosuo, T., Kersebaum, K.C., Angulo, C., Hlavinka, P., Moriondo, M., Olesen, J.E., Patil, R., Ruget, F., Rumbaur, C., Takáč, J., Trnka, M., Bindi, M., Caldag, B., Ewert, F., Ferrise, R., Mirschel, W., Saylan, L, Šiška, B. & Rötter, R. (2011). Simulation of winter wheat yield and its variability in different climates of Europe. A comparison of eight crop growth models. European Journal of Agronomy 35, 103-114.