

Philippe Debaeke

Agronomist engineer, INA Paris Grignon (1982)

PhD Thesis, agronomy science, INA Paris Grignon (1987)

HDR, INP Toulouse (2003)

« Research Director » at INRA, UMR AGIR, Toulouse, France

Advisory editor of the scientific journal "*Agronomy for Sustainable Development*"

Member of the editorial board of "*European Journal of Agronomy*"

Main research topics : adaptation of cropping systems to water availability (irrigation or not) and to low-input constraints (low pesticide use), integrated crop production, sunflower crop management systems, G x E interactions, biotic and abiotic stresses

Methods : field and controlled experiments, long-term trials, simulation models, on-farm research

Close partnership with technical institutes (CETIOM, Arvalis) : co-responsible of the UMT (Technological Mixed Unit) "Sunflower" in Toulouse since 2006

Scientific expert for different Working Groups (collective scientific expertise) at national (Ministry of Agriculture & Ministry of Environment) and european levels : EUROCRP (EU-FP6) - 2008, ECOPHYTO - 2008, "Drought and Agriculture" - 2006, "Pesticides, Agriculture and Environment" - 2005

Selected recent publications on sunflower

Scientific journals

- 1) CASADEBAIG P., DEBAEKE P., LECOEUR J., 2008. Thresholds for leaf expansion and transpiration response to soil water deficit in a range of sunflower genotypes. *European Journal of Agronomy* 28, 646-654
- 2) FLENET F., DEBAEKE P., CASADEBAIG P., 2008. Could a crop model be useful to improve sunflower crop management ? *OCL - Oléagineux, Corps Gras, Lipides* 15, 158-161.
- 3) DEBAEKE P., ESTRAGNAT A., 2009. Crop canopy indicators for the early prediction of phomopsis stem canker (*Diaporthe helianthi*) in sunflower. *Crop Protection* 28, 792-801
- 4) DEBAEKE P., MOINARD J., 2010. Effect of crop management on epidemics of phomopsis stem canker (*Diaporthe helianthi*) for susceptible and tolerant sunflower cultivars. *Field Crops Research* 115, 50-60
- 5) SEASSAU C., DECHAMP-GUILLAUME G., MESTRIES E., DEBAEKE P., 2010. Nitrogen and water management can limit sunflower premature ripening of sunflower induced by *Phoma macdonaldii*. *Field Crops Research* 115, 99-106
- 6) SEASSAU C., DEBAEKE P., MESTRIES E., DECHAMP-GUILLAUME G., 2010. Evaluation of *P.macdonaldii* inoculation methods to reproduce sunflower premature ripening. *Plant Disease* 94, 1398-1404
- 7) CASADEBAIG P., GUILIONI L., LECOEUR J., CHRISTOPHE A., CHAMPOLIVIER L., DEBAEKE P., 2011. SUNFLO, a model to simulate genotype-specific performance of sunflower crop in contrasting environments. *Agricultural Forest Meteorology* 151, 163-178
- 8) LECOEUR J., POIRÉ-LASSUS R., CHRISTOPHE A., PALLAS B., *CASADEBAIG P., DEBAEKE P., VEAR F., GUILIONI L., 2011. Quantifying physiological determinants of genetic variation for yield potential in sunflower. SUNFLO: A model-based analysis. *Functional Plant Biology* 38, 246-259
- 9) SEASSAU C., DECHAMP-GUILLAUME G., MESTRIES E., DEBAEKE P., 2012. Low plant density can reduce sunflower premature ripening induced by *Phoma macdonaldii*. *European Journal of Agronomy* 43, 185-193
- 10) DEBAEKE P., VAN OOSTEROM E., JUSTES E., CHAMPOLIVIER L., MERRIEN A., AGUIRREZABAL L.A.N., GONZALEZ-DUGO V., MASSIGNAM A.M., MONTEMURRO F., 2012. A species-specific critical nitrogen dilution curve for sunflower (*Helianthus annuus* L.). *Field Crops Research* 136, 76-84

Communications

- 11) CASADEBAIG P., DEBAEKE P., 2008. Exploring genotypic strategies for sunflower drought resistance by the means of a dynamic crop simulation model. *Proc. 17th Int. Sunflower Conf.*, Cordoba (Spain), 8-12 June 2008, Vol.1, pp 369-374.
- 12) DEBAEKE P., CASADEBAIG P., HAQUIN B., MESTRIES E., BONLEU E., PALLEAU JP., SALVI F., 2009. Application of a model to support variety evaluation and choice in sunflower. *Proc Farming Systems Design Symposium*, Monterey (CA, USA), 23-26 Aug. 2009, 2p.
- 13) DEBAEKE P., SEASSAU C., DECHAMP-GUILLAUME G., MESTRIES E., 2010. Simple models to predict the incidence of premature ripening caused by *Phoma macdonaldii* as a function of sunflower crop management. *Proc. 11th ESA Congress, AGRO2010, Montpellier*, 647-648.
- 14) DEBAEKE P., CHAMPOLIVIER L., JOUFFRET P., LECOMTE V., SALVI F., THIBIERGE J., VOGRINCIC C., 2010. A model to simulate sunflower oilseed production on the supplying area of an agricultural cooperative. *Proc. 11th ESA Congress, AGRO2010, Montpellier*, 873-874.
- 15) DESANLIS M., AUBERTOT J.N., MESTRIES E., DEBAEKE P., 2010. A preliminary model of the effects of cultural practices on the incidence of and damage caused by *Phomopsis* stem canker on sunflower. *Proc. 11th ESA Congress, AGRO2010, Montpellier*, 539-540.
- 16) ANDRIANASOLO F., CHAMPOLIVIER L., MAURY P., DEBAEKE P., 2012. Plant density contribution to seed oil content: the responses of contrasting sunflower genotypes grown in multi-environmental network. *Proc. 18th Int. Sunflower Conf.*, Mar del Plata (Argentina), 26 Feb- 01 Mar 2012, pp. 724-729.
- 17) CASADEBAIG P., DEBAEKE P., 2012. Using a crop model to evaluate and design combinations of genotypes x management x environments that improve sunflower crop performance. *Proc. 18th Int. Sunflower Conf.*, Mar del Plata (Argentina), 26 Feb- 01 Mar 2012, pp. 736-741.
- 18) CHAMPOLIVIER L., DEBAEKE P., THIARD J., THIBIERGE J., 2012. An evaluation of sunflower production strategies in a supplying area of an agricultural cooperative using the simulator COLLECTO. *Proc. 18th Int. Sunflower Conf.*, Mar del Plata (Argentina), 26 Feb- 01 Mar 2012, pp. 742-747.
- 19) DEBAEKE P., UYTTEWAAL V., MESTRIES E., SALVI F., 2012. Characterization of drought stress environments for sunflower variety assessment. *Proc. 18th Int. Sunflower Conf.*, Mar del Plata (Argentina), 26 Feb- 01 Mar 2012, pp 390-395.
- 20) DESANLIS M., MAURY P., AUBERTOT J.N., LAGARRIGUE L., DEBAEKE P., 2012. Photosynthetic consequences of *Phomopsis helianthi* on two sunflower hybrids: analysis and modelling. *Proc. 18th Int. Sunflower Conf.*, Mar del Plata (Argentina), 26 Feb- 01 Mar 2012, pp 396-401.
- 21) DESANLIS M., MESTRIES E., LAGARRIGUE L., AUBERTOT J.N., DEBAEKE P., 2012. Effects of sunflower canopy on *Phomopsis helianthi* epidemics. In: *ECA, Plant and Canopy Architecture Impact on Disease Epidemiology and Pest Development, International Conference*, July 1-5, 2012, Rennes, France.
- 22) DEBAEKE P., BARBET-MASSIN C., SALVI F., UYTTEWAAL V., 2012. A model-based evaluation of the representativeness of multi-environment trials used for sunflower variety assessment in France. *Proc. 12th ESA Congress, Helsinki (Finland)*, 20-24 Aug. 2012, 322-323.
- 23) DEBAEKE P., CASADEBAIG P., CHAMPOLIVIER L., MESTRIES E., ROUSSE N., THIARD J., 2012. From crop model to decision-support system: developing tools for variety assessment and scenario analysis in sunflower. *Proc. 12th ESA Congress, Helsinki (Finland)*, 20-24 Aug. 2012, 284-285.