

XVI International Symposium on Apricot Breeding and Culture
and XV Chinese National Symposium on Plum and Apricot

ABSTRACTS



ISHS



CSHS



LAAS

June 29-July 3, 2015, Shenyang, China
Edited by: Weisheng LIU, Shuo LIU, Xiaoxue MA

PERPHECLIM ACCAF Project - Perennial Fruit Crops and Forest Phenology Evolution Facing Climatic Changes

Iñaki Garcia de Cortazar-Atauri and Patrick Bertuzzi
INRA, US1116 AGROCLIM
F-84914 Avignon
France

Jean Marc Audergon
INRA, UR 052 GAFL
F-84143 Avignon
France

Sylvain Delzon
INRA, UMR1202 BIOGECO
F-33612 Cestas
France

Christel Anger
INRA, UE0995 GBFOR
F-45075 Orleans
France

Eric Duchêne
INRA, UMR1131 SVQV
F-68000 Colmar
France

Marc Bonhomme
INRA, UMR 0547 PIAF
F-63039 Clermont Ferrand
France

Jean Michel Legave
INRA, UMR1334 AGAP
F-34060 Montpellier
France

Isabelle Chuine
CNRS, UMR 5175 CEFE
F-34293 Montpellier
France

Hélène Raynal
INRA, UR0875 MIAT
F-31326 Castanet-Tolosan
France

Hendrik Davi and Christian Pichot
INRA, UR0629 URFM
F-84914 Avignon
France

Cornelis Van Leeuwen
Bordeaux Sciences Agro/INRA,
UMR1287 EGFV
F-33883 Bordeaux
France

Perpheclim Team
INRA

Keywords: Abiotic stresses, phenology, blooming period, adaptation, modelling

Abstract

Phenology is a bio-indicator of climate evolutions. Measurements of phenological stages on perennial species provide actually significant illustrations and assessments of the impact of climate change. Phenology is also one of the main key characteristics of the capacity of adaptation of perennial species, generating questions about their consequences on plant growth and development or on fruit quality.

Predicting phenology evolution and adaptative capacities of perennial species need to override three main methodological limitations: 1) existing observations and associated databases are scattered and sometimes incomplete, rendering difficult implementation of multi-site study of genotype-environment interaction

analyses; 2) there are not common protocols to observe phenological stages; 3) access to generic phenological models platforms is still very limited.

In this context, the PERPHECLIM project, which is funded by the Adapting Agriculture and Forestry to Climate Change Meta-Program (ACCAF) from INRA (French National Institute of Agronomic Research), has the objective to develop the necessary infrastructure at INRA level (observatories, information system, modeling tools) to enable partners to study the phenology of various perennial species (grapevine, fruit trees and forest trees). Currently the PERPHECLIM project involves 27 research units in France.

The main activities currently developed are: define protocols and observation forms to observe phenology for various species of interest for the project; organizing observation training; develop generic modeling solutions to simulate phenology (Phenological Modelling Platform and modelling platform solutions); support in building research projects at national and international level; develop environment/genotype observation networks for fruit trees species; develop an information system managing data and documentation concerning phenology.

Finally, PERPHECLIM project aims to build strong collaborations with public (Observatoire des Saisons) and private sector partners (technical institutes) in order to allow a more direct transfer of knowledge