

Evaluation of novel peach cultivars in the European Union: the EUFRIN Peach and Apricot Working Group initiative

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Abstract

Peach cultivars can undergo large performance variations when cultivated in different environmental conditions. As growers cannot afford the financial risk of choosing a cultivar unsuited to their specific conditions, information as comprehensive as possible on the marketed cultivars is useful and highly needed. Several organizations in the European Union (EU) are engaged in the performance assessment of the novel cultivars based on experimental trials. However, the exchange of information is overall poor, limiting the completeness of information on new releases that would derive from integrating the results obtained in various climatic and agronomical contexts. The Apricot and Peach working group established in 2014 within EUFRIN (European Fruit Research Institutes Network, www.eufrin.org) has recently embarked on a new initiative aiming to implement a collaborative varietal evaluation system in the EU countries. The first step was the establishment of a common list of descriptors to assess the performance of peach cultivars in the testing trials. About 40 descriptors, related to different phenological traits as flowering or harvest period, productivity, fruit appearance and internal quality, susceptibility to physiological disorders and to some major diseases in peach were selected. The protocols to measure and score each trait are being set up, as well as the selection of a common set of cultivars to include as references in the various testing sites in order to homogenize the evaluation. Implementation of this network will allow a real-time information exchange on the new peach releases.

Keywords: descriptors, fruit quality, phenology, *P.persica*, testing trials, agronomical performance, adaptability

INTRODUCTION

With a 22.8 million ton production on a yearly global scale (FAOSTAT 2014), peach [*Prunus persica* (L.) Batsch] is a commercially important fruit tree crop. Hundreds of new peach and nectarine cultivars are released every year by numerous private and public breeding programs worldwide (Della Strada and Fideghelli, 2008; Iglesias, *in press*). High yields, fruit attractiveness (eg. large fruit size, regular shape and extensive skin blush) and good taste are traditional goals in

peach breeding, whereas the adaptability to a wide range of environments is rarely taken into consideration as a criterion of selection (Reig et al., 2015). However, peach cultivars can undergo large performance variations when cultivated in different environmental conditions. For example, under the Ebro Valley conditions in Spain, only 10% of the new tested cultivars provided a good agronomical performance and desirable fruit quality (Iglesias, *in press*). As growers cannot afford the financial risk of choosing a cultivar unsuited to their specific conditions, information as comprehensive as possible on the marketed cultivars is needed.

Several organizations in the European Union (EU) are engaged in the assessment of varietal performance based on experimental trials. However, with few exceptions, the testing of new varieties is usually carried out individually; the experimental designs, methods and evaluation protocols used by various testers are often different; the data and knowledge sharing is poor and difficult. This state-of-art limits the completeness of information on the performance of newly introduced varieties that could instead result from the exchange of knowledge and datasets issued in various climatic and agronomical contexts.

The Apricot and Peach working group (hereafter A&P WG, Figure 1), established in 2014 within EUFRIN (European Fruit Research Institutes Network, www.eufrin.org), has recently embarked on a new initiative aiming to implement a collaborative evaluation system of novel cultivars in the EU countries. The final goal of this initiative is to boost the harmonization of the varietal evaluation in the EU and to improve the dissemination and quality of information on the newly released cultivars. This paper reports the steps undertaken to develop this collaborative system and the results achieved so far.



Figure 1. Location of the 33 EU Institutes participating to the EUFRIN A&P WG

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