



HAL
open science

Innovation for organic Broccoli: Breeding for diversity and quality in France

Veronique Chable, Camille Vindras, Frédéric Dalmon, Mathieu Conseil, Bruno Taupier-Letage, Frédéric Rey

► To cite this version:

Veronique Chable, Camille Vindras, Frédéric Dalmon, Mathieu Conseil, Bruno Taupier-Letage, et al.. Innovation for organic Broccoli: Breeding for diversity and quality in France. SOLIBAM 1st Stakeholder congress, Apr 2012, Rome, Italy. 1 p. hal-01210046

HAL Id: hal-01210046

<https://hal.science/hal-01210046>

Submitted on 6 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Objectives:

In the framework of SOLIBAM, integrated breeding strategy are implemented in order to develop populations adapted to organic and low input practices. As sensory quality is a great expectation from organic consumer, breeding strategy will integrate sensory criteria. In order to create new type populations, a large germplasm of broccoli have been first screened for their agronomical performance and their sensory quality. On these results, a minimum number of common traits required have been proposed on the agronomical, gustatory qualities and more secondary on appearance traits.

The next step consists in selecting plants of interest, crossing them in order to tend to populations which complied with requirement. Each harvest will lead to a sensory evaluation and help the breeding choice.

WP and Task objectives :

WP3, Task 3.1 develops methodologies for creating new diverse population
Sub-task 6.2.2 will explore a multiple-stakeholder case through the participatory evaluation of organoleptic quality
WP7 : quality

The ressources of broccoli populations:

The common traits identified in the first step of the breeding process consist in population with **good agronomical performance** in low input condition, with the **shape of modern variety** (to facilitate the harvest), a determined appearance as the **purple color** (to be easily recognized by consumers) and with a **sweet taste**.

Three parents have been chosen for their respective qualities:

- A modern variety of 'Marathon type for its shape,
- A purple variety, 'Rosalind', for its color,
- A sprout variety, 'Di Cicco', for its sweet taste



A modern variety of 'Marathon' type for its shape



A purple variety, 'Rosalind', for its color

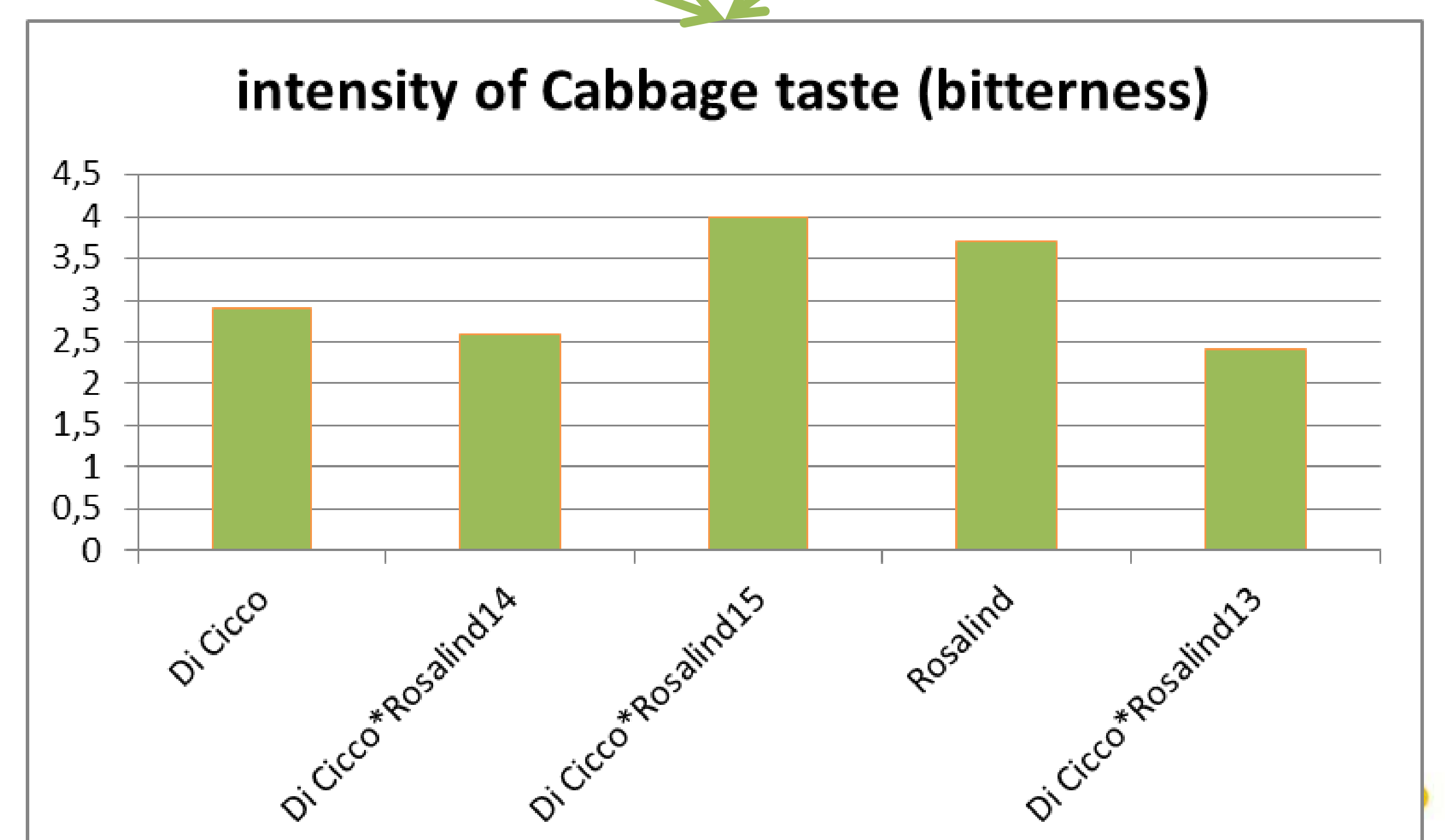


A sprout variety, 'Di Cicco', for its sweet taste

First results

A first methodology consisting in ordering sample according to a unique sensory characteristic (their "cabbage taste" in the example) has been implemented and gave some promising results. Some taste characteristics appeared to be transmitted from parents to progeny.

The picture opposite highlight the progenies' diversity on a single characteristic which can be obtained by crossing two populations. The 13 and 14 crossing are closer to the 'Di Cicco' whereas the 15 crossing is closer to the Rosalind. For this reason, each individual plants are evaluated and will be grouped in a pool of common characteristics.



Perspectives 2012 – 2013

A new sensory evaluation methodology, more suitable, will be applied for the further breeding step. This methodology is at the heart of a PhD project and will be tested, discussed and evaluated in this framework (see the PhD Poster: "How to implement organoleptic quality assessment in PPB approach").