

General comments. The manuscript is concerned with the role of adult plant resistance (APR) in short- and long-term disease control through a modelling approach. The manuscript is well written in general and addressing such a question is relevant compared to the existing literature on the subject.

My main concern is the lack of more details on the model formulation within the current manuscript. We need to refer to the authors' previous publications to be able to precisely follow the model overview used here. Such a point seems particularly relevant because the main results of the manuscript are based on the numerical simulations of that model (whatever the target audience of the journal).

More specifically.

1. The term 'age to resistance expression' seems more relevant than 'time to resistance expression' (eg, line 86). Indeed, this is useful to distinguish the 'time' (viewed as the dynamical time) from the plant age at which the resistant gene is expressed (the 'age to resistance expression').
2. Similarly, 'time to expression' can be replaced by 'plant age for RG (resistant gene) expression'.
3. What is the actual meaning of the full activation of APR gene (eg, lines 84-86)?
4. The plant age for RG expression is modelled by a gamma distribution. Please, can you precisely detail how this gamma distribution is parameterized? Instead of Figure 1 (which I think is not so helpful), those details will help draw a 2D figure with the x-axis (the age of the plant) and the y-axis (the resistant efficiency). More precisely, how can I find the resistance efficiency when the age of the plant is known?
5. Moreover, Figure 2 seems to come before Figure 1 in the manuscript (line 170). Please, check.
6. A formula is welcome in lines 265-267 to help understand how green leaf area is quantified by the model presented here. This will help to give some details on the model used here, without necessarily referring to the authors' previous paper.
7. Lines 250-258 seem more relevant at the beginning of the section 'Numerical experiments'.
8. Please, explain why for the latent period, multiplicative coefficients are $1 + \rho$ and $1 + \theta$ instead of $1 - \rho$ and $1 - \theta$ (Table 1).