We appreciate the thorough analysis of our paper (de Jong van Lier et al., 2006, referred to as QdJ) made by T. Schröder et al. (2007) and would like to reply to their comments (referred to as TS).

**Derivation and Analysis of Eq. [45] (QdJ)**

In their comment, the correctness of Eq. [45] in QdJ is questioned. The authors derive an analytical solution for the relation between \( M \) and \( r \) under identical boundary conditions (their Eq. [6]). The result differs from our Eq. [45]:

\[
M_{b_0} = \frac{T_p}{2\bar{\zeta}} \left[ \frac{r^2 - r_0^2}{2} + \left( m^2 - r_0^2 \right) \ln \frac{r}{r_0} \right] \tag{45} \text{(QdJ)}
\]

\[
M_{b_0} = \frac{T_p}{2\bar{\zeta}} \left[ \frac{r_0^2 - r^2}{2} + \left( m^2 + r_0^2 \right) \ln \frac{r}{r_0} \right] \tag{6} \text{(TS)}
\]

After analysis and comparison of the derivation, we conclude that Eq. [6] (TS) is correct. Equation [45] (QdJ), is not correct due to a missing minus sign in Eq. [38] (QdJ), which should read

\[- \frac{T_p}{\bar{\zeta}} \frac{q - \partial q}{r} = \frac{\partial M_{b_0}}{r \partial r} + \frac{\partial^2 M_{b_0}}{\partial r^2} \tag{38} \text{(QdJ)}
\]

This error in the derivation remained unnoticed because, in the calculation of values to prepare Fig. 15 (QdJ), as well as other (unpublished) figures similar to Fig. 1 (TS), it was made that (approximately) canceled the analytical solution in Eq. [45] (QdJ) was based on an erroneous equation

\[
M_{b_0} = \frac{T_p}{2\bar{\zeta}} \left[ \frac{r^2 - r_0^2}{2} + \left( m^2 - r_0^2 \right) \ln \frac{r}{r_0} \right]
\]

which, considering that \( r_0^2 \) is very small, is almost equal to Eq. [6] (TS). Consequently, despite the analytical error, the result. Analytical results seemed to perfectly match the numerical simulations. Therefore, unfortunately, we had no reason to suspect an error in the derivation of Eq. [45].

**The Interpretation of Fig. 15**

Schröder et al. (2007) express doubts as to how to read Fig. 15. They assume that “the range of numerically simulated pressure heads at first occurrence of limiting hydraulic conditions at the root surface is plotted versus the range of pressure heads obtained with the analytical solution.” We agree. The axes titles should read \( h_{r,\text{lim}} \) (pressure head at the entire range of distances from the axial center at the onset of limiting hydraulic conditions) instead of \( h_{\text{mean,lim}} \). The same terminology is used in the text (de Jong van Lier, 2006, p. 1275, col. 2, line 5) and should be read in the above sense. The comparison between numerically and analytically obtained results, however, as represented in this figure, does show a slightly positive discrepancy \( (h_{r,\text{lim}} - \text{analytical} > h_{r,\text{lim}} - \text{numerical}) \) over some range, contrary to the findings of Schröder et al. (2007, their Fig. 2). This is possibly due to differences between our numerical approaches, which we cannot verify at present. In any case, both numerical approaches correspond in the sense that the differences are very small and only significant for a small number of simulated scenarios.

**On the Units in our Table 2**

The units for root density in Table 2 were erroneously presented as meters per cubic meter. The correct units are centimeters per cubic centimeter. We apologize for this.