

Chapter 5

Experimental Results

5.1 Results of the Shapes of Leaf

Different leaf shapes can be adjusted by changing some parameters of the function. The results of six shapes of leaf with the adjusted parameters, which are constructed by the proposed model, are shown in Figure 5.1 to Figure 5.6.

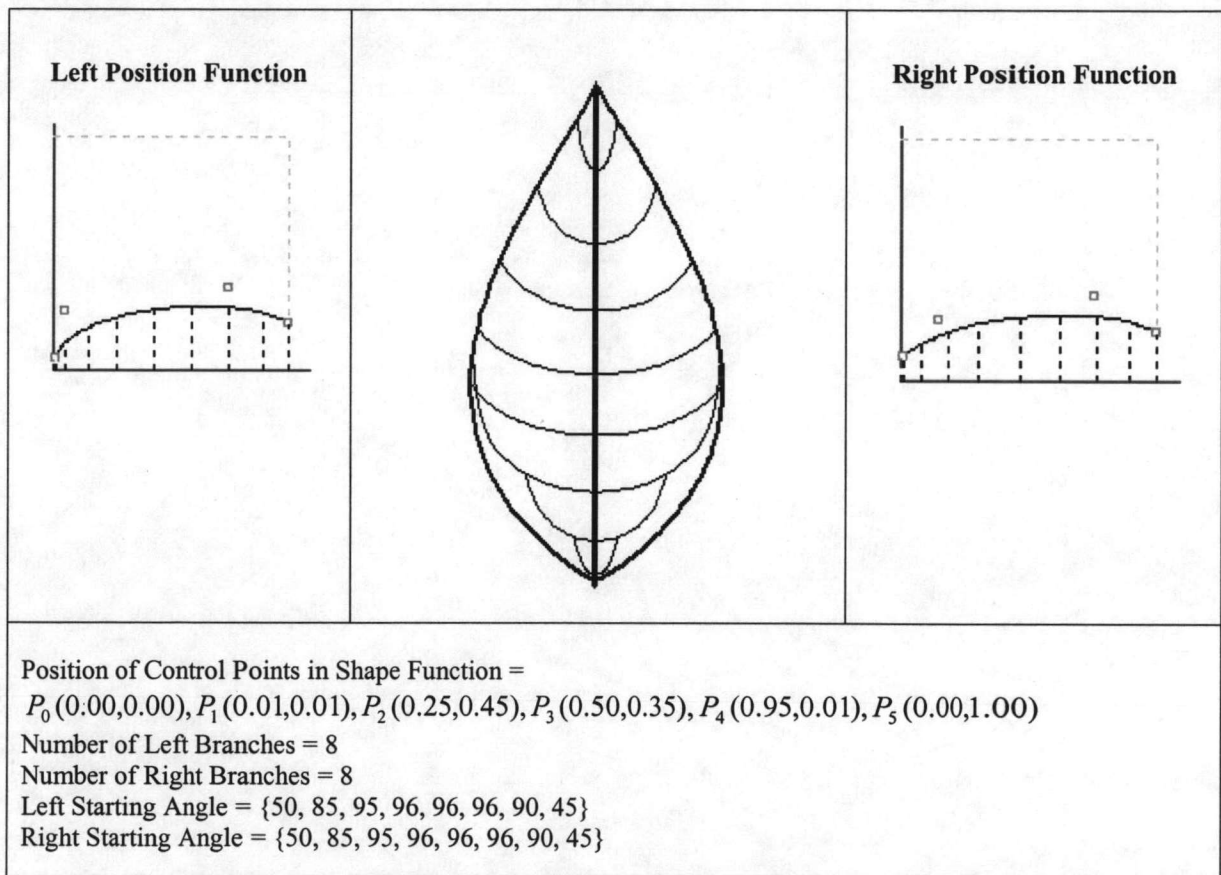


Figure 5.1: Results of Lanceolate shape and parameters.

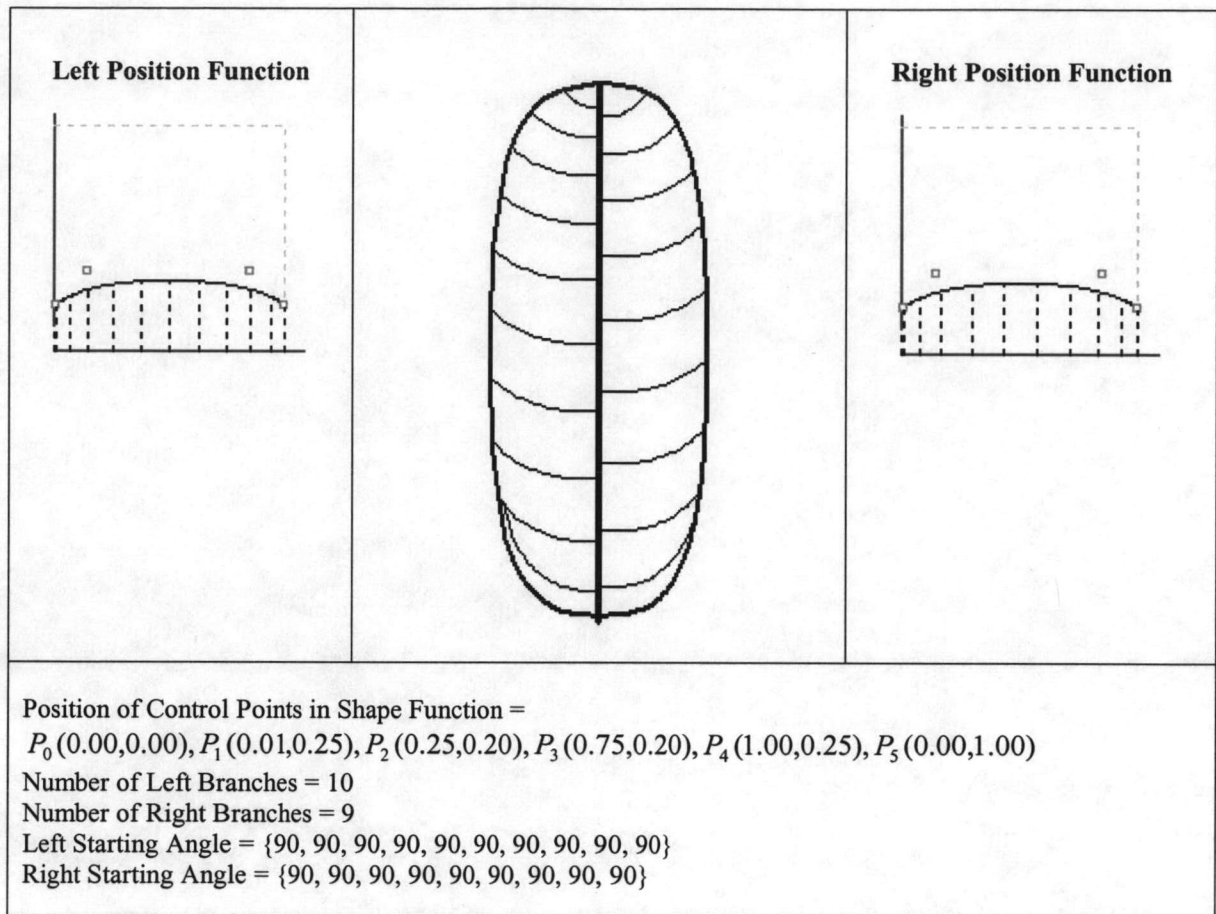


Figure 5.2: Results of Oblong shape and parameters.

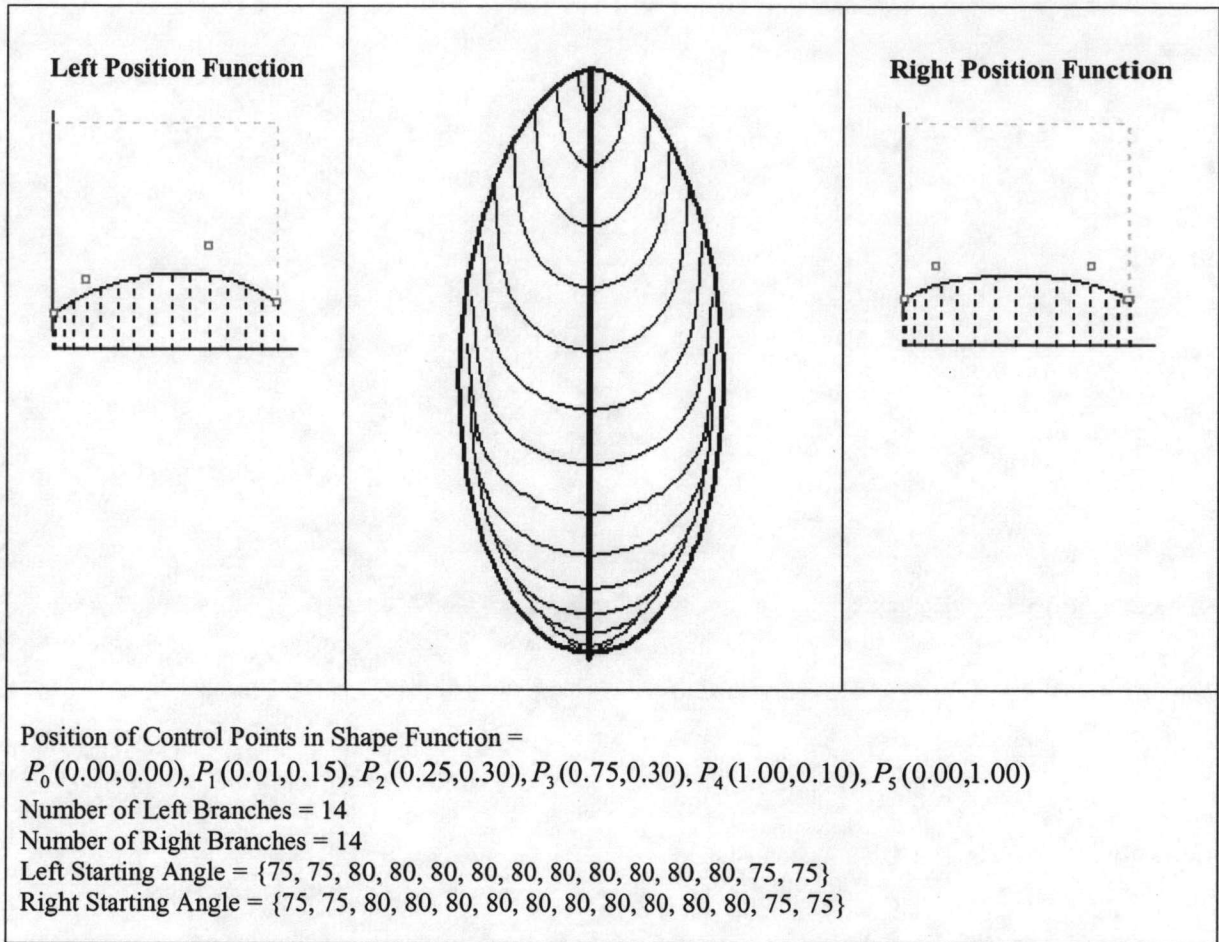


Figure 5.3: Results of Elliptic shape and parameters.

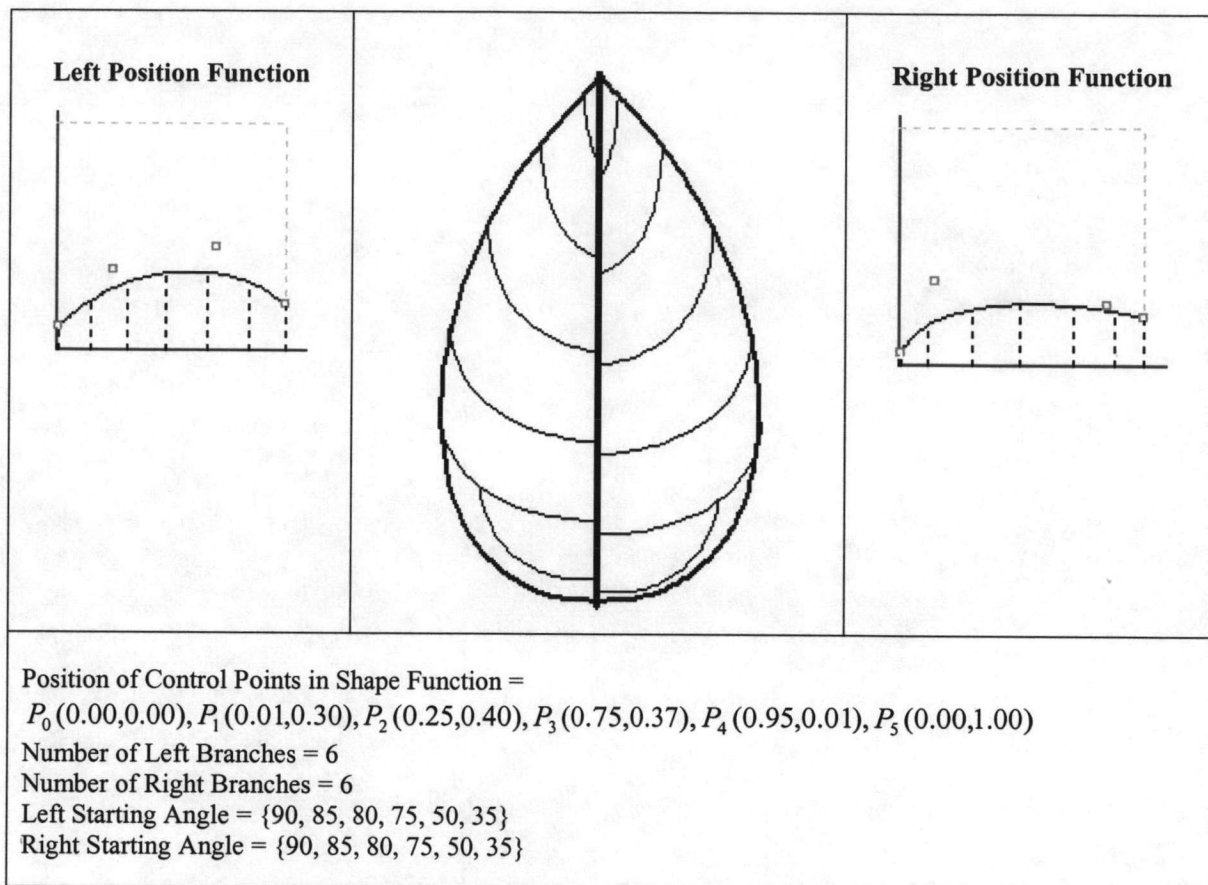


Figure 5.4: Results of Ovate shape and parameters.

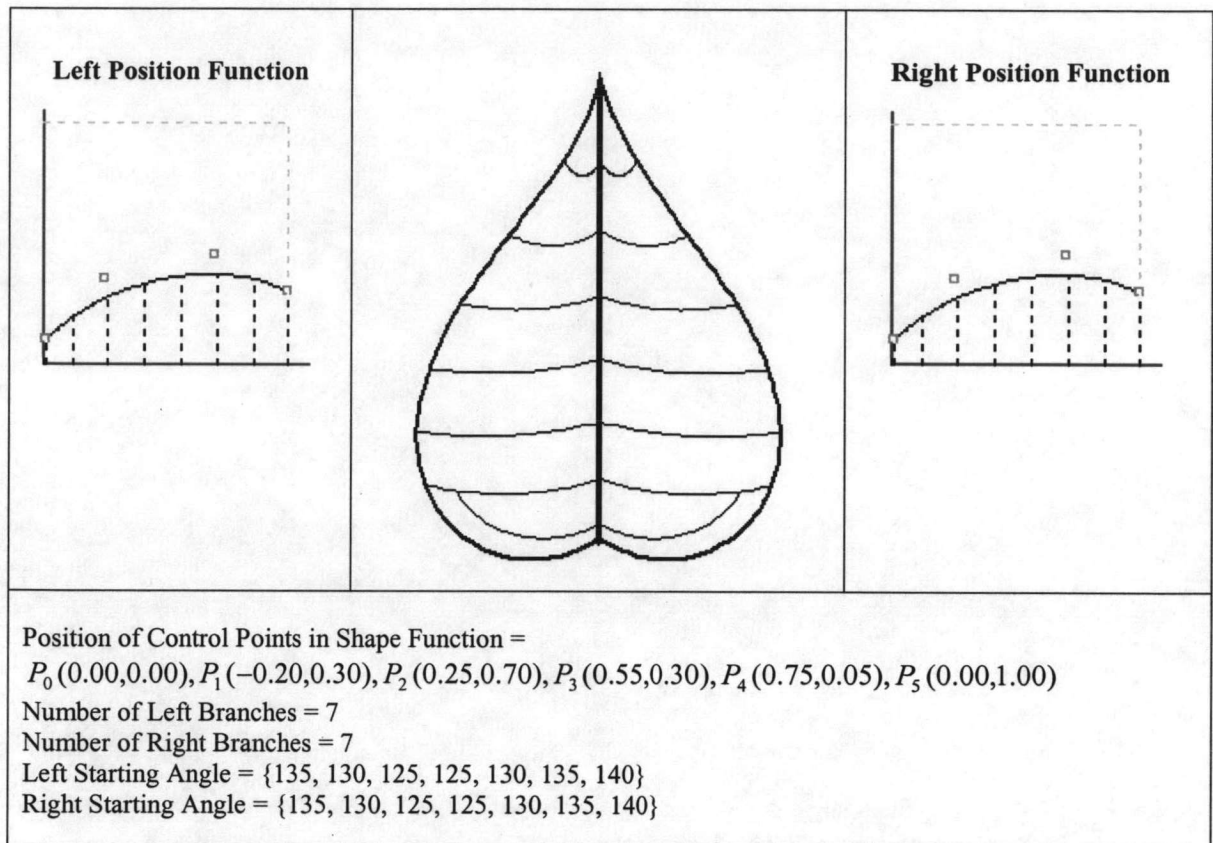


Figure 5.5: Results of Cordate shape and parameters.

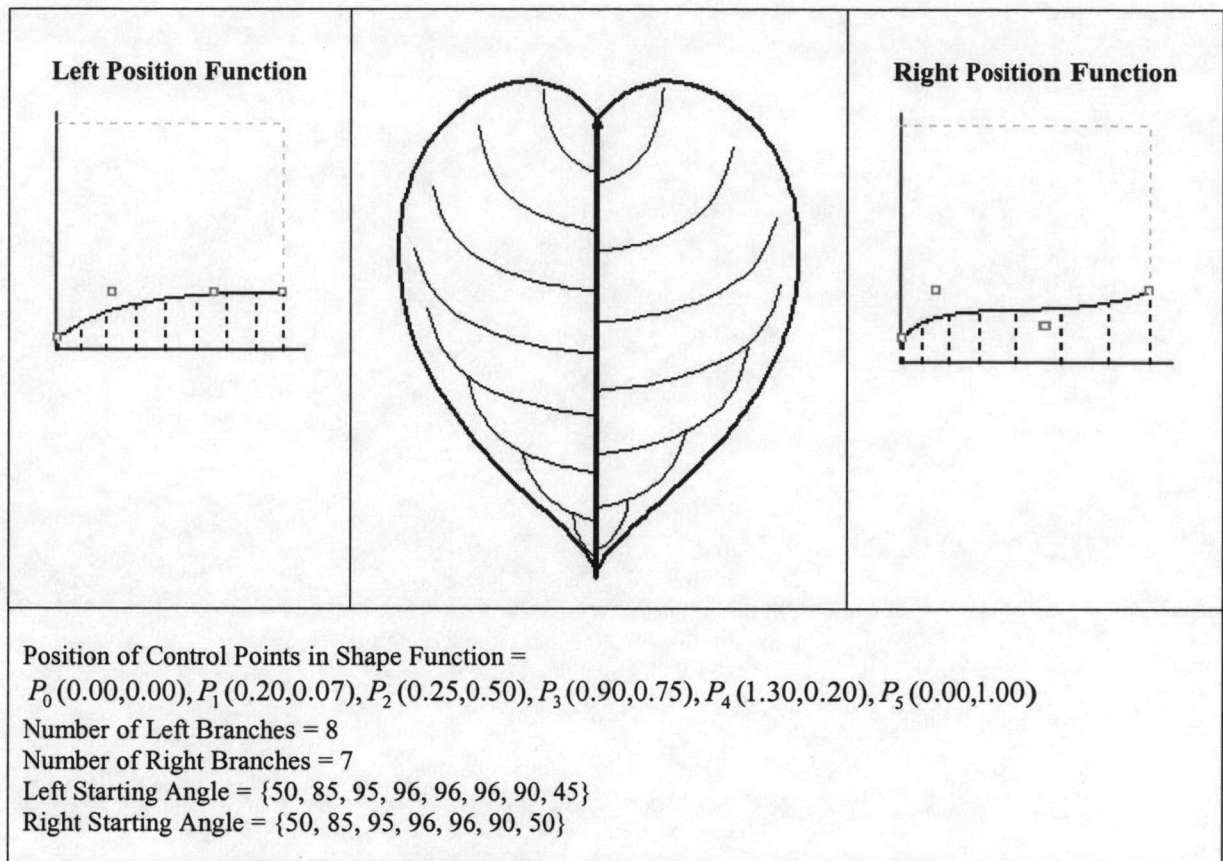


Figure 5.6: Results of Obcordate shape and parameters.

5.2 Results of the Growth Simulation

The leaf length and width data used in this study are soybean data. Soybean has Lanceolate shape which is shown in Figure 5.7

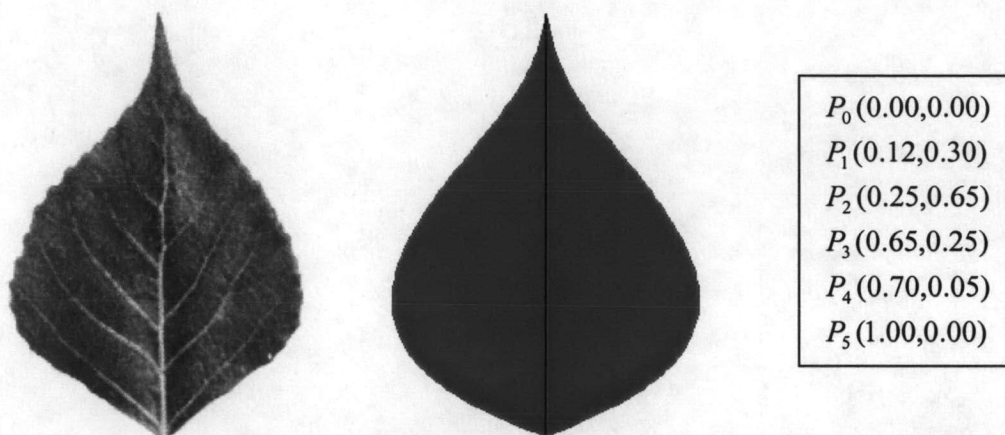


Figure 5.7: A soybean leaf shape model.

Approximation parameters are the slopes of the length function and the width function over 60 days of data. The result of the soybean growth is illustrated in Figure 5.9, where the slope m_L of length function is equal to 25 and the slope m_W of the width function is 30. The approximated function of the length and width of soybean leaf are shown in Figure 5.8.

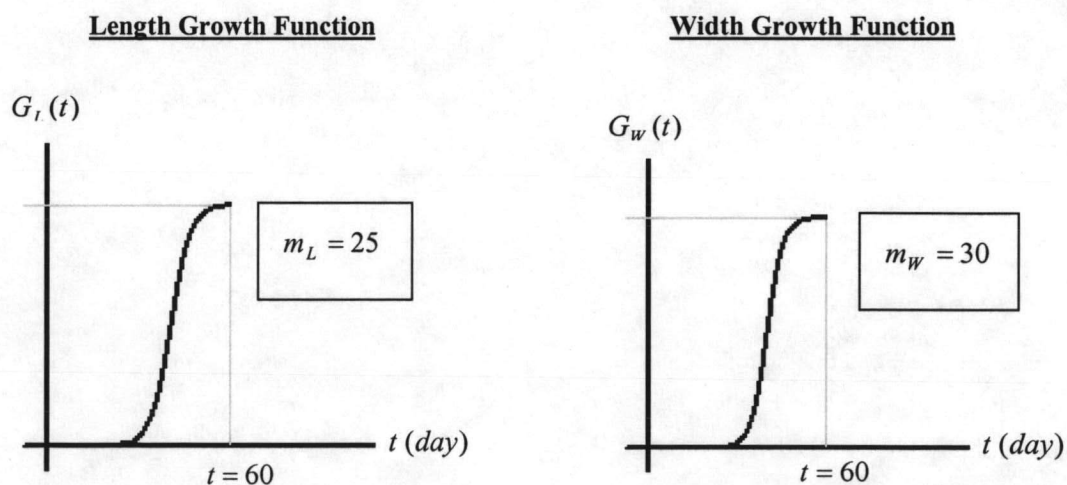


Figure 5.8: Approximation function of the length and width of soybean leaf.

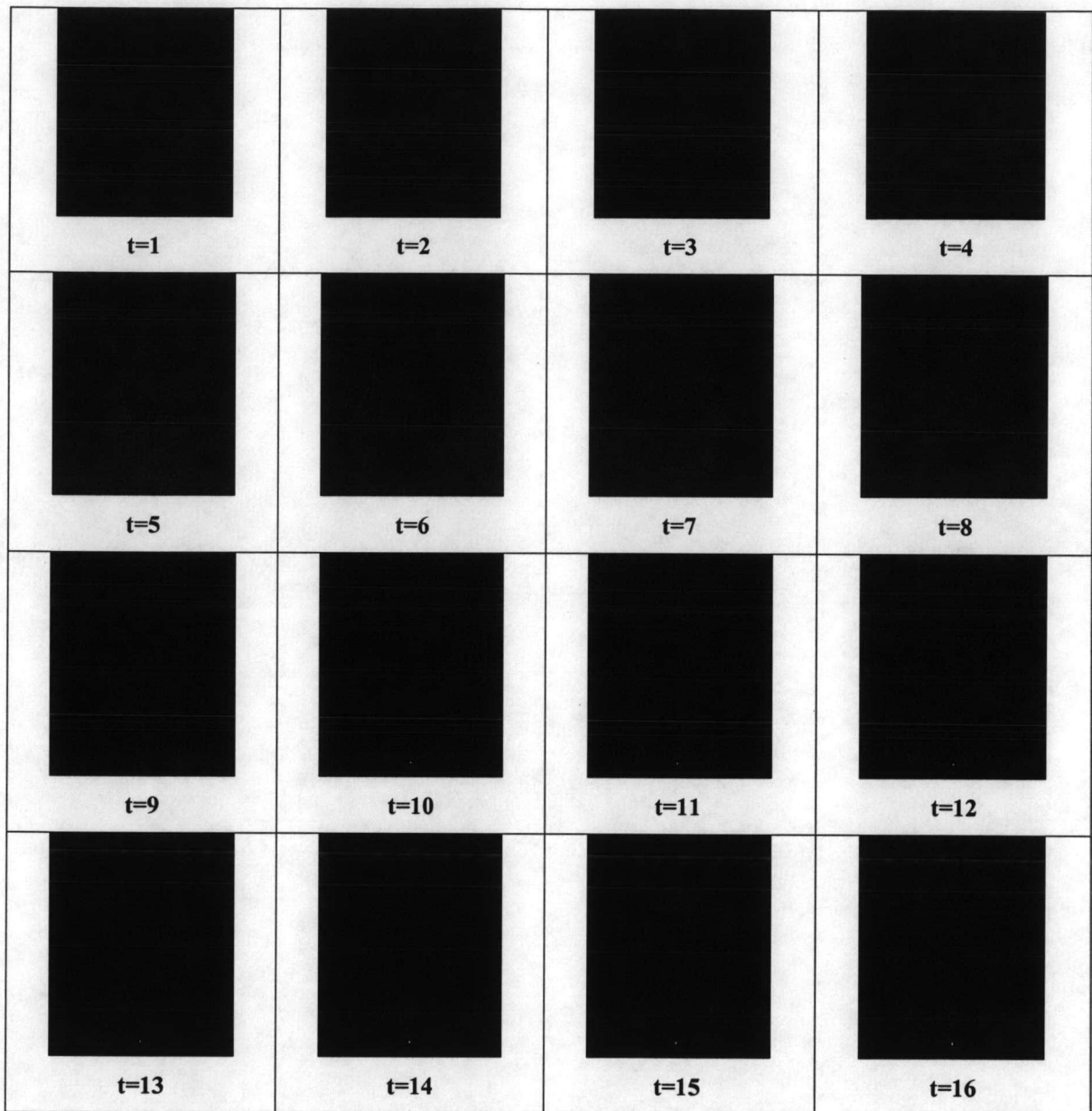


Figure 5.9: A soybean growth simulation over 60 days (day 1 to day 16).

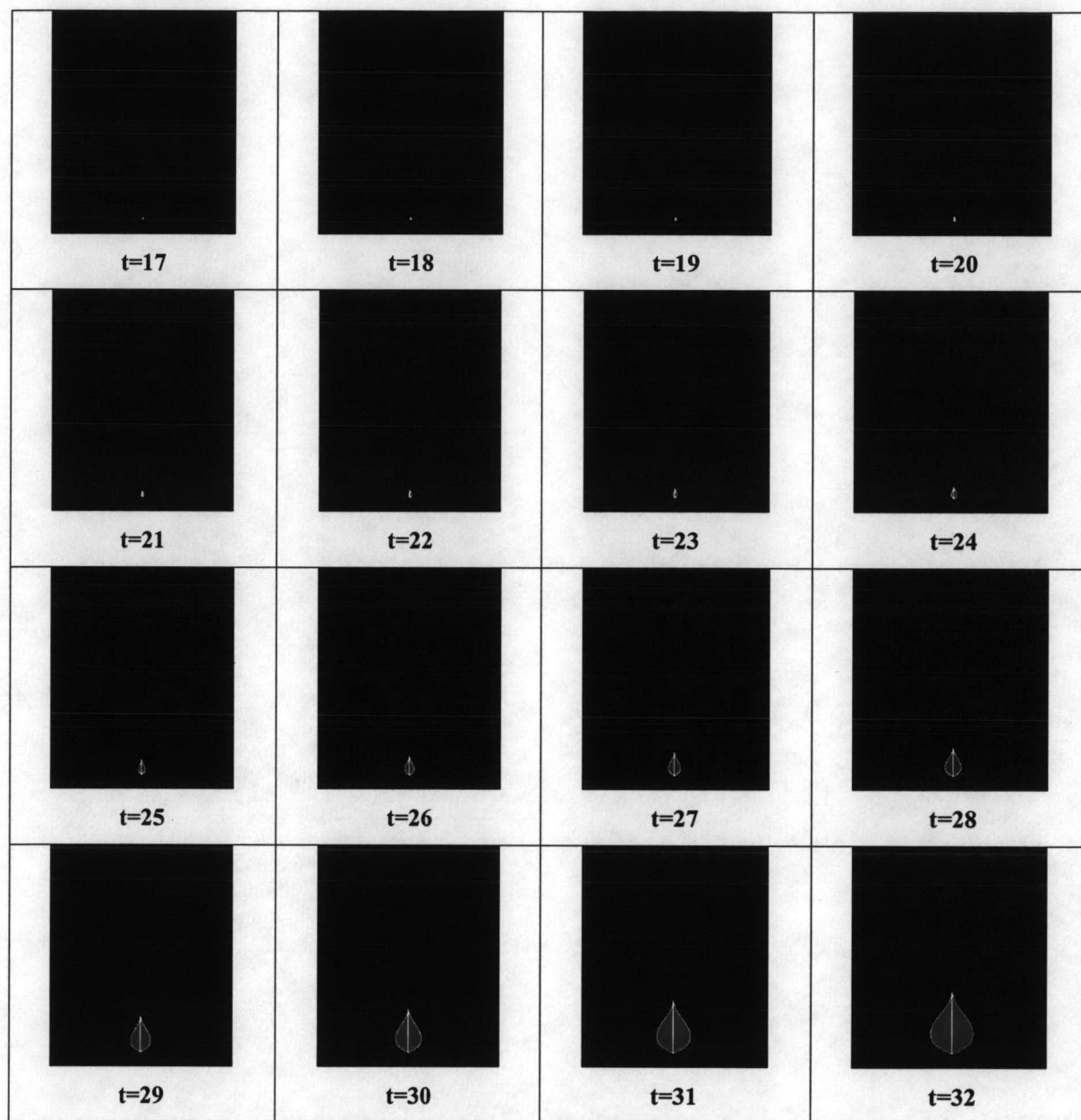


Figure 5.10: A soybean growth simulation over 60 days (day 16 to day 32).

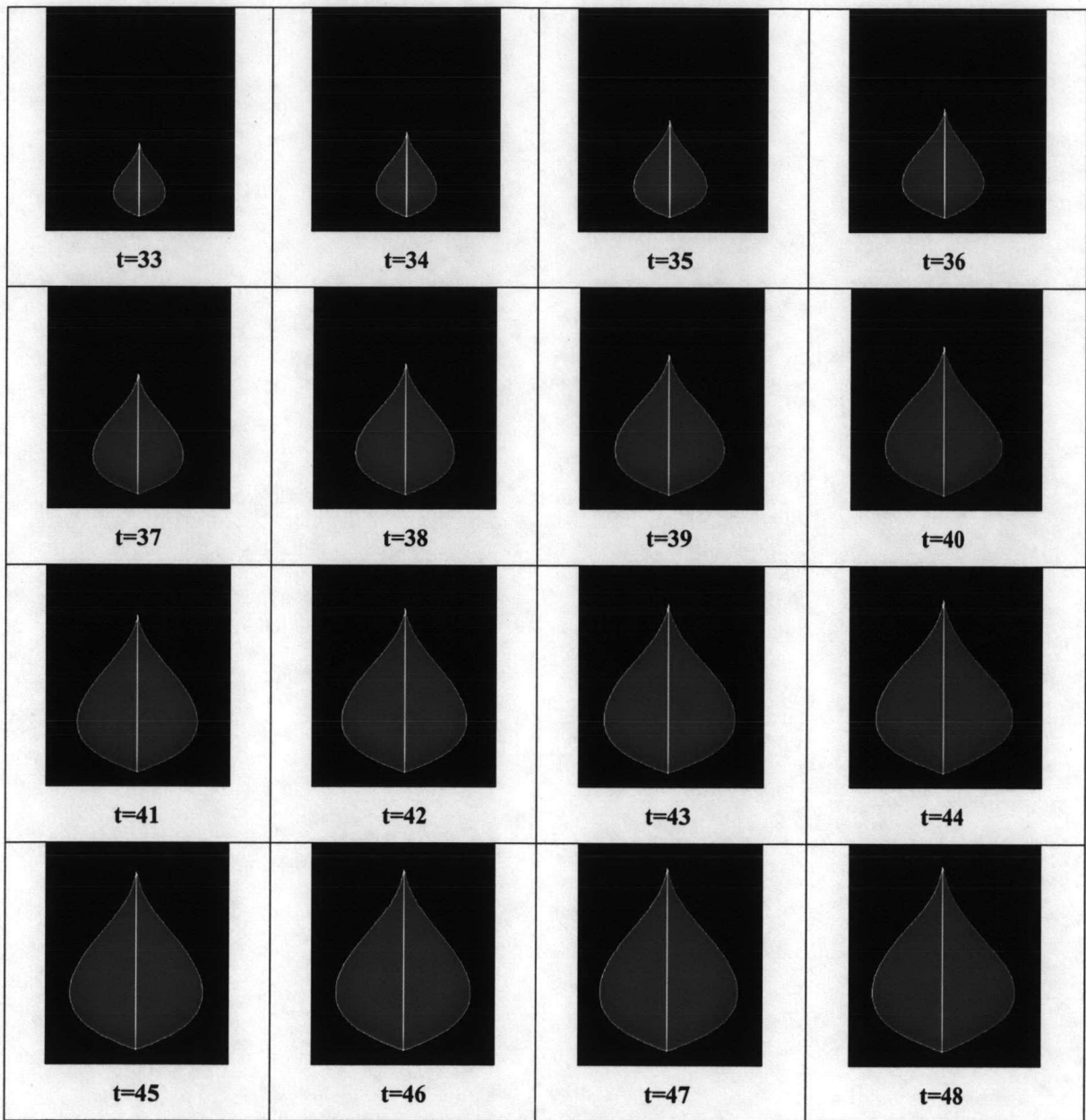


Figure 5.11: A soybean growth simulation over 60 days (day 33 to day 48).

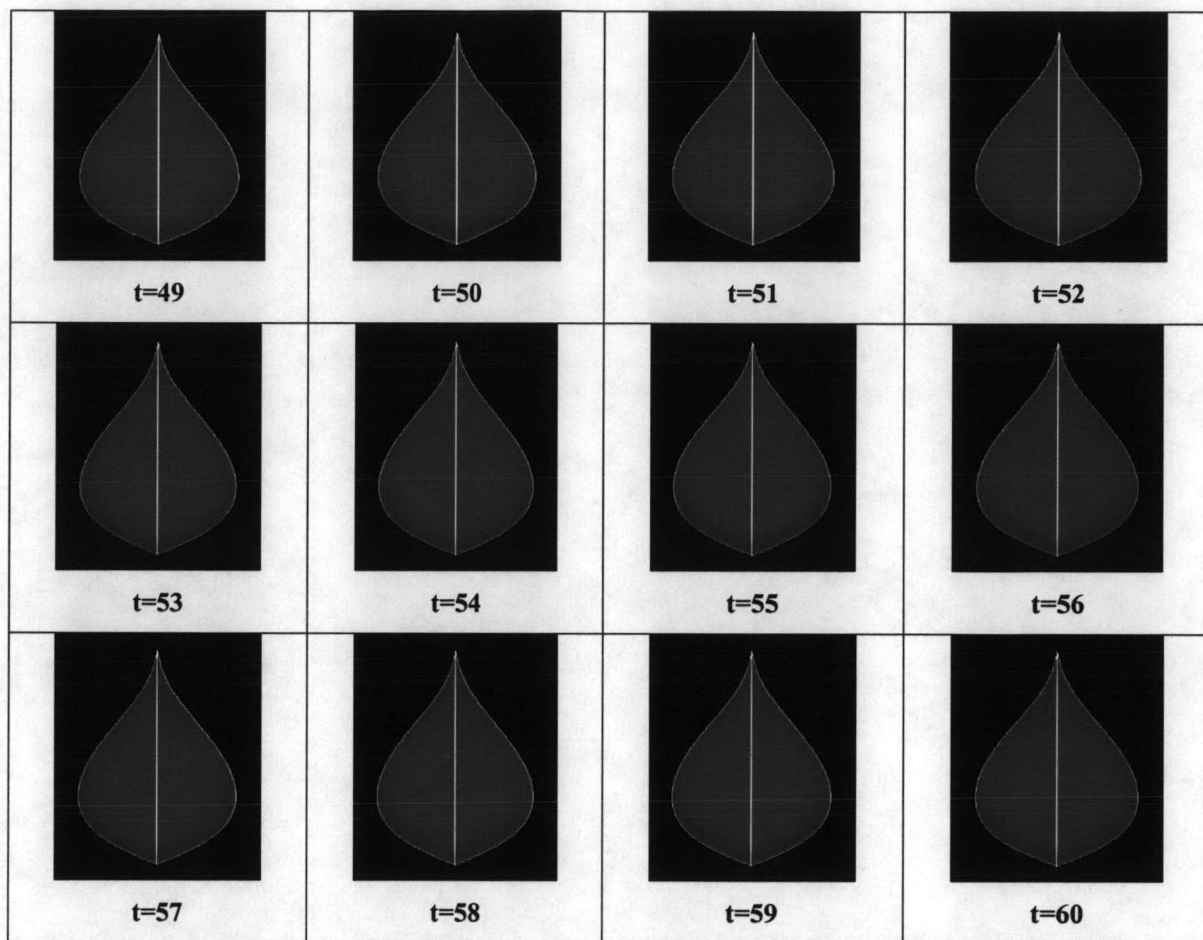


Figure 5.12: A soybean growth simulation over 60 days (day 49 to day 60).