

Figure S1. Growth development of hop plants, season of 2021. A: 'Hallertau Mittelfrühher'; B: 'Mapuche'; C: 'Northern Brewer'; D: 'Spalter'; E: 'Yakima Gold'; (-----): estimated plant height (m).

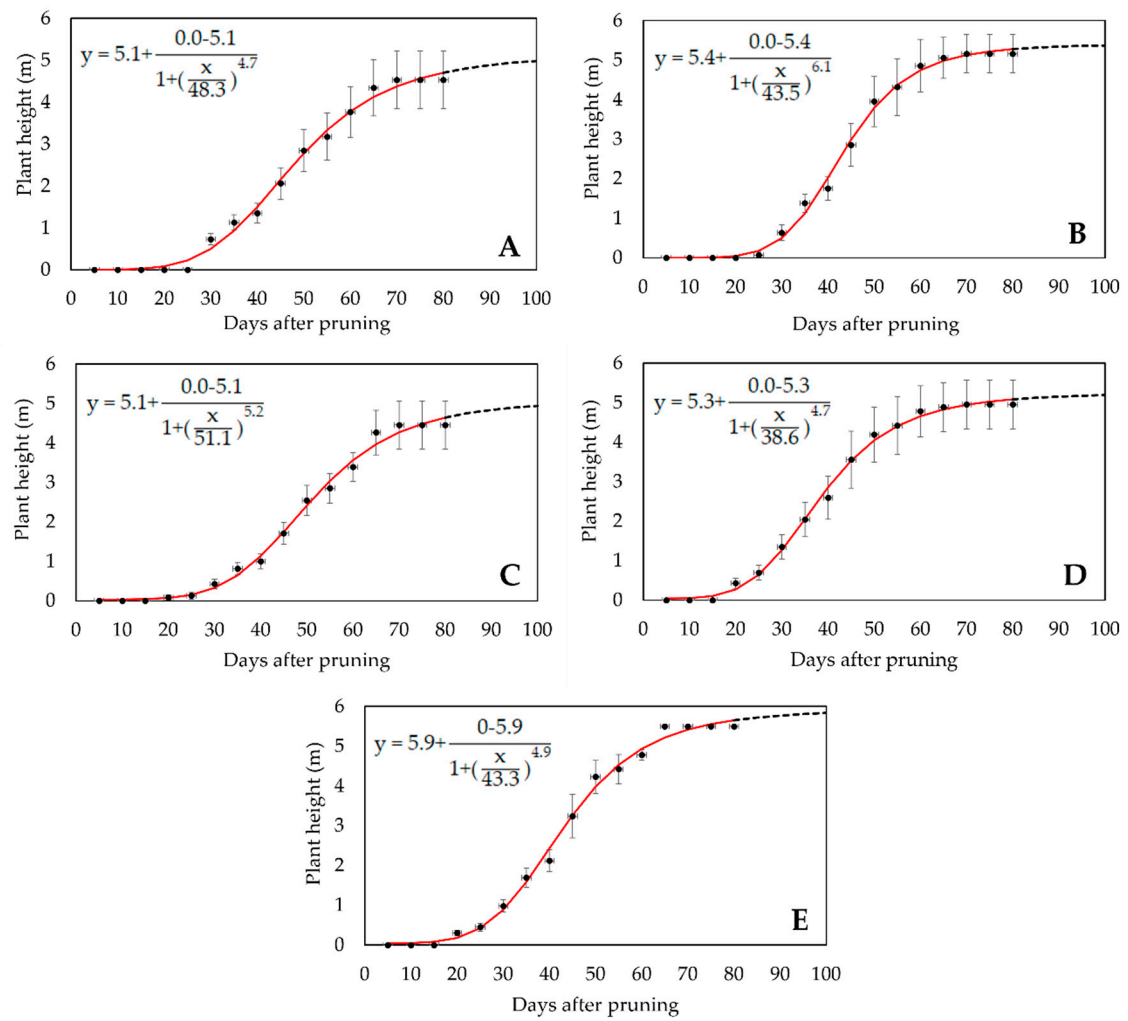


Figure S2. Growth development of hop plants, season of 2022. A: 'Hallertau Mittelfrühher'; B: 'Mapuche'; C: 'Northern Brewer'; D: 'Spalter'; E: 'Yakima Gold'; (-----): estimated plant height (m).

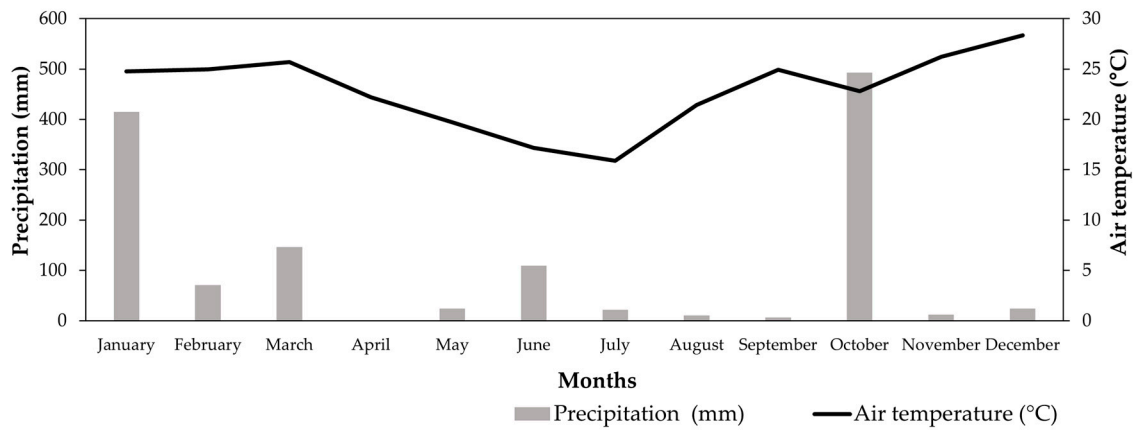


Figure S3. Average air temperature and precipitation in Palotina, PR, Brazil in 2021.

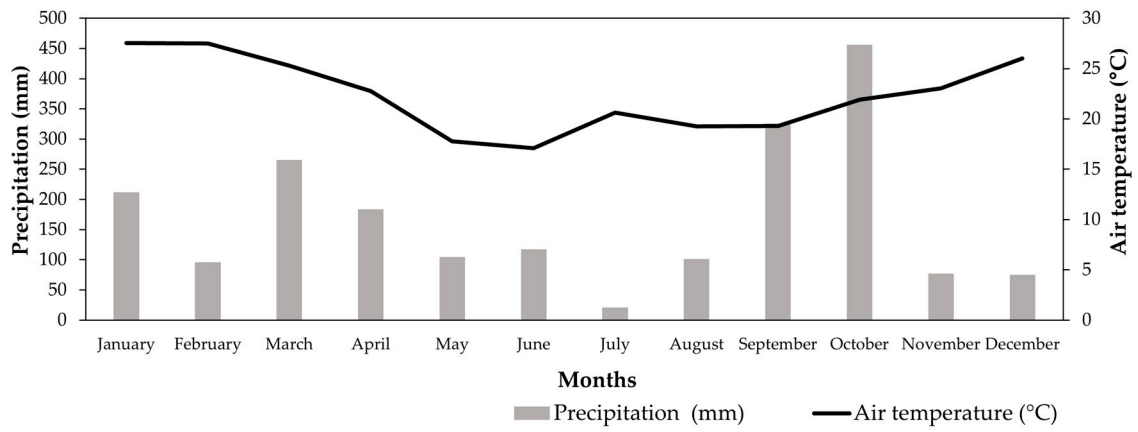


Figure S4. Average air temperature and precipitation in Palotina, PR, Brazil in 2022.