

Advances in Crop Science and Technology

in 2017) 2,3 .
50-70% (t L 2020) 4 . 40%
(L 2016), 21% (L 2016),
50% (L 2017), 27-40%
(L 2010), 42% (L 2013) 68%
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5 .
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20 (Babu, 2020). The effects of drought stress on crop production are well documented (Aman et al., 2010) 25 . The impact of drought stress on crop production is also well documented (Babu, 2022). The impact of drought stress on crop production is also well documented (Babu, 2021). The impact of drought stress on crop production is also well documented (Babu, 2020) 27 (Babu, 2020).

Drought stress can be managed by different strategies. These include avoidance, tolerance, and escape. Avoidance is achieved by deep roots, stomatal closure, leaf rolling, tissue stay green, and high transpiration efficiency. Tolerance is achieved by osmotic adjustment, protective solutes, high proline, desiccation tolerance, high stomatal conductance, and maintenance of photosynthesis. Escape is achieved by early flowering, early maturity, high leaf N₂ level, high photosynthetic capacity, and remobilization.

The mechanisms of drought stress are well documented (Babu, 2017) 28 (Babu, 2013). The mechanisms of drought stress are well documented (Babu, 2019). The mechanisms of drought stress are well documented (Babu, 2018) 29 . The mechanisms of drought stress are well documented (Babu, 2014). The mechanisms of drought stress are well documented (Babu, 2014).

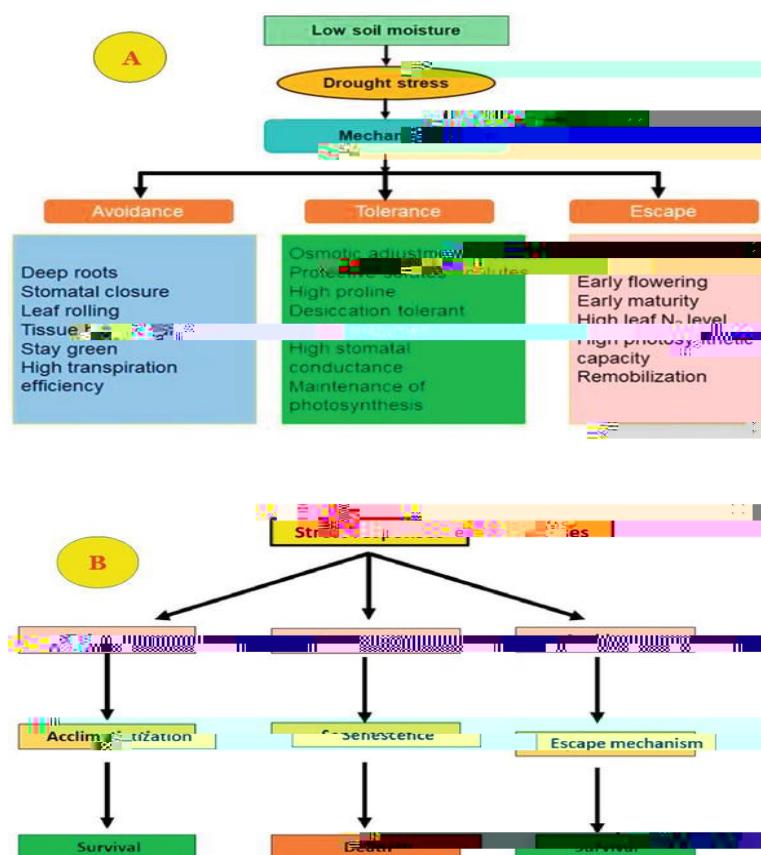


Figure 2: The diagram illustrates the mechanisms of drought stress and its mitigation strategies. It shows the progression from low soil moisture to drought stress, leading to three main strategies: Avoidance, Tolerance, and Escape. Each strategy is associated with specific physiological and biochemical mechanisms. Part B shows the relationship between stress responses and survival outcomes.

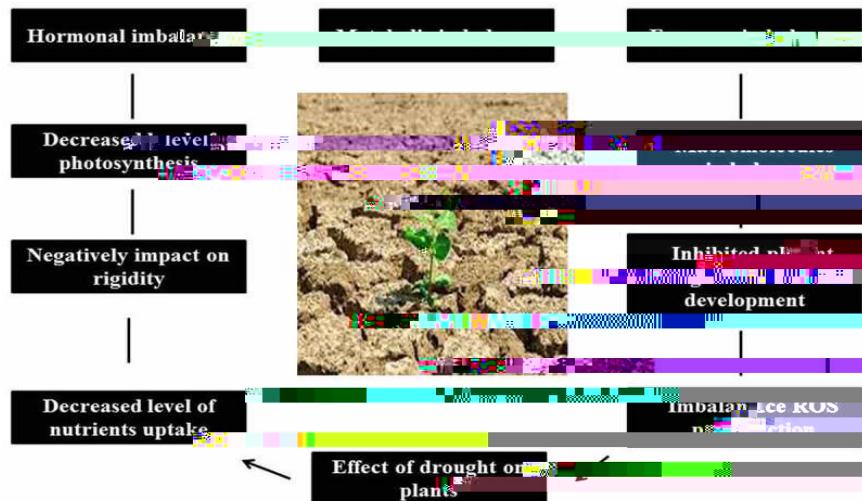


Figure 3: Effect of drought on plants

and 2019) 30.

E. *Effect of drought on plants*

Effect of drought on plants is one of the major factors that affect crop production. Drought stress can cause significant yield reductions in various crops (Kumar et al., 2012).

Yield reduction due to drought stress in wheat has been reported by several researchers (Kumar et al., 2020; 2020).

Wheat yield reduction due to drought stress was reported to be 31% (Kumar et al., 2020).

C. *Impact of drought on Maize*

Impact of drought on maize yield was reported to be 70% (Kumar et al., 2015) 32.

Impact of drought on maize yield was reported to be 70% (Kumar et al., 2015).

Impact of drought on maize yield was reported to be 70% (Kumar et al., 2020).

Impact of drought on maize yield was reported to be 70% (Kumar et al., 2020).

D. *Impact of drought on Sorghum*

Impact of drought on sorghum yield was reported to be 70% (Kumar et al., 2014).

Impact of drought on sorghum yield was reported to be 70% (Kumar et al., 2006).

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Impact of drought on sorghum yield was reported to be 70% (Kumar et al., 2009).

(Laliberte et al., 2012). The first step is to identify the types of droughts and their characteristics.

III. READING AND WRITING

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radical ($\cdot\text{OH}$) and peroxide anion (O_2^-), as well as non-radical (2004). (2016).

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the yield reduction was 10% to 15%.
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D. Drought

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the soil surface, which can lead to significant water loss through evaporation. This results in reduced soil moisture availability, particularly during the growing season when plants require the most water. Drought stress can also reduce root growth, limiting the plant's ability to access deep soil moisture reserves. As a result, crops may experience stunted growth, reduced yield, and even death if they are unable to find enough water to sustain their metabolic processes. Drought can also affect the quality of the crop, leading to lower protein content and other nutritional deficiencies. In addition, drought can have long-term effects on soil health, such as increased soil salinity and erosion, which can further compromise crop production in the future.

There are several mitigation strategies that can help reduce the harmful effects of drought on crop production. One effective approach is to implement irrigation systems that provide targeted water delivery to the root zone of the crop. This can be achieved through drip irrigation, micro-sprinklers, or center pivot irrigation systems. Another strategy is to use drought-resistant crop varieties that have been bred to withstand low-water conditions. These varieties often have deeper root systems and more efficient water-use efficiency. Other mitigation measures include soil conservation practices like no-till agriculture, which reduces soil erosion and maintains soil moisture levels. Cover cropping and mulching can also help retain soil moisture and reduce evaporation. Finally, improving irrigation management by scheduling irrigation based on soil moisture levels and weather forecasts can help ensure that water is used efficiently and effectively.

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