CLIMATE CHANGE

Intercropping as a method to increase resilience to drought

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European agriculture is facing an increasing frequency of drought events, with negative impacts on agricultural productivity and farmer's finances. Agricultural practices that are more resilient to drought are therefore needed. A wide range of crops are inherently more tolerant to drought and could potentially substitute current crop species. However, many of those crops provide only niche products and do not fulfil the market needs.

Mixture cropping of drought tolerant species with more drought-sensitive species demanded by the market can provide a solution to this. Drought tolerant crops can enhance soil water conditions to the benefit of themselves and their companion crop. The main mechanisms include shading and reduced evaporative water loss from the soil surface, or deep root systems that can tap into otherwise unavailable water sources. Increased shading can be achieved through low growing, relatively large-leaved crops (e.g., squash, lentil) while access to deep water sources can be achieved through deep-rooting crops, including perennial species (e.g., trees) and annual plants (e.g., lupin). Therefore, intercropping of cash crops such as wheat or maize with broad-leaved squash or deep-rooting trees can ameliorate drought stress for the cash crop.

In DIVERSify, we have explored the drought tolerance of different crop species and how being grown in different mixture combinations can affect this.

> Find out more, including references, at: plant-teams.org

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