Exame de Proficiência 2015.3

Inglês

Ciências Agrárias

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9	Você dispõe de, no máximo, três horas, para responder as 5 questões que constituem a Prova.
10	Antes de retirar-se definitivamente da sala, devolva ao Fiscal este Caderno.

Assinatura do Candidato: ____

As questões de 01 a 05, cujas respostas deverão ser redigidas EM PORTUGUÊS, referem-se ao texto abaixo.

RESPONSE OF SHORT DURATION TROPICAL LEGUMES AND MAIZE TO WATER STRESS: A GLASSHOUSE STUDY

Hossain Sohrawardy and Md. Lokman Hossain

Introduction

Water is the most common limiting factor to primary productivity in arid and semiarid areas. Areas with higher precipitation in a region have more above-ground primary productivity. Water-use efficiency is often equated with drought resistance and the improvement of crop yield under stress conditions. Water has an influence on grain yield and yield contributing parameters. Canopy development is sensitive to water deficit. Water stress is one of the most important factors for legumes production. It affects not only the production of the grains but also the whole process of growth of all organs of the plants and metabolism. Plant growth and development are affected by water stress affecting physiological and biochemical processes, for example, ion uptake, photosynthesis, respiration and translocation. Environmental stresses such as drought, salinity, heat, and cold represent a significant constraint to meet the world food demand, for example, Islamic Republic of Iran, especially under low precipitation (often <250 mm per annum). Furthermore, the uneven temporal and spatial distributions have diode agronomists to pick the foremost effective irrigation strategies or drought tolerant cultivars.

Grain legumes are a major source of protein in arid and semiarid regions of the world and play a key role in the economies of arid and semiarid regions. Multipurpose (dual purpose) legumes provide fodder, forage, green manure, seeds, and leaves that are used in human food. Cowpea (Vigna unguiculata L.) and lablab (Lablab purpureus L.) widely cultivated in the tropics have multipurpose uses. L. purpureus has been comparatively neglected in analysis and development and consequently our information of its genetic diversity is proscribed.

Legumes fix atmospheric nitrogen and are important to restore soil fertility. Legumes also play important role in breakdown of disease cycles, improve physical structure of soil, encourage microorganisms, and release available phosphorus to the soil.

Morphological and physiological understanding of legumes could be useful for selecting varieties to obtain better yield under drought conditions. The response of plants to water stress varies considerably and depends upon the intensity and duration of stress as well as of genotype and growth stages of the plant. Understanding plant response to drought is important and essential to develop drought tolerant crops.

Conclusion

Water is the most limiting factor for agricultural production in particular in the semiarid areas of the world. Legumes are of great importance for food security particularly in the developing world. Furthermore, they have the ability to improve soil fertility in resource constraint small holder farming systems. Drought is the most limiting environmental factor for the productivity of crops in primarily rain-fed based farming systems of semiarid areas. Plant developed totally different methods to avoid or minimize drought stress. The study examines responsiveness of three legumes and Z. mays to water stress. Significant difference was observed in different plant species with increase of different water regimes. L. purpureus showed better response in water stress compared to the other species. P. vulgaris showed a negative effect on dry weight with increased water stress. Therefore, this study concludes that selection of crops in water stress condition is highly necessary to improve the crop production and ensure the agricultural and environmental sustainability.

Fonte*: Advances in Agriculture* [2356-654X]. [Adaptado].

Questão 1

Discorra sobre a relação entre a água e um cultivo produtivo, conforme explicitado pelos autores do texto.

Espaço para Resposta

Questão 2

Explique de que forma o estresse hídrico impacta no crescimento e desenvolvimento das plantas.

Espaço para Resposta

Questão 3

Descreva o papel das leguminosas de grão para as regiões áridas e semiáridas do planeta.

Espaço para Resposta

Questão 4

Explique do que depende a resposta das plantas ao estresse hídrico e em que reside a importância de se conhecer a morfologia e fisiologia das leguminosas, segundo os autores.

Espaço para Resposta

Questão 5

- Traduza o fragmento textual abaixo no espaço reservado para isso.
- Seu texto deverá apresentar clareza e estar bem articulado tanto em termos estruturais quanto de sentido.

The study examines responsiveness of three legumes and Z. mays to water stress. Significant difference was observed in different plant species with increase of different water regimes. L. purpureus showed better response in water stress compared to the other species. P. vulgaris showed a negative effect on dry weight with increased water stress. Therefore, this study concludes that selection of crops in water stress condition is highly necessary to improve the crop production and ensure the agricultural and environmental sustainability.

ESPAÇO DESTINADO AO TEXTO DEFINITIVO