

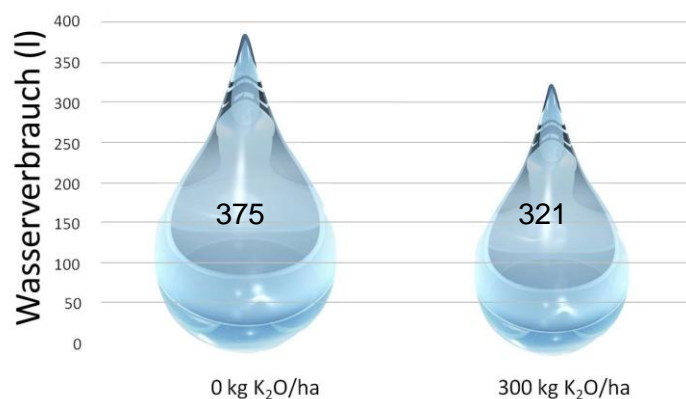
In modern, sustainable agriculture, water as a resource is used effectively, as

Water means Life

Why is our earth called “the blue planet”? Given that about 70 percent of the earth’s surface is covered with water, it is hard to imagine that water scarcity might become a challenge. Less than three percent, however, is usable freshwater. Furthermore, this valuable resource is unevenly distributed over the different regions of the world.

Water is only one of the resources that sustainable agriculture needs to take care of. And yet, particular attention is needed with regard to this resource, as water means life! Not without reason, the United Nations have declared that access to clean freshwater is a human right. Humans, however, do not need water just for themselves, as their food cannot be produced without. Indeed, most freshwater is used in agriculture, which accounts for approximately 70 percent of the global freshwater consumption. Besides the uptake of water from precipitation, almost 20 percent of the world’s cropping area is additionally irrigated.

In order to satisfy the growing demand for agricultural products in spite of the limited availability of freshwater, this resource has to be used very efficiently – also and particularly in the production of food. This leads to the question what can be done to improve water use efficiency of crops grown as food and feed in agriculture. Beyond the choice of appropriate crops and cultivars for a given region or site, improvements through plant breeding, or further adaption of cultivation practices, also plant nutrition can play a major role. A targeted supply with potash and manganese increases the yield per litre of water used. Such a supply of basic nutrients according to the demand of the crops allows for optimum development of the plants and in particular the plant roots, in turn allowing for increased water uptake from deeper soil zones. Potash also secures the function of the stomata in plant leaves, hence reducing unproductive transpiration losses. Also, the water storage capacity of soils can be increased following potash applications. Field trials in sugar beets revealed a reduction in water usage for the production of one kg white sugar by 54 litres, which equaled 14 percent.



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Research can contribute significantly to a resource efficient, sustainable agriculture for the benefit of consumers – and this is just one example.