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Limiting Factors to Plant Health

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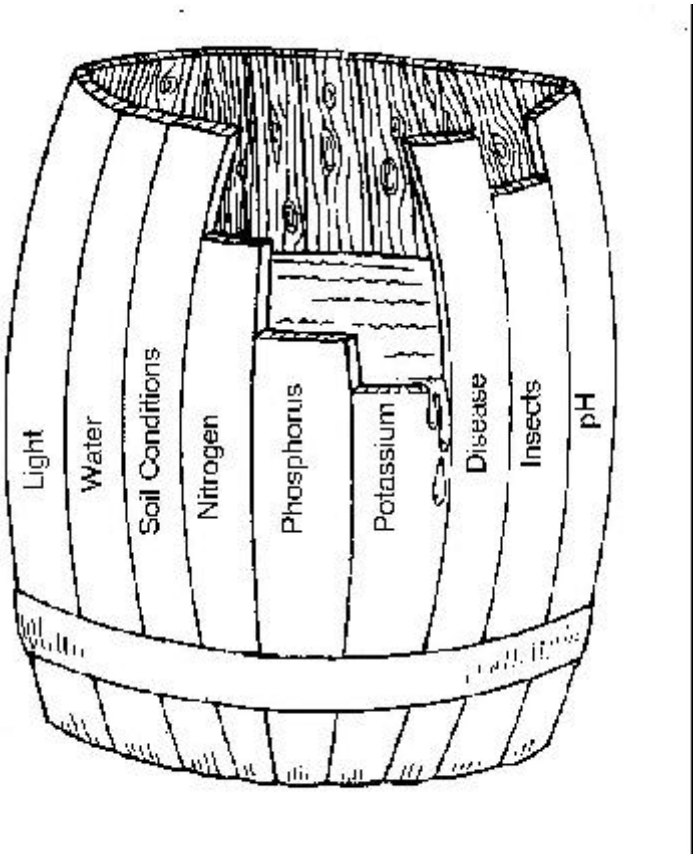
Many conditions must be met for a plant to achieve its full potential. Soil conditions, irrigation, temperature, light and nutrients must be suited to the particular plant. If any one of these conditions does not meet the needs of the plant, the growth and health of the plant will be limited. This is well illustrated by the concept of trying to fill a barrel with water. The boards that make up a barrel are called staves. Whichever stave (condition or nutrient) is shortest (in shortest supply) will limit the amount of water (the health of the plant) that the barrel will hold. The shortest stave, therefore becomes the limiting factor.



In the picture of the barrel at the right, the nutrient potassium is the limiting factor. If potassium can be added to the plant in question, the next limiting factor will be phosphorus. If all the conditions required by a plant are met, the picture would change to show a complete barrel. In other words, the barrel (the plant) could then be filled with water (achieve its full potential). This is a very useful concept when attempting to diagnose plant problems.

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