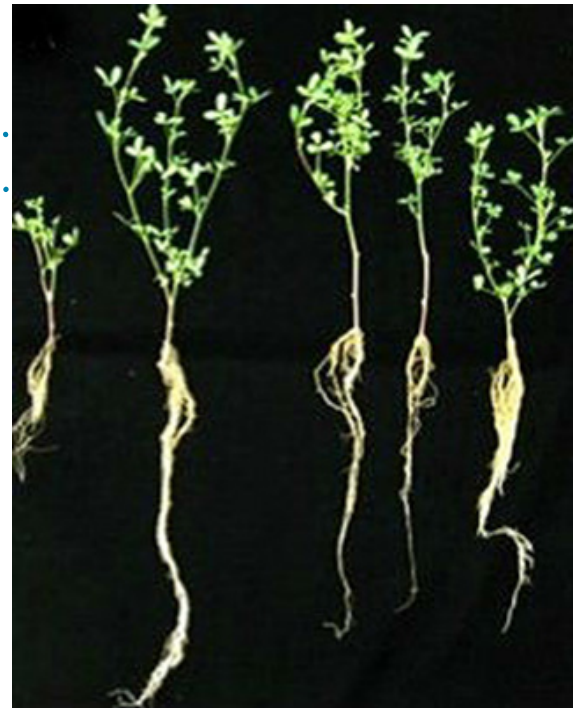
Transgenic Legumes
Overexpression of Sucrose Phosphate Synthase in Alfalfa



CLAIM:

Genetically engineered legumes that have an increased capability to fix atmospheric nitrogen and increased nitrogen use efficiency. This produces plants with increased growth rates, higher biomasses, and an increased tolerance to drought.

OVERVIEW:

- The transformants exhibited **superior growth** and the leaves are more intense green in color.
- The plant height of the transformants was more than 80% that of the non-transformed plants.
- The **flowering time is ~ 3 weeks ahead** of non-transformed plants

NOVELTIES:

- The multiple traits described above can be acquired by engineering a few key genes in relatively short period of time, in contrast to traditional breeding. Can provide genetic markers for breeding for superior performance.
- Improvement in nitrogen use efficiency in plants has not been accomplished using breeding techniques

FEATURES:

- This genetic engineering approach can be used in any leguminous plant to obtain a similar outcome.
- The approach can also be used to increase fruit and seed yields.

INVENTOR(S) EXPERTISE

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