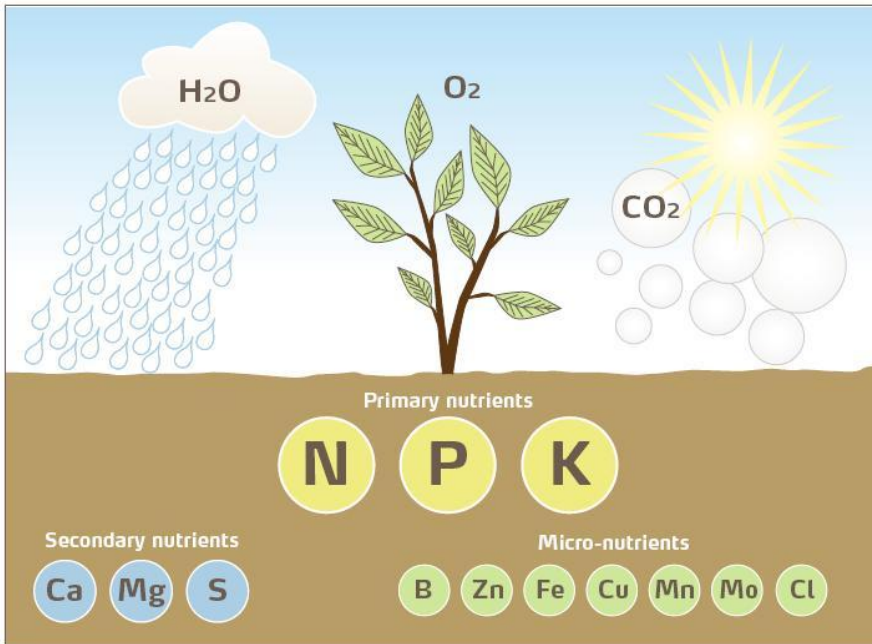


ALFALFA NUTRIENT REQUIREMENTS

Mike Ottman
Extension Agronomist
University of Arizona, Tucson

Primary, secondary and micro-nutrients



ALFALFA FERTILIZER REQUIREMENTS IN ARID REGIONS

Element	Symbol	Fertilizer required
Phosphorus	P	More than 25% of acreage
Potassium	K	Less than 25% of acreage
Sulfur	S	Less than 25% of acreage
Molybdenum	Mo	Less than 25% of acreage
Nitrogen	N	Less than 1% of acreage
Boron	B	Less than 1% of acreage
Other	–	Never

(Source: Meyer et al., 2008)

NITROGEN DEFICIENCY

- **Conditions**
 - Poor nodulation
- **Diagnosis**
 - Few nodules on roots
- **Symptoms**
 - Small yellow plants mixed with tall green plants



PHOSPHORUS DEFICIENCY

- **Conditions**
 - Cold soils
- **Diagnosis**
 - Soil or tissue test
- **Symptoms**
 - Similar to slight water stress



POTASSIUM DEFICIENCY

- **Conditions**
 - Sandy soil
- **Diagnosis**
 - Soil or tissue test
- **Symptoms**
 - White spots around leaf margins



SULFUR DEFICIENCY

- **Conditions**
 - Sandy, low OM soil
 - Water low in S (ie. from snowmelt)
- **Diagnosis**
 - Tissue test
- **Symtoms**
 - Yellowing esp. of upper leaves



BORON DEFICIENCY

- **Conditions**
 - Low OM soil
- **Diagnosis**
 - Tissue test
- **Symptoms**
 - Yellow and red upper leaves



MOLYBDENUM DEFICIENCY

- **Conditions**
 - Low pH soil
- **Diagnosis**
 - Tissue test
- **Symptoms**
 - Yellowing esp. of older leaves



ALFALFA FERTILIZER FAQ_s

- Should I apply N fertilizer?
- Do seed coatings on alfalfa have a value?
- Are liquid or granular P fertilizers better?
- What time of year is best to apply P fertilizers?
- Is it better to apply P fertilizer annually or several times during the season?
- How long does it take P fertilizer to become unavailable in the soil?
- What are the chances that I have nutrient deficiency other than phosphorus?
- Is manure good for alfalfa?