

Resource Concerns

Plant Productivity and Health

Soil

Water

Air

Plants

Degraded Plant Condition

Plant Pests

Plant Productivity and Health

Structure and Composition

Wildfire Hazard

Animals

Energy

Degraded Plant Condition - Plant Productivity and Health

Plant productivity, vigor and/or quality negatively impacts other resources or does not meet yield potential due to improper fertility, management or plants not adapted to site.

What is it?

Plants established in the wrong climate or soil may be under stress and may never thrive, no matter how much fertilizer or water you supply. Natural events, such as drought, or mismanagement can cause plant stress. Plants under stress are more susceptible to disease and insect damage. Symptoms of poor plant vigor and health may include slow growth, discoloration of leaves, wilting or drooping foliage, leaf drop, and/or discolored roots.

Why is it important?

For plants to produce the expected yield, preferred products, or desired environmental outcomes they must be adapted to the site on which they are growing, provided with the appropriate amounts of nutrients, water, and sunshine, and protected from unchecked animal, weed, insect, and disease pests.

What can be done about it?

Management is the key to maintaining plant productivity and health. Check that the desired plant is suited to the climate, soil type, and intended use. Set realistic yield goals based on soil productivity information, historical yield data, climatic conditions, level of management, and/or local research on similar soil and cropping systems. The NRCS Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov>) is a source of soils information and their limitations for growing various crops. University Extension is a resource for nutritional, cultural, and management practices needed to keep plants healthy and productive. Nutrient management specifies the amount, timing, form, and method of application of nutrients needed to achieve realistic production goals. Integrated pest management specifies techniques to detect, avoid, and treat pests and diseases. Some causes of poor health and vigor may require the use of cover crops, the adoption of new crop rotations, or changes to tillage methods to address soil quality issues, such as soil compaction, poor drainage, low organic matter, or the presence of contaminants in the soil.

Plant Productivity and Health at a Glance

Problems / Indicators - Yield or growth is substantially less than expected, plants are disease and/or pest-ridden, plants fail to thrive	
Causes	Solutions
<ul style="list-style-type: none"> Plants receive inadequate nutrition during critical growth periods Plants fail to thrive due to poor soil conditions Plants wilt, freeze or rot even during normal climate conditions Plants not adapted to site 	<ul style="list-style-type: none"> Use nutrient management to address the form, rate, placement, and timing of nutrient application Consider crop rotations, deep rooted cover crops, drainage, and deep tillage Consider alternate crops or different plant varieties