

Field Notes

Current field management
(tillage, fertilizer, irrigation, crop rotation, other)

Ideas for changes in field management



USDA Soil Quality Institute
Natural Resources Conservation Service

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Willamette Valley Soil Quality Card



Developed by
Willamette Valley farmers
in collaboration with:

- local Soil and Water Conservation Districts
- USDA Natural Resources Conservation Service Soil Quality Institute
- Oregon State University



The soil quality assessment card was developed by farmers in collaboration with the Natural Resources Conservation Service (NRCS), local soil and water conservation districts, and Oregon State University (OSU). It is a locally adapted field tool for farmers, educators, and agricultural support professionals such as soil conservationists, Extension agents, or agriculture industry personnel.

Regular use will allow you to assess current soil quality condition, record changes in soil quality, and compare fields and management practices. The card is most effective when filled out by the same person over time. It provides you with a qualitative assessment of the soil. Evaluation scores do not represent absolute measures or values. Use the card in more than

one spot in your field to obtain a more representative assessment.

The *Willamette Valley Soil Quality Card Guide* was developed in conjunction with this card. It includes detailed information about each indicator listed on the card. The guide also contains techniques for making further judgments about each factor.

The *Willamette Valley Soil Quality Card* (EM 8711, pads of 25) and the *Willamette Valley Soil Quality Card Guide* (EM 8710) are available from your local OSU Extension Service, NRCS, or Soil and Water Conservation District office, or from Extension & Station Communications, Oregon State University, 422 Kerr Administration, Corvallis, OR 97331-2119 (phone: 541-737-2513). Please call for current prices.

Suggested Assessment Calendar

Indicator	Before planting	Active crop growth		Late fall	Winter
	Early spring	Spring	Summer/Fall		
1. Soil structure and tilth	✓	✓	✓	✓	
2. Compacted layers	✓	✓	✓	✓	✓
3. Workability		✓		✓	
4. Soil organisms	✓	✓		✓	✓
5. Earthworm abundance	✓	✓		✓	✓
6. Plant residue	✓	✓	✓	✓	✓
7. Plant vigor		✓	✓		
8. Root growth		✓	✓		
9. Water infiltration	✓	✓	✓	✓	✓
10. Water availability		✓	✓		

Management, crop, and climatic factors determine the optimum time of soil quality assessment. The assessment times in this calendar are appropriate for the Willamette Valley of western Oregon.

Willamette Valley Soil Quality Card

Date: _____ Crop: _____
 Field location: _____ Year of planting: _____

Soil moisture: Good for planting
 Too dry for planting
 Too wet for planting

Indicator	Preferred										Observations	Rating the indicator		
	1	2	3	4	5	6	7	8	9	10		1	5	10
1. Does the soil have good structure and tilth?												Cloddy, powdery, massive, or flaky	Some visible crumb structure	Friable, crumbly
2. Is the soil free of compacted layers?												Wire flag bends readily; obvious hardpan; turned roots	Some restrictions to penetrating wire flag and root growth	Easy penetration of wire flag beyond tillage layer
3. Is the soil worked easily?												Many passes and horsepower needed	Medium amount of power and passes needed	Tills easily; requires little power to pull tillage implements
4. Is the soil full of living organisms?												Little or no observable soil life	Some (moving) soil critters	Soil is full of a variety of soil organisms
5. Are earthworms abundant in the soil?												No earthworms	Few earthworms, earthworm holes, or casts	Many earthworms, earthworm holes, and casts
6. Is plant residue present and decomposing?												No residue or not decomposing for long periods	Some plant residue slowly decomposing	Residue in all stages of decomposition; earthy, sweet smell
7. Do crops/weeds appear healthy and vigorous?												Stunted growth, discoloring, uneven stand	Some uneven, stunted growth; slight discoloration	Healthy, vigorously and uniformly growing plants
8. Do plant roots grow well?												Poor root growth and structure; brown or mushy roots	Some fine roots; mostly healthy	Vigorous, healthy root system with desirable root color
9. Does water infiltrate quickly?												Water on surface for long periods after light rain	Water drains slowly; some ponding	No ponding after heavy rain or irrigation
10. Is water available for plant growth?												Droughty soil, requires frequent irrigation	Moderate degree of water availability	The right amount of water available at the right time
Other														

How to use the card

1 Enter date, location, crop, year of planting (if perennial crop), and soil moisture level in the field. Select 1–5 representative spots in the field.



2 Use a shovel or a wire flag to probe the soil. Rate each indicator on a scale from 1 to 10. Refer to the rating guide to determine the score for each indicator.



3 Record your observations. Review and evaluate your scoring.



4 On the back page, write down current management practices. Record ideas for changes in management that you will implement as a result of your assessment.

