

# Soil Colour: More Than Meets the Eye



**Soil colour palette:** Soils come in a wide range of different colours. These vary with depth and across space and are a reflection of the soil forming factors and processes. Soil colours are used to identify and classify soil, characterize soil physical, chemical and biological properties, and provide insight into soil processes. Soil colour can be measured through visual observations or by using instruments such as spectroradiometers.

## Blues & Greys



### Gleying

Prolonged waterlogged (anaerobic) conditions

## Yellows & Oranges



### Mottling

Fluctuating water table (anaerobic & aerobic)

## Blacks & Browns



### Organic matter

Accumulation of organic matter makes the soil darker

## Whites

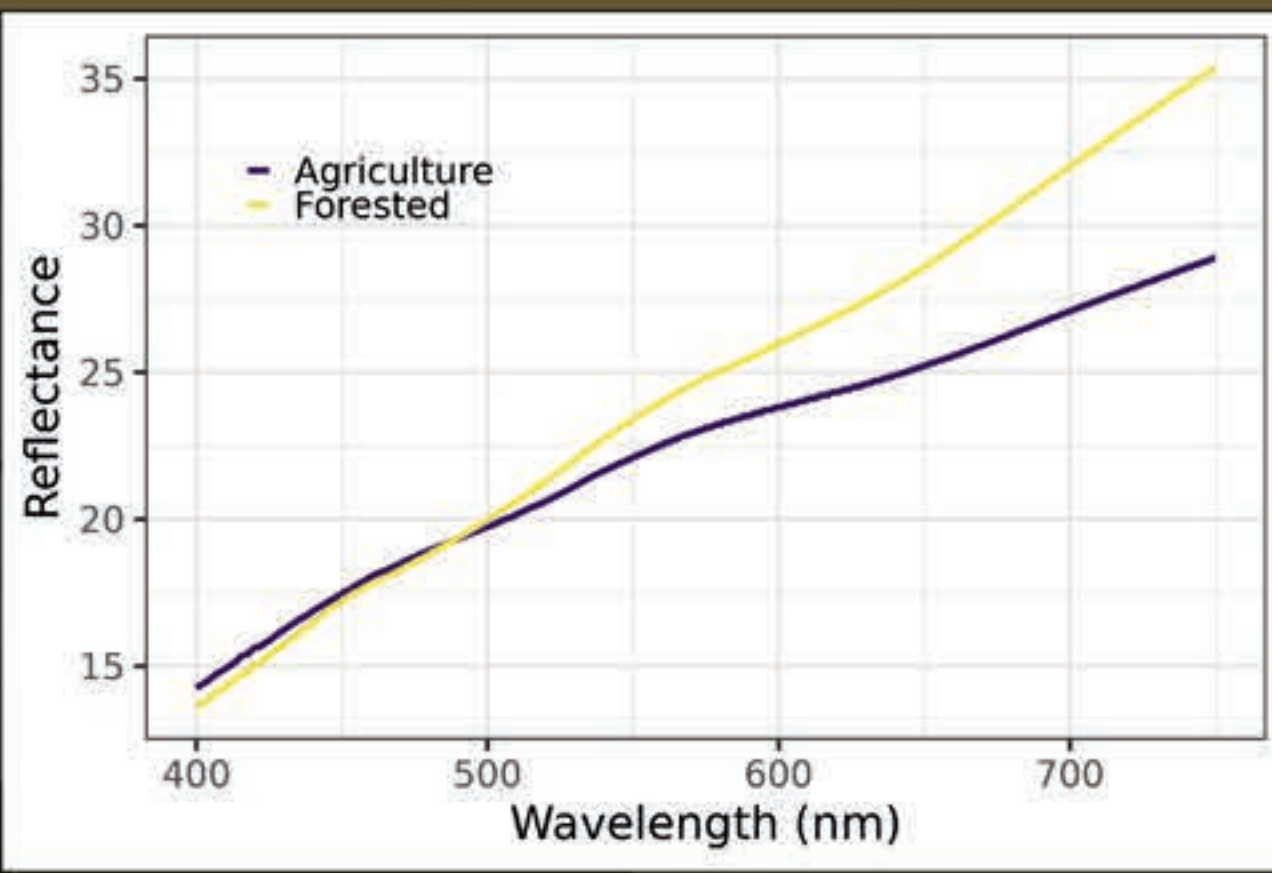


### Translocation

Eluviation (loss) & illuviation (gain) of carbonates & salts

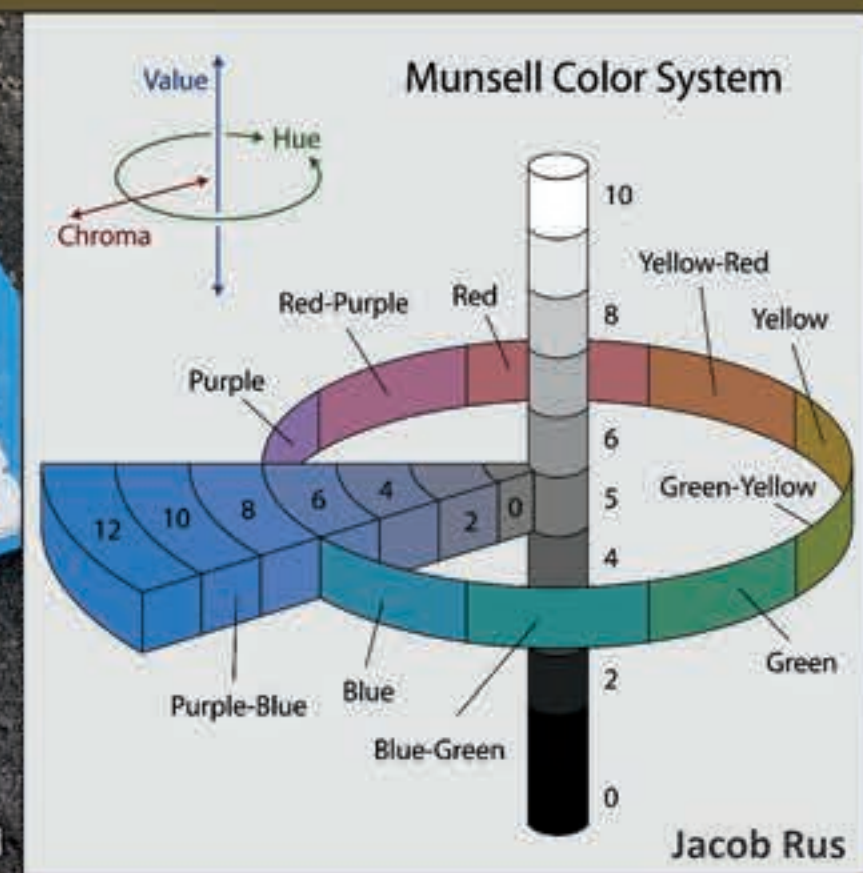
## Spectroradiometer

Spectroradiometers are precise instruments which measure the reflectance of light from a soil sample across different wavelengths. Using different colour space models, these data can be used to calculate a range of colour metrics (e.g., RGB values, lightness, etc.), which are used in studies where precision is important.



## Munsell Soil Colour Chart

Developed by Albert Munsell in the early 20<sup>th</sup> century, the colour chart is used to visually match colours based on hue, value, and chroma. These properties are used descriptively to identify and classify soils.



2023 <sup>Ah</sup> **Nutrien**



### JANUARY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

### FEBRUARY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

### MARCH

S	M	T	W	T	F	S
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

### APRIL

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						1
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16	17	18	19	20	21	22
23	24	25	26	27	28	29

### MAY

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21	22	23	24	25	26	27
28	29	30	31			

### JUNE

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18	19	20	21	22	23	24
25	26	27	28	29	30	

### JULY

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16	17	18	19	20	21	22
23	24	25	26	27	28	29

### AUGUST

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19	20	21	22	23	24	25
26	27	28	29	30	31	

### SEPTEMBER

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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

### OCTOBER

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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

### NOVEMBER

S	M	T	W	T	F	S
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16	17	18	19	20	21	22
23	24	25	26	27	28	29

### DECEMBER

S	M	T	W	T	F	S
						1
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Manitoba Soil Science Society

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