

## Crop Coefficients (Kc)

Crop Coefficients vary by the type of crop, stage of growth, and sometimes due to variety. Researchers in Texas and many other locations have developed detailed crop coefficients. Below are the Texas crop coefficients for corn (maize) and soybeans.

Texas High Plains Crop Coefficients

<b>Corn (Maize)</b>	
<b>Growth Stage</b>	<b>Crop Coefficient</b>
<b>Seed</b>	0.25
<b>Emergence</b>	0.35
<b>2-leaf</b>	0.45
<b>4-leaf</b>	0.70
<b>6-leaf</b>	0.85
<b>8-leaf</b>	1.0
<b>10-leaf</b>	1.15
<b>12-leaf</b>	1.20
<b>14-leaf</b>	1.25
<b>Tassel</b>	1.25
<b>Silk</b>	1.30
<b>Blister</b>	1.30
<b>Milk</b>	1.30
<b>Dough</b>	1.0
<b>Dent</b>	0.90
<b>Black Layer</b>	0.70
<b>Maturity</b>	0.0

<b>Soybeans</b>	
<b>Growth Stage</b>	<b>Crop Coefficient</b>
<b>Seed</b>	0.38
<b>Emerged</b>	0.55
<b>Vegetative-2</b>	0.60
<b>Vegetative-3</b>	0.68
<b>Vegetative-4</b>	0.70
<b>Vegetative-5</b>	0.80
<b>Vegetative-6</b>	0.84
<b>Vegetative-10</b>	0.90
<b>Vegetative-12</b>	0.95
<b>Reproductive-2</b>	1.04
<b>Reproductive-3</b>	1.11
<b>Reproductive-4</b>	1.13
<b>Reproductive-5</b>	1.16
<b>Reproductive-6</b>	1.0
<b>Physiological Maturity</b>	0.38
<b>Harvest</b>	0

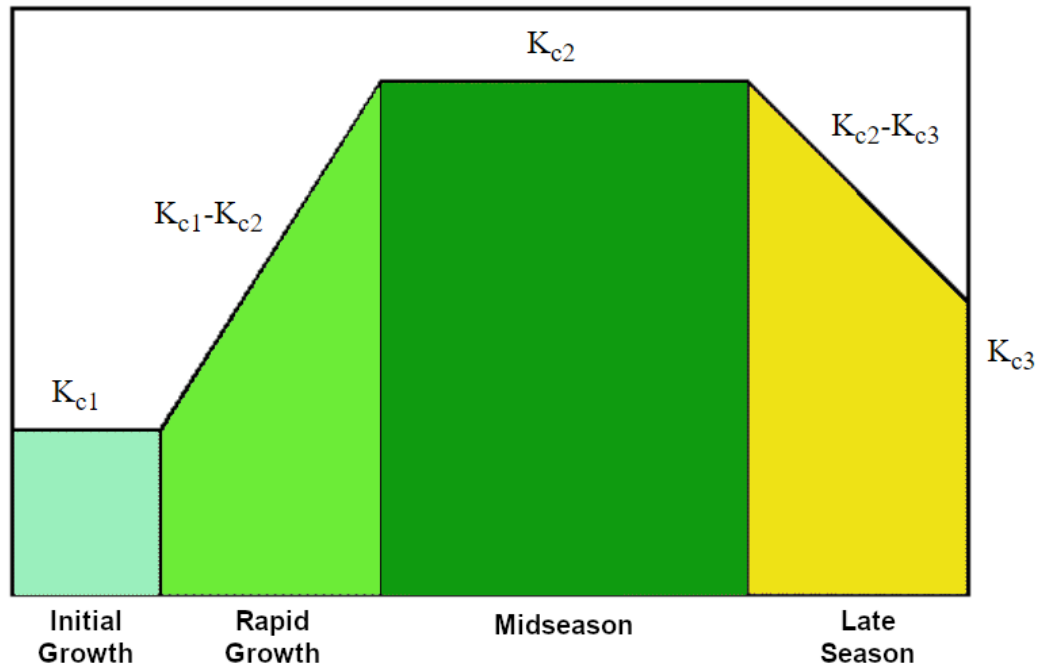
### FAO General Crop Coefficients

FAO (Food and Agricultural Organization, United Nations) has published general crop coefficients which are widely used throughout the world. FAO coefficients divide the growth stag of crops into four general growth period:

1. Initial
2. Rapid Growth
3. Mid- season
4. Late Season.

See the chart below for details

## Generalized Crop Coefficients and Crop Growth Stages



Kc Values	Growth Stage	Description
Kc1	Initial	The average Kc value from planting to about 10% ground cover
Kc1-Kc2	Rapid Growth	From 10% ground cover to 75% cover or to peak water use, whichever comes first
Kc2	Mid-Season	The average value from the end of the rapid growth stage until water use begins to decline due to crop aging
Kc2-Kc3	Late-Season	From when Kc begins to decline until harvest or when water use ceases or becomes minimal
Kc3	Harvest	The average value at harvest or the end of the water use season

NOTE: For the rapid growth and the late season stage, it is assumed that Kc values increase or decrease linearly with time

### Published FAO Crop Coefficients

FAO Crop Coefficients

Crop	Kc Initial	Kc Mid-Season	Kc-End
Maize	0.3	1.2	0.6-0.35
Soybeans	0.4	1.15	0.5
Dry Beans	0.4	1.15	0.35