XfrogPlants | Agriculture

Wheat

Lettuce
XfrogPlants AGRICULTURE

Contents:

180 3D Models in: Maya, 3ds Max, Vue, Lightwave, Cinema 4D, .OBJ, .3DS and .XFR formats
XFR can be edited with Xfrog 3.5 software (Purchased Separately)

With Xfrog 3.5 Procedural Software, easily create your very own variations
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180 1600 x 1600, Billboard Renders (with Alpha)
180 1600 x 1600, Perspective Renders (with Alpha)

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Xfrog User Group:  tech.groups.yahoo.com/group/Xfrog

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Annual grass

**Height:** up to 90 cm.
**Origin:** Mediterranean
**Environment:** open fields, on well-drained soils; can grow even on nutritionally poor ground
**Climate:** temperate, cool; frost resistant

**Notes:**
Oats are common today as human food as they are as fodder for animals, but in the Ancient and Middle Ages they were only used to feed animals, because they were believed to be a mediocre unworthy food. Oats are really healthy food, especially because of their cholesterol-lowering properties. In Scotland Oats are highly esteemed and a part of the national diet. Oats are grown throughout the temperate zones. They have a lower summer heat requirement and greater tolerance of rain than other cereals like wheat, rye or barley.
01. Oats (Avena sativa)
Variation 1
24 cm

Variation 2
26 cm

Variation 3
33 cm

Variation 4
40 cm

01. Oats (Avena sativa)

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02. Tea (*Camellia sinensis*)

Tree/Shrub, broadleaf evergreen, broad spreading

**Height:** up to 3 m in cultivation (up to 20 m wild)  
**Origin:** China, Southeast Asia  
**Environment:** hillsides, open woodland  
**Climate:** warm and humid

**Notes:**  
The Tea plant is usually a shrub or small tree. In cultivation, it is kept at an average height of 3 meters and in a spreading shrub posture (subspecies Sinensis). But in the wild, the subspecies Assamica can grow up to 20 meters! More than 3000 different types of tea are created blending the leaves of different varieties of this tree. The Tea infusion was invented in China, but soon became the favourite drink of Japanese Buddhist monks. World tea production is 3.15 million tonnes annually. The primary producer is China, followed by India.
02. Tea (Camellia sinensis)

Variation 5
89 cm

Variation 6
114 cm

Variation 7
138 cm

Variation 8
149 cm
Variation 1: 57 cm
Variation 2: 63 cm
Variation 3: 85 cm
Variation 4: 88 cm

02. Tea (*Camellia sinensis*)
03. Chile Pepper (Capsicum annuum)

Perennial plant, often cultivated as annual

**Height**: up to 150 cm  
**Origin**: Central and Southern America  
**Environment**: sunny plains and hillsides; on rich, fertile, well-drained soils  
**Climate**: hot, warm; frost-intolerant  

**Notes**:  
Although native of dry hot climates, the Chili Pepper plant (in it's many varieties) can grow well also in temperate regions, as long as it is protected from frost. It can be an ornamental plant but it is mainly cultivated for the fruits, that can be long and narrow, or short and roundish, and are a much appreciated hot spice in many kitchen recipes. They also have antiseptic properties. China is, by far, the largest producer of Chili Peppers, followed by Mexico, Turkey, and United States.
03. Chili Pepper (Capsicum annuum)
03. Chili Pepper (Capsicum annuum)

Variation 1
34 cm

Variation 2
61 cm

Variation 3
64 cm

Variation 4
67 cm
Perennial shrub/small tree

**Height**: up to 5m (usually 2m) in cultivation, up to 12m wild
**Origin**: Ethiopia (Kaffa region)
**Environment**: highland Savannah
**Climate**: warm and dry; cold-tolerant but frost-intolerant

**Notes**: Coffee is a small tree or shrub native of the Kaffa region of Ethiopia (hence the name). It grows best in the native conditions (1300-1500 meters altitude, at average temperature of 20° C), but it is also cultivated everywhere in warm climates. In cultivation, it is usually trimmed at 2 meters height, to make harvesting easier. It was Arabians who made coffee a popular drink worldwide. In North America and Europe one cup of coffee is drunk every three glasses of tap water. About 7 million metric tons of coffee are produced annually worldwide.
Variation 9
141 cm

Variation 7
154 cm

Variation 6
138 cm

Variation 5
125 cm

04. Coffee (Coffea arabica)
Variation 4
128 cm

Variation 3
67 cm

Variation 2
57 cm

Variation 1
31 cm

04. Coffee (Coffea arabica)
05. **Artichoke** (*Cynara scolymus*)

Perennial Plant

- **Height**: up to 2 m
- **Origin**: Mediterranean
- **Environment**: fertile soils, in full sun; requires regular irrigation; it does not survive freezing frost
- **Climate**: warm; moderately humid

**Notes:**
Artichoke is one of the world’s oldest cultivated vegetables. The common name comes from the Arabic word ardi shauk (groundthorn), which was transported into ancient Italian word articiocco and from there into all western languages. Caterina de’ Medici introduced the Artichoke to France and from there it was spread worldwide. The plant has important medical qualities, especially as liver protector. Today, Artichoke is widely cultivated in other warm areas of the globe such as California where it is a very large crop.
05. Artichoke (*Cynara scolymus*)
05. Artichoke (Cynara scolymus)

Variation 1
34 cm

Variation 2
43 cm

Variation 3
43 cm

Variation 4
48 cm

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Perennial plant

**Height:** up to 30 cm.

**Origin:** garden crossover of Fragaria Virginiana (Virginia Strawberry) and Fragaria chiloensis (Beach Strawberry)

**Environment:** light woodland, forest edges, on all soil types as long as moist and well-drained

**Climate:** temperate; humid

**Notes:**
The Garden Strawberry is the most widely cultivated strawberry worldwide, and must not be confused with the common wild strawberry, Fragaria vesca (Woodland Strawberry), easily found in forests all over the Northern Hemisphere. The Strawberry, a member of Rosaceae family, was considered a flower of the Paradise and was commonly used in the arts as a symbol of Christ and the Trinity. The harvest period is mid April through May. Virtually the entire strawberry crop is hand-harvested.
06. Strawberry (Fragaria x ananassa)
Variation 1
33 cm

Variation 2
37 cm

Variation 3
44 cm

Variation 4
52 cm

06. Strawberry ( *Fragaria x ananassa*)
07. **Soybean ( *Glycine max.* )**

**Annual plant**

**Height**: up to 130 cm  
**Origin**: Eastern Asia (Japan, China)  
**Environment**: hillsides, fields; grows on many soils, as long as deep and fertile  
**Climate**: subtropical; warm, temperate; humid warm summers

**Notes**:
The Soybean (a.k.a. Soya) is a leguminous plant whose cultivation started as food crop for animals, but recently became increasingly important for human food, to make oil, margarine, flour, milk, and even as meat substitute. Soybean is the richest natural vegetable food, almost complete in nutrients. The United States is the world's leading soybean producer and exporter. Farm value of U. S. soybean production in 2003/04 was $18.0 billion, the second-highest value among U.S.-produced crops, trailing only corn. Soybeans equal about 90% of U.S. total oilseed production.
Variation 9
100 cm

Variation 8
94 cm

Variation 6
77 cm

Variation 5
71 cm

07. Soybean (Glycine max.)
Variation 4
55 m

Variation 3
30 m

Variation 2
24 m

Variation 1
12 m

07. Soybean (Glycine max.)
08. **Cotton** (*Gossypium hirsutum*)

**Annual plant**

**Height**: up to 40 cm.

**Origin**: Pantropical (uncertain)

**Environment**: open fields, in full sunlight; on neutral or calcareous soils

**Climate**: tropical, warm; dry; salt-resistant but frost-intolerant

**Notes**: Cotton is one of the most industrially important plants of the world. The fiber is used in the textile industry, to produce all kind of clothes. The seeds are used for the oil (food and soap use), and the by-products are used in the animal food industry. The Cotton cultivation needs little water but requires warm and constantly increasing temperatures from germination to the final opening of capsules, and is therefore only possible in tropical or subtropical areas. United States are the 3rd world producer of Cotton, after China and India, but are the leading exporter, before Uzbekistan and India.
08. Cotton (Gossypium hirsutum)
Variation 1
15 cm

Variation 2
26 cm

Variation 3
38 cm

Variation 4
45 cm

08. Cotton (Gossypium hirsutum)
09. Barley ( *Hordeum vulgare*)

**Annual grass**

**Height:** up to 1 mt, sometimes more  
**Origin:** Near and Middle East (Mesopotamia)  
**Environment:** plains, highlands and hillsides  
**Climate:** warm, temperate, cool; dry; tolerates extreme temperatures as long as humidity is low  

**Notes:**
Barley is the fourth cereal crop in the world. It is largely used as cattle food, but it also has important properties for human health: it re-mineralizes bones and helps prevention of heart, lungs and stomach diseases. The Malt (germinated Barley) is the basic ingredient to produce beer since the ancient Babylon times! It is also a well-known symbol of abundance and fertility, especially male.
09. Barley (*Hordeum vulgare*)

Variation 9
120 cm

Variation 7
122 cm

Variation 5
106 cm

Variation 6
103 cm
Variation 4
108 cm

Variation 3
67 cm

Variation 2
51 cm

Variation 1
43 cm

09. Barley (Hordeum vulgare)
10. Lettuce ( *Lactuca sativa*)

**Annual or Biennial plant**

**Height**: up to 90 cm.

**Origin**: Mediterranean

**Environment**: open land; in full sun or half shade; on fresh, rich, fertile well-drained soil

**Climate**: warm, temperate; cold-resistant

**Notes**: An ancient crop, Lettuce was used for food in the Mediterranean basin for at least 4500 years. The name "Lactuca" comes from Latin lactis (milk), and hints at the milkish white juice of the plant, whose mild opiate-like properties were known by Romans and Egyptians, who used to eat Lettuce at the end of the meals to induce sleep. Lettuce is rich in minerals and their pigmented varieties also contain antioxidants. It is an important crop in Europe, but a minor one in the USA, with approximately 78,000 acres produced annually in California.
10. Lettuce (Lactuca sativa)
10. **Lettuce** (*Lactuca sativa*)
11. **Lavender** (*Lavandula angustifolia*)

**Perennial plant**

**Height**: up to 2 m (1 m outside native area)

**Origin**: West Mediterranean

**Environment**: in full sun; thrives on rich, deep, well-drained soil, but grows also on rocky arid terrains

**Climate**: warm, temperate; frost-intolerant

**Notes**: Lavender is a Mediterranean shrub that is cultivated worldwide because of the beautiful scented flowers. The name Lavanda is a Latin verb meaning "to be washed", and hints at the Latins' habit of using Lavender flowers to scent the water for washing themselves. Today, Lavender is mostly used for garden decoration, but essential oil and tea with curative properties are also produced. Lavender ranks high as a sustainable crop because it does not rely on pesticides and fertilizers.
11. Lavender (Lavandula angustifolia)

Variation 6
65 cm

Variation 7
65 cm

Variation 8
71 cm

Variation 9
72 cm
11. Lavender (Lavandula angustifolia)
12. Ryegrass ( *Lolium perenne*)

**Perennial grass**

**Height**: variable, from 10 to 40 cm.

**Origin**: Europe, Western Asia, Northern Africa

**Environment**: grasslands

**Climate**: temperate

**Notes**:
Ryegrasses exist in both annual and perennial varieties. The perennial species such as *Lolium perenne* are most suited to live in cool climates as they remain green the whole year. It's thick dense growth makes it ideal both for decorative gardens and for sports (golf courses), but it's also widely cultivated as pasture and forage plant. Unfortunately, it's also one of the most aggressive graminaceae to allergy-affected people. Ryegrass is the principal grazing grass in New Zealand where some 10 million kilograms of certified seed are produced every year.
12. Ryegrass (Lolium perenne)
Variation 4  
55 cm

Variation 3  
65 cm

Variation 2  
32 cm

Variation 1  
14 cm

12. Ryegrass (Lolium perenne)
12. Ryegrass (*Lolium perenne*)
Tobacco ( *Nicotiana tabacum*)

**Perennial plant**

- **Height**: up to 2 m (usually 1m)
- **Origin**: Central America
- **Environment**: highlands and hillsides
- **Climate**: temperate

**Notes**: Central American natives used to use Tobacco as hallucinogenic drug for ritual ceremonies, and also simply for food, long before the arrival of the Europeans. In Europe and North America Tobacco became quickly a highly successful plant, although even in the early times it's smoke was criticized as dangerous for the health. The cultivation of Tobacco was one of the main reasons that started the slaves commerce from Africa to North America. World tobacco production is projected to reach over 7.1 million tonnes of tobacco leaf in the year 2010, up from 5.9 million tonnes in 1997/99. The number of smokers is expected to grow of about 1.5 percent annually, up to 1.3 billion smokers in 2010.
13. Tobacco ( *Nicotiana tabacum*)
13. Tobacco ( *Nicotiana tabacum*)
**14. Rice** (*Oryza sp.*)

**Annual or Perennial grass**

- **Height**: up to 2 m (normally 1 m)
- **Origin**: tropical and sub-tropical Southern Asia, South-eastern Africa
- **Environment**: Humid plains; some species need to grow in a swamp environment
- **Climate**: warm, temperate; humid

**Notes:**
The Oryza genus of grasses includes 22 wild species and 2 cultivated species, of which *Oryza sativa* (Common Rice) is the most popular. Rice is the most cultivated and consumed cereal across the world, and therefore the most important food source for the human race. The cultivation requires a lot of irrigation, and for some species also a three month immersion in swamps; for this reason, rice is widely cultivated in high rainfall areas.
Variation 9
74 m

Variation 8
67 m

Variation 6
57 m

Variation 5
57 m

14. Rice (Oryza ssp.)
14. Rice (Oryza ssp.)
15. **Tomato** (*Solanum lycopersicum*)

**Annual plant**

**Height**: from 50 cm up to 2 m, depending on the posture  
**Origin**: Central and Southern America  
(from Mexico to Peru)  
**Environment**: fields, grasslands, sunny hillsides;  
in full sun  
**Climate**: warm, mild, temperate; frost-intolerant

**Notes**:  
Tomato belongs to the Solanaceae family of plants, that also includes Tobacco, Chili Peppers and Potato. The original Aztec name was Tomati. Even if known in Europe since the discovery of America, for a long time Tomato was considered poisonous and planted only for decoration. The first kitchen use is documented in an Italian recipe of the beginning of 18th century, and the first industrial production started in Parma around 1850. The tomato is today grown worldwide. A total 125 million tonnes per year are produced. The main producer is China with 31 tonnes per year.
15. Tomato (Solanum lycopersicum)
15. Tomato ( *Solanum lycopersicum* )

**Variation 1**
135 cm

**Variation 2**
131 cm

**Variation 3**
148 cm

**Variation 4**
144 cm

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15. Tomato (Solanum lycopersicum)
16. Sorghum (Sorghum bicolor)

Annual grass

Height: up to 6 m.
Origin: Southern Africa
Environment: open land; on many soils, from arid to waterlogged
Climate: hot and dry; can also grow in cool and humid regions

Notes:
Sorghum is a big and densely seeded grass which grows in the South of Africa. Although native of hot dry areas, it can grow practically everywhere. There are many cultivars of this species (the last verified number is 571). Sorghum comes in two main variants: White Sorghum, sweeter, grain crop, good for human food, and Red Sorghum, less tasty, good for making beer and as cattle fodder.
Variation 9
257 cm

Variation 8
250 cm

Variation 7
238 cm

Variation 6
188 cm

16. Sorghum (*Sorghum bicolor*)

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16. *Sorghum* (*Sorghum bicolor*)

Variation 1
26 cm

Variation 2
64 cm

Variation 3
139 cm

Variation 5
241 cm
17. Spinach ( *Spinacia oleracea*)

**Annual herb**

**Height**: up to 30 cm.
**Origin**: Central and Southwestern Asia
**Environment**: open fields; on fertile sandy loams, high in organic matter; needs moist at ground level
**Climate**: temperate, warm; humid

**Notes**: Spinach was cultivated in Iran over 2000 years ago. Cultivation in Europe started with Greeks and Romans. The name derives from the Persian word ispanai (green hand) which became spinachia in Latin. The Arabs named it "Prince of Vegetables". Spinach can have about double iron content than average vegetables. Their shallow roots can not reach deep water, thus their cultivation requires constant irrigation.
17. Spinach (Spinacia oleracea)
17. Spinach ( *Spinacia oleracea* )
18. Wheat (Triticum ssp.)

Annual grass

Height: up to 80 cm.
Origin: Southwest Asia
Environment: open fields, in full sunlight
Climate: warm, temperate

Notes:
Wheat is cultivated worldwide and ranks as the second largest cereal crop behind Corn. From its flour, bread, pasta, cakes and cookies are made all over the world. The plant is also used for fermentation, to make beer, alcohol, vodka. The cultivation of Wheat dates back to the Neolithic period! Today, the production of wheat is insufficient to cover the needs of mankind. 2006 was the first year when the demand of wheat was higher than the offer, and the gap between need and production will keep widening.
18. Wheat (Triticum ssp.)
Variation 1
40 cm

Variation 2
42 cm

Variation 3
51 cm

Variation 4
68 cm

Variation 5
68 cm

18. Wheat (Triticum ssp.)
18. Wheat (Triticum ssp.)
19. **Grape Vine** (*Vitis vinifera*)

**Perennial plant**

**Height**: variable, usually not higher than 3 m.
**Origin**: Southeastern Europe, Middle East
**Environment**: hillsides; in full sun
**Climate**: warm, temperate; dry

**Notes**: The Grape Vine (a.k.a. European Vine) was already cultivated by Sumerians 5000 years ago. In Caucasian Europe the plant was cultivated for food, while in Mediterranean Europe it was cultivated for the wine. Today, the original European Vine is almost extinct because of a roots disease. So farmers grafted European Vine into the roots of American Vine, and thanks to this "surgery" we are still able to drink and enjoy wine today. Spain, France, Italy and Turkey are the nations that dedicate the widest areas to the grape cultivation. 71% of world’s grape production is used for wine, 27% as fresh fruit, and a small 2% as dried fruit.
19. Grape Vine (Vitis vinifera)
19. Grape Vine (Vitis vinifera)
20. **Corn** (*Zea mays*)

**Annual plant**

**Height**: up to 3 m.  
**Origin**: Mexico  
**Environment**: hillsides, fields; in full sun  
**Climate**: warm, temperate; cold-intolerant

**Notes**:  
Also known as Maize, Corn (short for "Indian Corn") is the largest crop in all of the Americas (270 million tons yearly in the USA alone). The name *mays* comes from the Arawak (Caribbean native tribe) word for the plant. The very rapid growth (3 cm per day!) has made it a very popular crop worldwide. Corn is used as both human and animal food. Today, it is often manipulated into genetic variations, of which Sweetcorn is the most popular.
20. Corn (Zea mays)
20. Corn (Zea mays)

Variation 1
46 cm

Variation 2
76 cm

Variation 3
210 cm

Variation 4
221 cm

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