



Crop Characteristics

Tomatosphere™ concentrates on just one crop – tomatoes – as a candidate for cultivation on Mars. However, selecting potential “candidate crops” for cultivation in Martian greenhouses is complex. Good taste and storage time are important, but other characteristics like the amount of time required to mature, the value of the crop in terms of food energy produced, ease of storage, amount of space utilized, and the ability to grown in conditions which are quite different form those on Earth...all of these (and others) are important.

Chart – Crop Characteristics

Crop	Time to Mature (Days)	Energy Produced (MJ/kg per Kg)	Storage Time for Crops (number of days)
Asparagus	40	5.97	14 - 20
Beets	50	1.84	120 -180
Broccoli	70	1.43	10 - 14
Brussels sprouts	90	1.75	21 - 35
Cabbage	62	1.02	150 -180
Carrot	60	1.74	200 - 300
Cauliflower	55	1.05	20 - 30
Swiss Chard	60	0.672	10 - 14
Corn	70	3	5 - 8
Cucumbers	60	0.507	10 - 14
Eggplant	70	1.47	7
Garlic	67	5.57	180 - 200
Lima Bean	65	1.43	7 - 10
Bean (green or yellow)	60	1.39	7 - 10
Honey Dew Melon	115	1.5	21
Muskmelon (cantaloupe)	75	1.41	5 - 14
Okra	50	0.914	15 - 21
Onion	85	1.75	30 - 200
Pea	58	1.75	120 - 180
Pepper, Bell	60	0.842	15 - 20
Potato	100	3.88	150 - 300
Pumpkin	110	0.836	60 - 90
Radish	22	0.929	60 - 120
Rhubarb	30	1.05	10
Rutabaga (Turnip)	90	1.62	120 - 150
Spinach	40	0.975	10 - 14
Squash, summer	50	0.666	15 - 20
Squash, winter	80	1.92	20 - 40
Tomato	65	0.743	4 - 7
Watermelon	65	1.26	10 - 20