UNITED ARAB EMIRATES
MINISTRY OF CLIMATE CHANGE
& ENVIRONMENT

Vegetables gardening guide

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Index

Target of the guide

Provide knowledge and skills to interested school students and residents of the basics of vegetable cultivation in the United Arab Emirates.

Important information before starting agriculture

humidity, and light requirement, which affect the stages of plant growth where variation in temperature rise or decline affects many of the plant's vital and productive processes.
On the other hand, increasing relative humidity reduces temperature in some vegetable crops. Conversely, increasing relative humidity reduces the damage caused by high temperatures in some vegetable crops. Also, the day length controls the timing of flowering and maturity, and its directly proportional with the increase in the size of bulbs and tubers.

Second, Optimal selection of soil type when cultivating a crop positively affects the success of agriculture and the good productivity, both quality and quantity. In general, fertile soils with good drainage is considered the most suitable land type to ensure the success of planting vegetable crops.

Third, dissolved salts in soil and irrigation water, which cause significant damage to vegetable crops, such as sodium chloride, magnesium chloride, sodium bicarbonate and magnesium. The tolerance of vegetable plants for salinity varies from crop to crop. For example, radishes, watermelons, beans and celery are saline-sensitive crops. while, cucumbers, basil, onions, garlic, melons, peppers, squash, lettuce, carrots, tomatoes and cabbage are moderately tolerant plants, as well as salt tolerant crops such as cowpea, spinach, spinach and beet.

Forth, Irrigation of vegetable crops, where the need for water to vegetable plants are different for each crop, some of them are resistant to lack of irrigation water, and some are not. This factor is controlled by the distribution of plant roots, it is noted that plants with deep roots such as [tomatoes, pumpkin, sweet potatoes] need water in fewer amounts than plants with surface roots such as [Potatoes, onions, cabbage, broccoli, squash, garlic, lettuce, parsley, spinach, radishes].

Steps to grow vegetables

This procedure applies to all crops to be grown:

- Availability of water source
- Choose the appropriate area for planting in the garden in terms of soil type and appropriate natural lighting
- To check the appropriate location, contact your local agricultural advisor or a specialist
- Setting a garden plan that shows all the details of the garden
- Leave an appropriate place to recycle plant waste to produce organic fertilizers (compost)

- Plowing the earth and turning it well and get rid of all the stones and grass and make sure that there are no cement blocks and others prevent the growth of plants
- Add organic fertilizers decomposed and thermally treated at a rate of 3-4 kg per meter, and later added in small quantities as needed

Determine the crops that will be grown

- Identify the crops that you will plant in your garden, knowing that each crop is grown according to the season. To facilitate you, check the list of crops attached below showing the crop and the appropriate planting season.
- Some crops are grown directly in the ground and some are transplanted.

Direct seeding in the field

Planting seed in the nursery

Cultivation procedures for crops that require transplanting

Seedlings and transplanting procedures

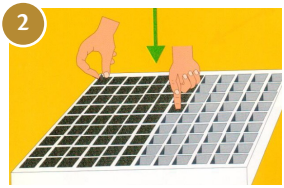
IMPORTANT NOTE: Make sure to get seeds from a reliable source and make sure they are appropriate for your area.

Planting seeds materials: Seeds, peat moss soil, water, containers, trays, irrigation tool, plastic.

Procedure

- peat moss soil containing a perlite content of at least 30% is mixed well and moisturized with water.
- Fill containers and trays with peat moss soil which has been moistened
- plant seeds in small containers or seeds trays at a depth of 0.5-1 cm without pressing them.
- Cover planted seeds with a peat moss soil layer.
- Irrigate the seeds.
- Cover containers or trays with plastic cover (plastic piece)
- Put the containers or seeds trays of which have been planted in a suitable place not exposed to wind and preferably inside a

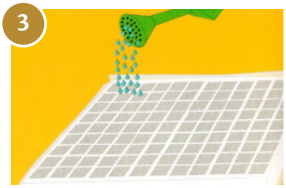
Fill the trays with peat moss



After filling, seeds are grown and covered with a thin layer of peat

plastic house that is possible or room with good ventilation.

- Care should be taken to follow up and check the water needs of seeds to avoid dehydration and excessive irrigation that may cause the death of seedlings or the incidence of root diseases and the death of seedlings.
- After a week, the germination is verified. If this happens, the plastic cover should be removed and the seedlings exposed to the sun (natural light).



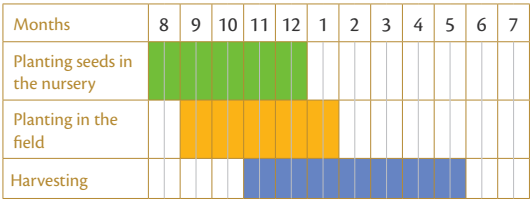
irrigate the peat moss, and then cover it with a piece of plastic to maintain proper temperature and humidity.

Eggplant (follow the Solanaceae family)

Vegetation description

Eggplant is self-pollination plant, it requires warm season at least 5 months for the success of the eggplant crops. Also, it needs temperatures between (18 - 25) ° C to complete the process of growth, flowering and ripening. Eggplant seedlings are grown in lines separated by a distance of 80-100 cm and the distance between seedlings in one line (50-60 cm).

Growing season



Transplanting the seedlings to the field

- IMPORTANT NOTE: The agriculture land should be well irrigated before transferring the seedling
- Seedlings are transferred to the garden land when they arrive 5-4 weeks, after three true leaves of the plant appear
- The seedlings are grown with their full contents in the agriculture land soils. So that the distance between each seedling and the other within the line is 60-50 cm and the distance of 100-80 cm between the parallel agriculture lines

Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Tomato (follow the Solanaceae family)

Vegetation description

Tomato is one of self-pollinated crops, and occupies the first place among the vegetable crops in terms of the largest annual cultivated area and the volume of production and consumption in the world. The fruit of tomato varies in size and color according to the different varieties.

Growing season

Months	8	9	10	11	12	1	2	3	4	5	6	7
Planting seeds in the nursery												
Planting in the field												
Harvesting												

Seedlings & transplanting procedures

Same procedures as explained in page 4 & 5.

Transplanting the seedlings to the field

- IMPORTANT NOTE: The agriculture land should be well irrigated before transferring the seedling.
- Seedlings are transferred to the garden land when they reach 5-4 weeks, after four true leaves of the plant appear.
- The seedlings are grown with their full contents in the agriculture land soils. So that the distance between each seedlings and the other within the line is 50-40 cm and the distance of 90-70 cm between the parallel agriculture lines.

Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Cucumber (follow the Cucurbitaceous family)

Vegetation description

The cucumber is a cross pollination plants and needs moderate weather during its growth.

Growing season

Months	8	9	10	11	12	1	2	3	4	5	6	7
Planting seeds in the nursery												
Planting in the field												
Harvesting												

Seedlings & transplanting procedures

Seeds of cucumber can be grown directly in the ground, but prefer to be seeding with the same procedures as explained in page 4.
Planting seeds period should be about one week.

Transplanting the seedlings to the field

- IMPORTANT NOTE: The agriculture land should be well irrigated before transferring the seedling.
- Seedlings are transferred to the garden land when they reach one weeks, after two true leaves of the plant appear.
- The seedlings are grown with their full contents in the agriculture land soils. So that the distance between each seedling and the other within the line is 60-50 cm and the distance of 90-70 cm between the parallel agriculture lines.

Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

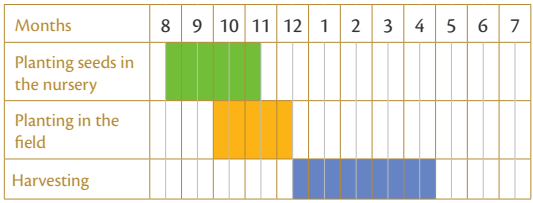
Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Pepper (follow the Solanaceae family)

Vegetation description

It is considered a self-pollinating plant, and its grows in temperate regions and succeeds in good drainage land. The peppers are grown in rows with a distance of 40 cm between each seedling and the other in the same line, and 70 cm between the parallel agriculture lines.

Growing season



Seedlings & transplanting procedures

Same procedures as explained in page 4 & 5.

Transplanting the seedlings to the field

- • IMPORTANT NOTE: The agriculture land should be well irrigated before transferring the seedling.
- • Seedlings are transferred to the garden land when they reach about 5-4 weeks, after four true leaves of the plant appear.
- • The seedlings are grown with their full contents in the agriculture land soils. So that the distance between each seedlings and the other within the line is 40 cm and the distance of 70cm between the parallel agriculture lines.

Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

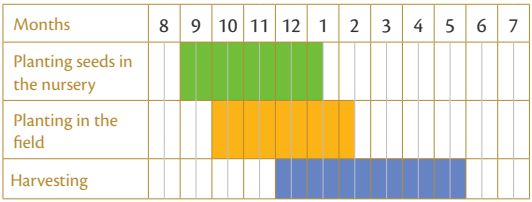
Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Cabbage (follow the Brassicaceae family)

Vegetation description

It is considered a cross-pollinating plant, and it grows in temperate regions and succeeds in good drainage land. Cabbages are grown in rows with a distance of 40 cm between each seedling and the other in the same line, and 70 cm between the parallel agriculture lines.

Growing season



Seedlings & transplanting procedures

Same procedures as explained in page 4 & 5.

Transplanting the seedlings to the field

- IMPORTANT NOTE: The agriculture land should be well irrigated before transferring the seedling.
- Seedlings are transferred to the garden land when they reach about 5-4 weeks.
- The seedlings are grown with their full contents in the agriculture land soils . So that the distance between each seedlings and the other within the line is 40 cm and the distance of 70 cm between the parallel agriculture lines.

Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Cauliflower (follow the Brassicaceae family)

Vegetation description

It is considered a cross-pollinating winter plant, and it grows in temperate regions and succeeds in good drainage land. Cauliflowers are grown in rows with a distance of 40 cm between each seedling and the other in the same line, and 70 cm between the parallel agriculture lines.

Growing season

Months	8	9	10	11	12	1	2	3	4	5	6	7
Planting seeds in the nursery												
Planting in the field												
Harvesting												

Seedlings & transplanting procedures

Same procedures as explained in page 4 & 5.

Transplanting the seedlings to the field

- IMPORTANT NOTE: The agriculture land should be well irrigated before transferring the seedling.
- Seedlings are transferred to the garden land when they reach about 6-5 weeks.
- The seedlings are grown with their full contents in the agriculture land soils . So that the distance between each seedling and the other within the line is 40 cm and the distance of 70 cm between the parallel agriculture lines.

Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Procedures of Cultivation crops that don't need transplanting

Potato (follow the Solanaceae family)

Vegetation description

Potato plants are important crops. Fruits grow under the surface of the soil and vegetation part over the soil surface. They need a relatively cool atmosphere and temperatures ranging from 15-25 ° C. Some varieties can tolerate high temperatures.

Growing season

Months	8	9	10	11	12	1	2	3	4	5	6	7
Planting in the field												
Harvesting												

Agriculture procedures

potato tubers are not planted in pots and containers, but they are directly planted in the field soil at depth of 15 cm. The distance between the fruits is 30 cm and between the lines is 80 cm. It is noted that the crop needs to add soil to the root area to achieve the best production.

Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Sweet corn (follow the Poaceae family)

Vegetation description

Sweet corn is one of the most important food crops and is one of the strategic crops, which is self-pollinating.

Growing season

Months	8	9	10	11	12	1	2	3	4	5	6	7
Planting in the field												
Harvesting												

Agriculture procedures

Sweet corn is not planted in pots and containers, but it is directly planted in the field soil at depth of 5 cm. The distance between the seeds is 30 cm and between the lines is 80 cm.

Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Onion (follow the Amaryllidaceae family)

Vegetation description

Onion has tubular leaves, and it bases under the soil surface. When planting, the land should be at the same level and divided into parallel lines. The bulbs can be planted (in the permanent land) at distances up to 7-10 cm between the seedling and the other. light requirement and temperature affected the onion, where the high temperature associated with the long day leads to speed the formation of onion bulbs.

Growing season

Months	8	9	10	11	12	1	2	3	4	5	6	7
Planting in the field												

Agriculture procedures

Onion is not planted in pots and containers, but it is directly planted in the field soil at depth of 5 cm. The distance between the seeds is 10 cm and between the lines is 30 cm.

Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Parsley (follow the Apiaceae family)

Vegetation description

It is characterized by small leaves and spherical fruits, can resist the high and low temperature. Parsley is grown at low temperatures, that is after the division of land to basin so that the width of the basin is not more than 1 meter and its length is about 2 meters. Also it need softening soil, mixing soil with organic fertilizers, disposal of rocks, and covering by a light layer of soil. Then, irrigation is done carefully so that the seeds do not drifting away.

Growing season

Months	8	9	10	11	12	1	2	3	4	5	6	7
Planting in the field		■	■	■	■	■	■	■	■			

Agriculture procedures

Note : parsley is ready to be harvested when the leaves stems have 3 segments.
Parsley is not planted in pots and containers, but it is directly planted in the field soil at depth of 5 cm and covered by soil using rake.

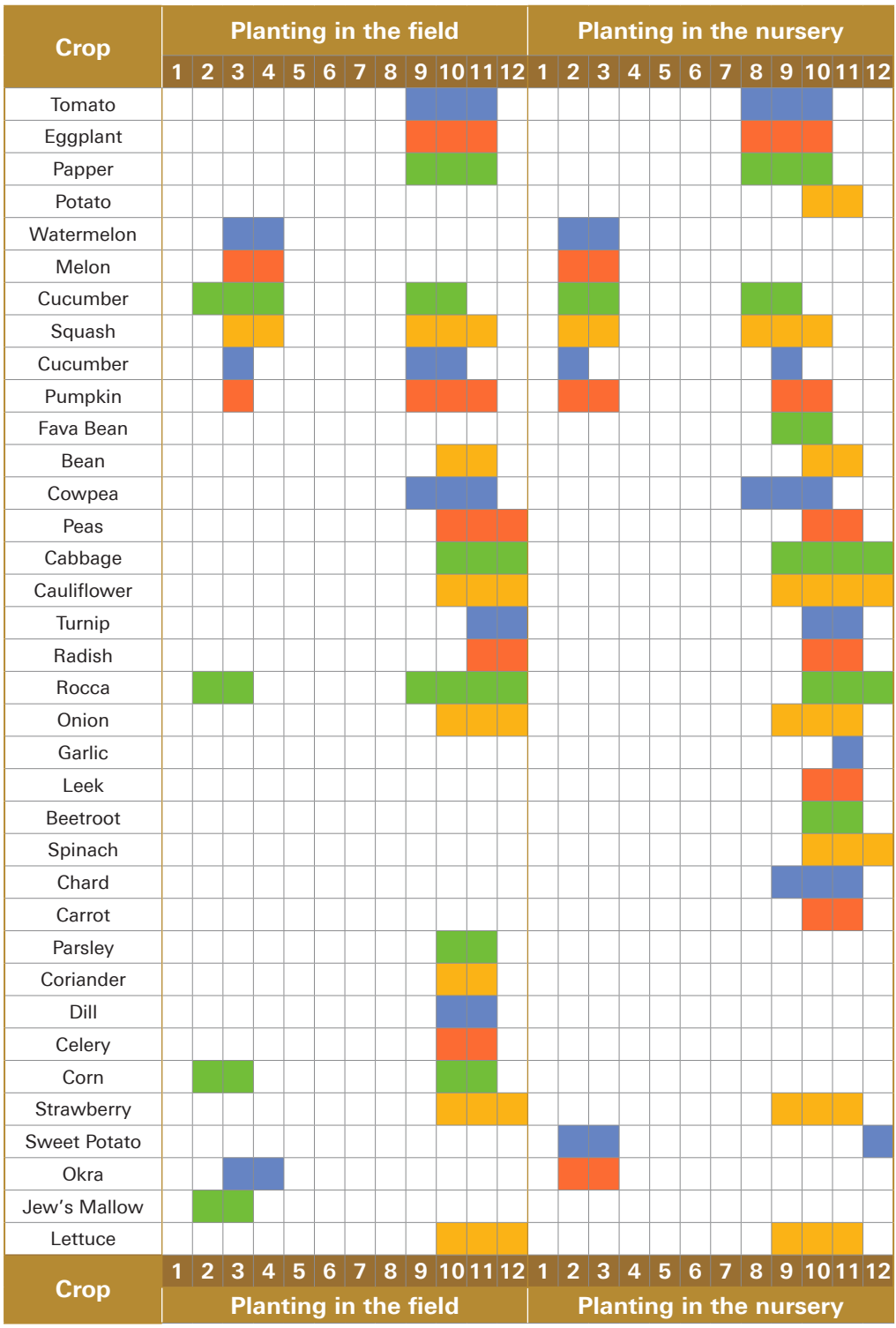
Irrigation

Irrigation is moderate and not over-irrigation so that the soil will be moist and can be irrigated using a water pipe or using a handy irrigation tools.

Fertilization

Organic fertilizer should be used as much as possible and chemical fertilizers can be used so that urea fertilizer is used initially and then chemical fertilizers are used according to plant status.

Crops list according to the date of planting



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