

# Vegetable production



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Vegetable Production - Not just planting a few seeds! The production of vegetables is very important in today's society as we try to promote healthy living. Vegetables provide a major component to achieving a balanced and nutritious diet as they are a prime, convenient and natural source of minerals, vitamins, fibre and energy and are known not only to introduce essential nutrients to the diet but also to help to prevent diseases. Making vegetables available, through production, distribution and marketing, contributes strongly to their consumption and therefore also contributes to a healthier society.

There are different approaches into how vegetables can be produced and grown and it depends entirely on the farmer, their approach to farming, and of course the resources available such as; machinery, technology, amenities and the acreage of land available for such a project. There are two general approaches to vegetable production that you must consider if you were to toy with the idea of growing some vegetables whether it be for your own consumption or maybe to supply the nation. These two general approaches are often described as; conventional farming or organic farming.

Generally the conventional method involves the use of synthetic pesticides which may or may not be based on naturally occurring compounds to protect crops from diseases, pests and weeds. Crops which are genetically modified to resist or tolerate diseases, pests etc can also be used in this method of farming as a strategy for protecting crops. Crop nutrient management in conventional systems typically involves the application of synthetic fertilizers which can be tailored to meet the needs of specific combinations of

vegetables and also include other factors such as soil, climate, water source availability etc.

Organic vegetable farming on the other hand relies strongly on cultural & mechanical practises and biological principles for weed, pest, disease and nutrient management. It's aim is to produce quality food in a manner beneficial to the environment and to wildlife. In order for a farmer to produce organic vegetables strict regulations and standards must be adhered to before the organic stamp can be used. This includes a restriction on the use of synthetic fertilizers or pesticides for crop management. Crop nutrients, pests and disease can be managed by using a variety of systems such as crop rotation, biological pest control, mechanical cultivation or the application of organic amendments to the soil such as manure or compost. Natural pesticides and fertilizers may be used but these are subject to strict standards. Straw or plastic mulch can also be used to help suppress weeds, control pest access to crop, moderate soil temperature and prevent water loss from soil. Organic farmers must be more careful in their plant selection and rely much more heavily on research and information to schedule planting and harvesting practises.

This is both in order to sustain the organic approach and also to produce healthier hardier plants through plant breeding as opposed to the genetic engineering methods employed in the conventional method. While both approaches to vegetable production must adhere to national and European regulations in Ireland it is obvious that the organic farmer faces a higher challenge to produce a consistent quantity and quality of vegetables. It

seems that if you were to take a stroll down the organic route to production you may need to prepare yourself for some extra work!

The approach of conventional or organic farming is essential to determining the other factors which must be considered for vegetable production. After deciding which type of approach you intend to follow to produce vegetables it is then necessary that you consider many other factors. The effect of the natural environment on the production of vegetables can be instrumental in determining the final yield of the farm from year to year. Vegetables can be produced in open fields, semi-enclosed or climate controlled structures or fully enclosed and climate controlled structures.

Farms which grow crops in open fields such as potatoes are limited in their control of such factors and their crops are fully exposed to weather, soil, pests and disease conditions. Fertilization, pest and disease strategies must be employed in order to manage crops and depending on the climate irrigation systems etc may also need to be put in place (not usually a problem in Ireland). Other farmers grow their crops such as tomatoes in semi-enclosed and climate controlled structures such as high tunnels.

These high tunnels can extend the vegetable growing season for instance vegetables can be grown when conditions outside the tunnel may not allow this because the high tunnel can limit the exposure of the vegetables to undesirable natural conditions and can sometimes even create conditions more supportive for vegetable growth. For example; placing growing crops within a high tunnel covered by a single layer of plastic shields them from the wind, rain and some pests and can support temperatures higher than that outside the tunnel.

Greenhouses are an example of a fully enclosed and climate controlled environment and apart from the enclosed housing and climate control differ from open fields and semi-controlled structures as the vegetables are generally not rooted in naturally occurring soil and are often grown in pots or other containers which provide firm physical boundaries. Of course deciding how you wish to grow your vegetables may be entirely decided by the type of vegetables you wish to grow and depending on the amount and type of land available it may be possible to use only one or maybe all three methods.

All of these methods can be used in order to produce certain vegetables all year round where spring and summer conditions may suit the open fields and high tunnel but greenhouses would be needed to produce vegetables in the winter. It evident so that first you must choose your approach to vegetable production, then decide which vegetable or vegetables you wish to produce and then of course decide how you wish to grow your crops whether it be in an open field or in large greenhouses etc.

Careful planning and execution in key areas such as site selection, site preparation, planting, management during crop growth and development, harvesting and then distribution to whatever market your produce is destined for is paramount in having a successful and high quality producing vegetable farm. If you are blessed to have a choice of site then the type of soil, the size of the site, the total cost of the site (including tax, land, utilities), access to water, proximity to suppliers, industry etc must all be considered.

The site then needs to be prepared for the type of vegetable production you wish to approach. For example in the case of open field; ploughing, dicing or other tillage is needed before planting. If using enclosed or climate structures these need to be assembled efficiently and appropriately according to the type of vegetable or vegetables being produced. Steps are then needed to prepare soil either with fertilizers or green manure and also to minimise weeds, pests and diseases either with pesticides or with the use of cultivation or mulches etc. Planting then needs to take place and depending on the size of the farm this can take place by hand or with machinery generally with each plant spaced a certain distance apart within rows and across rows depending on the type of crop. During the development of the crop a system needs to be put into place to manage the irrigation, fertilisation, weed, pest & disease control and growth of the crop to ensure the crop develops successfully with as little loss or waste as possible. A schedule for harvesting has to be organised and should be followed as closely as possible weather permitting, which unfortunately is not always an allowance in Ireland.

Crops can be harvested by machine or by hand and keeping them free of abiotic and biotic contaminants during harvesting is important to ensure quality losses are minimised. Once harvested, it is then necessary to place crops into containers and have them distributed to whichever market they are destined. During all of this hard work it is also necessary to keep records of crop, facility and equipment repair and also to continue your own education as research and new ideas in this industry are always being

developed. Evidently if you decide to become a vegetable farmer you don't just throw a few seeds around in the back field and off you go.

Education, preparation and a lot of hard work are necessary in order to become successful in this type of farming. You must also consider the marketability of the vegetables you wish to grow and whether they are suited and will develop and grow well in the natural environment supplied to you. Also strict standards are in place for the appearance, shape, dimensions, weight, chemical properties etc of vegetables which can create extra burden and problems for farmers so preparing well and following schedules and procedures will lead to you being a happier more financially secure vegetable producer.

Growing vegetables could be a rewarding challenging adventure if you prepare and educate yourself well considering all your options and what is available to you. Then with a bit of elbow grease and hard work you may find that you are producing vegetables which not only benefits society but also may benefit you and increase your bank balance!