



PEAS

Production & Spray Guide



Pea Production Guide

“Integrated Crop Solution”

Mange tout and sugar snap peas are cool weather legumes which give maximised yields when air temperatures range between 7 - 24 degrees celsius. It is possible to grow the crop outside of this optimum range by subtle use of irrigation. In areas prone to severe frost it is advisable that the crop should not be in production during these times. Flowers will abort resulting in a poor set and loss in yield as well as young pods being severely damaged.

Soils

Peas can be grown on a wide variety of soils but, in general, heavier clay soils are preferable as they tend to result in higher yields. Well-aerated and well-drained sandy loams of pH 5,5 to 6,0 (calcium chloride) should be chosen. On soils with a pH of less than 5,3 must have lime applied with preference given to dolomitic lime.

Fertilization

All soils must be analysed prior to planting so that any corrective measures may be taken before a problem becomes noticeable. Light sandy soils require more fertiliser than heavier soils. As a general rule of thumb, apply 800 – 1000 kg/ha of Cmpd A or B and in heavy clay soils use 400 – 500 kg/ha. If there has been a history of zinc deficiencies in the sandy soils Cmpd Z may be used to substitute for half the Cmpd B.

The quantity and timing of AN top dressing is again dependent on soil type. On sandy soils up to 300 kg/ha AN can be applied on a regular basis starting from +/- 4 weeks after germination and should continue well into flowering and picking. Less AN would be required on heavier soils and the time between applications may be longer. Additional potash may be required and 75 – 100 kg/ha of muriate will help colour and flavour.

Varieties

There are only two main commercial varieties in each group :

Variety	Days to		Resistances
	Maturity	Plant Ht	
MANGE TOUT			
Snow Wind	72	60 – 70 cm	Powdery Mildew Pea Enation Mosaic Virus
Snow Green	70	75 – 80 cm	Powdery Mildew Common Wilt

Sugar Lady	75	75 –90 cm	Fusarium Wilt Powdery Mildew
Cascadia	60	75 -90 cm	Common Pea Wilt Virus Pea Enation Mosaic Virus
Super Sugarsnap 1	66	150 cm	Powdery Mildew Pea Leaf Roll Virus

Seed

All Pea Seed is treated with Apron Star Seed Dressing

Population

Seed can either be hand or mechanically sown to achieve a population of about 160 000 plants per hectare. The approximate weight of seed sown per hectare will vary according to the variety but is normally in the region of 40 – 50 kg/ha.

As a general guideline plant two rows per bed on beds that are 1,5 m centre to centre. A built up bed is advisable as it reduces chances of water logging from occurring thus improving soil aeration. During the dry winter months this may not be necessary and planting can be done on the flat.

Inter row spacing is 8 cm and between the rows on the beds it is 15 – 20 cm. The rows are close together for ease of trellising.

As an alternative, single lines can be planted at 1m apart and with 6 cm inter row spacing. No less than 5 cm should ever be used as the inter row spacing as this will result in plants not tillering due to excessive competition. Minimum distance between the rows is approx. 90 cm which is determined by the ease of picking, spraying etc.

Planting

Sow seed to a depth of 25 to 40 mm into moist pre-irrigated soil. Always plant upwind when a series of plantings are to be in the same field so that the older plantings are downwind of emerging crops. This will reduce the pest and disease pressure especially of Heliothis, Ascochyta, Powdery mildew and Mycosphaerella. Boron deficiency is indicated by a clear yellowish to light green rim to the leaf. Copper sprays can cause similar symptoms and stunt leaves so be careful with excess copper sprays.

Pests and diseases

Before using any chemicals please check that it is on your exporter's Declared Pesticide List and read the label for manufacturers instructions.

Weeds

Great care should be taken to follow label instructions, with particular reference to depth of planting, restrictions related to soil type and range of weeds likely to be controlled. Peas are generally a winter crop so broadleaf weeds are likely to be a greater problem than grasses.

Terbutryn

Apply within 48 hours of planting to wet soil or follow with a light irrigation. Controls mainly broad leaf weeds and has a residual action of 6 – 8 weeks.

Rates :	0 - 10 % clay	2 l/ha
	10 – 20 % clay	2,5 l/ha
	20 - 30 % clay	3,0 l/ha
	over 30 % clay	4,0 l/ha

Dual Magnum 960EC

Apply within 48 hours of planting and irrigate it controls grass, weeds. Pre-emergence application rate is 1,2-1,5lt per ha

Fusilade Forte

This may be used up to 3 l/ha over the top of peas when they are 50 – 150 mm high to control certain broadleaf weeds and yellow nutsedge. Do NOT exceed this rate on peas – nor should it be used on frost damaged crops or when frost is imminent. Weeds must be at a susceptible stage.

This will control most emerged true grasses and will also suppress Upright Starbur when sprayed at 1 – 1.5 l/ha dependent on height and species of grass. It can be safely applied over the top of peas at any stage. Weeds must be growing vigorously and herbicide effect may not be noticed for some time after spraying. Fusilade Forte becomes rain fast within 1 – 2 hours.

Insects

Nematodes

Solvigo 108SC at 3lts/ha into planting furrow before covering. Will also control soil borne insects and early sucking pests (Aphids/Thrips). PHI 45 days

Oxamyl @ 4l/ha split into 2l /ha at planting followed by 2 l/ha two weeks later. Soil must be wet at the time of application or irrigation to follow within two hours. It must be applied in a high volume of water (1000 l/ha) applied with the nozzle of the knapsack removed and drenched as close to plants as possible.

Cut worm

Karate Zeon@ 100 ml/ha applied over the crop at germination. Soil must be moist.

Heliothis bollworm

This can be quite a problem particularly during warm spells. Spray with :-

Karate Zeon @ 200ml/ha in 500lt volume of water (PHI 2days).

Ampligo @ 250ml/ha in 500lt volume of water (water PH1 3days).

Proclaim @ 250gm/ha in 500lt volume of water (PHI 2days).

Match @ 600ml/ha in 500lt volume of water (PH1 14days)

Do not use Karate Zeon as a foliar application between 1 June and 1 August

Thrips

This small insect is difficult to control as it lives mainly in the growing points and flowers. The use of sugar as a form of bait has been found to give better control (100g/100l). Use :

DDVP @ 1lt/ha (PHI 1day)

Proclaim @ 300gm/ha (PHI 3days)

Diseases

In all instances good leaf cover is essential for effective control and good spraying techniques are imperative.

Damping off

Newly emerged young plants are susceptible to damping off and root rot diseases, especially under conditions unfavourable for germination and early growth.

Apron Star 42 WS as a seed dressing @ 3gm/kg seed prior to planting.

Benlate @ 1 kg/ha drenched along plant bases. This is the only time that Benlate should be used in the crop due to overseas restrictions.

Powdery Mildew

This disease thrives in hot dry weather.

Sulphur @ 1 – 2 kg/ha is a cheap preventative chemical that should be sprayed on a weekly basis. This product must not be mixed with other chemicals and only sprayed during the cool of the day.

Amistar Top @ 500ml/ha (PHI 14days)

Score @ 350ml/ (PHI 14days)

Are systemic curatives

Downy Mildew

It is more prevalent in cool wet conditions where the plants are covered by dew until mid morning. Preventative sprays of Copper @ 2kgs/ha will help and curative sprays of Ortiva @ 600ml/ha once the disease has been seen.

Black Spot (*Ascochyta pisi* and *Mycosphaerella pinodes*)

Ascochyta only attacks the leaves and pods whilst *Mycosphaerella* also attacks the stem and root crown. More or less circular lesions appear on the leaves and tiny raised spots form on the pods. Overwatering exaggerates the problem and encourages the spread of the disease. Control in the field is achieved with :

Use of disease free certified seed

Good crop rotation (at least three years)

Irrigate in mornings only to allow plants to dry out before night fall.

Copper Oxychloride @ 2 - 3 kg/ha as a preventative spray weekly

Bravo 720SC @ 1,4 lt/ha (PHI 14days)

Ortiva 250SC @ 500-600ml/ha (PHI 3days)

Amistar Top @ 500ml/ha (PH 7days)

Harvesting

During the summer months the picking starts eight weeks after planting but this will be as much as twelve weeks during mid winter. The crop is generally harvested for 3 – 4 weeks in hot weather and up to six weeks in winter.

Picking must be on a daily basis as the peas become over mature and unmarketable very quickly. One woman should be able to pick 25 kg in one day but where there is a bonus incentive over 50 kg per person has been achieved.

As soon as the pod is picked it is essential that field heat is removed as quickly as possible to ensure that shelf life is kept to a maximum. The containers that the peas are picked into must be small bowls which are emptied into waiters' crates and placed into a nearby field hut to be kept in the shade. If the hut is made of hessian sacking then it is advisable to keep it wet during the day. These crates must be labelled according to the field number from which they have been picked and transported to the coldstore every two hours. The coldstore should be kept at approximately 3 degrees.



Pea Spray Guide

Stage	Nursery	Transplanting & Establishment	Rapid Leaf Growth	Floret Formation	Floret / Head Expansion	Harvest
Days:	-7	0-14	14-50	35-45	50-70	60-120

Product	Rate/ha	grams or ml/100 Lts water @ 500 Lts	EU MRL mg/kg	Days to Harvest (phi)
Solvigo	3 Lts	600	0.01	45
Karate Zeon	100ml/ha (cutworm) 200ml/ha (bollworm)	20/40	0.02	2
Trigard 75 WP	150 gm	30	5	3
Dynavec 018 EC	560 ml	115	0.01	7
Proclaim 05 SG	250gm	50	0.01	3
Ampligo 150 ZC	250 ml	50	0.01	3
Match 050 EC	600ml	120	0.02	14
Apron Star	2.5gm/kg seed		Seed Dress	2-4
Oritiva 250 SC	500 -800 ml	60 - 120	3	3
Bravo 720 SC	1.4 Lts	280	2	14
Amistar Top 325SC	500 ml	100	1	7
Copper Oxychloride	3 kg	600	20	2
Dual Magnum 960 EC	1.3 Lts	100	0.05	na
Fusilade Forte	1.25 Lts	250	1	28
Gramoxone	2 Lts	400	0.02	na
Touchdown	2 Lts	400	0.05	na

* No of appl'ns = Number of applications per crop cycle; depend on problem pressure, weather conditions and crops chemical alternations.

Stage	Nursery	Transplanting & Establishment	Rapid Leaf Growth	Floret Formation	Floret / Head Expansion	Harvest
Days:	-7	0-14	14-50	35-45	50-70	60-120
Pest Problems						
Nematodes		Solvigo ↑				
Cutworm		Karate Zeon ↑				
Leafminer		Trigard/Dynavec ↑				
Pod Bollworm			Karate Zeon/ Proclaim/Ampligo/Match ↑			
Thrips			Ampligo / Proclaim/ ↑			
Red Spider Mites			Dynavec ↑			
Disease Problems						
Damping off		Apron Star Seed Dress ↑				
Ascochyta			Oritiva / Bravo / Copper/Amistar Top ↑			
Downy mildew			Amistar Top/ Oritiva ↑			
Powdery mildew		Amistar Top/Oritiva ↑				
Weed Problems						
Before planting - post emergence perennials		Touchdown ↑				
Before planting - post emergence annuals		Gramoxone / Touchdown ↑				
Pre-emergence: grasses		Dual Magnum ↑				
Post-emergence: grasses			Fusilade Forte ↑			
Pre-emergence: grasses + Broadleaf		Codal Gold/ Terbutryn ↑				

SEED CO

GROWER'S GUIDE

CROP	DAYS TO MATURITY		PLANT SPACING (cm)		PLANTS/HA X1000	AVERAGE SEED PER GRAM	SEED REQUIREMENT (Kg/Ha)	COMMON PESTS	COMMON DISEASES
	WARM	COOL	IN ROW	BETWEEN					
Garden Beans	55	65	2x7*	50	285	4-5	75	Bollworm	Rust Anthracnose Halo Blight
Beetroot	80	110	10*	20	450	50-60	8	Aphids	<i>Ccpa</i> <i>Rzoc</i>
Broccoli	70	90	40	70	36	225	0.2	Diamondback Moth Aphids	Black Rot White Blister
Butternut	90	120	50	100	20	8-10	3	Fruit Fly	Gummy Stem Blight Anthracnose
Cabbage	80	110	40	50	30	300	0.2	Diamondback Moth Aphids	Black Rot Club-root S
Carrot	90	120	3*	15	1100	800	2	Nematodes	<i>ta</i>
Cauliflower	85	110	40	70	36	240	0.2	Diamondback Moth Aphids	Black Rot Club-root
Cucumber Field	60	85	40	150	16	40	16 000 Seeds	Red Spidermite Aphids Whitefly	<i>Fm</i> Powdery Mildew Downy Mildew
Cucumber Tunnel	65	85	45	150	16	40	3 per m ²	Red Spidermite Aphids Whitefly	<i>Fm</i> Powdery Mildew Downy Mildew
Eggplant	75	90	50	75	27	220	0.15	Thrips Aphids	Powdery Mildew
Gem Squash Semi-bush	50	70	35	150	18-22	10-12	4	Pumpkin Fly	Powdery Mildew
Gem Squash Vine	55	80	50	150	14	10-12	2	Aphids	Virus Diseases
Hubbard Squash	110	130	100	150	7	6	1.5	Pumpkin Fly Aphids	Powdery Mildew
Lettuce	50	70	30	60	55	800-1000	0.05-0.07	Aphids Leafminer	Powdery Mildew Bacterial Rot
Marrows	35	55	40	150	18	8-10	2.5	Fruit Fly Whitefly	Virus Diseases Powdery Mildew
Melon	85	100	40	150	16	20	1	Fruit Fly	Anthracnose Fusarium Root Rot
Onions	170	190	8*	20	850-1000	250	3.5	Thrips	White Bulb Rot Pink Root Rot <i>ta</i>
Peppers	70	85	2x40*	150	30-35	150	0.25	Aphids Thrips	Virus Diseases Phytophthora Root Rot
Pumpkin Semi-bush	90	120	80	180	8	4	2	Pumpkin Fly Cutworm	Powdery Mildew Fruit Rots
Pumpkin Vine	120	140	100	180	5	4	1.5	Pumpkin Fly Cutworm	Powdery Mildew Fruit Rots
Sweet corn	75	100	20	90	55	8	8	Stalk Borer Bollworm	Rust NCLB
Swiss chard	60	75	20*	45	200	60	4-6	Aphids	<i>Ccpa</i>
Tomato	80	100	40	150	16	250	0.1	Bollworm Whitefly Nematodes	Blight Bacterial Wilt Viruses
Watermelon	80	90	50	180	6	20	0.3	Fruit Fly	Gummy Stem Blight Anthracnose