

Spray programme for broccoli, Cabbage, Kales and cauliflower

CROP GROWTH STAGE	TARGET PESTS/DISEASES	PRODUCT FOR CONTROL	ACTIVE INGREDIENT	RATE/20L WATER	Spray interval	No. of sprays	Total product	PHI DAYS	REMARKS
Nursery establishment (seeding)	Damping off, fusarium wilt	Pearl 50SC	Carbendazim	20mls		0	0	14	The soil borne diseases can lead to total crop loss as seedlings dry before transplanting. Drenching the seed with pearl 50EC before sowing helps prevent the diseases. Mix oshozyme with the seeds before sowing to help increase the seeds germinative power. Oshozyme is rich in vitamins, proteins and plant hormones.
		Control 70DF	Thiophenate Methyl	16gms	Once	1	16g	14	
		Oshozyme D	<i>Ascophyllum nodosum</i>	30ml	once	1	30ml		
Nursery (seedlings)	Damping off Root rot	Mistress	Mancozeb + Cymoxanil	30gms	7 days	2	60g	7	Systemic products, both curative and preventative and offers good control.
		Valete 80WP	Fosetyl Aluminium	50gms	0	0	0	7	
	Aphids, Whiteflies, sawflies	Oshothion 50EC	Malathion	40mls	7days	2	80ml	14	Seedling pests which cause direct damage/transmit diseases.
	Caterpillars	Atom 2.5EC + Nimbecidine	Deltamethrin Azidarachtin	10mls 50ml	7days	2 2	20ml 100ml	14	Caterpillars can lead to total loss if not controlled. The two products to be mixed together.
	Nutrition	Potphos	NPK-0-50-30		30mls	Once	1	30ml	Well balanced foliar feed with high phosphorous and potassium contents hence enables seedlings develop strong rooting system. essential for root development and increases the plant length.
Easy grow stater		NPK -18-20-21+TE		40gm	7 days	2	80g		
Oshozyme liquid		Plant growth promoting hormones, sea Weed extracts .		20ml	once	1	20ml		
Transplanting 21 days after germination NB: Use oshozyme Granule + blackearth +DAP +Manure in each planting hole	Cutworms	Umeme 2.5EC	Lambdachyalothrin+	20mls	Once	1	20ml	3	Cutworms are active at night and hide below the soil surface. Spray in the evening after transplanting at each seedling base. Mix the two products.
		Nimbecidine	Azidarachtin	50ml			50ml		
	Nutrition	Oshozyme D Oshozyme G Blackearth	<i>Ascophyllum nodosum</i> Water soluble soil amendment and blend composition	20ml 2.5kg/50kg DAP 1kg/50 kg DAP	once	1 1	20ml 2.5kg	0	helps the seedlings develop strong rooting system and fast pick up after transplanting reduces nutrient lock up, helping stabilizing Nitrogen, improves soil aeration, stimulates growth of beneficial fungi especially in soils low in organic matter.
Vegetative Stage 1-4 weeks after transplanting	Aphids, whiteflies, sawflies Diamond back moth	Manik 20sp	Acetamiprid	5gm	14days	2	10g	14	Serious pest like aphids and whiteflies cause direct damage and transmit viral diseases. Damaging pest to young seedlings disrupting head formation. The presence of its larvae in florets can lead to rejection of the produce.
		Halt+ Nimbecidine	Bacillus thuringiensis+ Azidarachtin	10g 50ml	14	3	30g 150ml	14	
Transplanting	Brassica fusarium wilt	Pearl 50 SC Control 70 DF	Carbendazim Thiophenate methyl	20mls 16gms	14days	0 2	0 32g	14 14	Soil borne fungal disease. And can affect any stage. Drench the planting holes with the Pearl 50SC or Control 70DF solution before transplanting to control the disease. Crop rotation is also useful

NB. Top dress at 3weeks with sulphate of ammonia	Bacterial soft rot,bacterial leaf spot, Ring spot,bacterial leaf spot	Sulcop 50DF	Copper oxychloride	50gms	14	2	100g	7	These are bacterial diseases and mainly seed borne.Begin applications after transplanting with SULCOP 50DF repeat after every 10 days Use certified seed and practice crop rotation	
	Downey mildew	Oshothane80wp	Mancozeb	50gms	0	0		7	Disease prevalent in cool,wet weather and affects all stages.Start applications early and alternate oshothane 80wp and control 70DF Repeat every 10 days.	
		Control 70DF	Thiophenate Methyl	20gms	14	2	40g	7		
	Black rot	Sulcop DF	Copper oxychloride	50gms	Will be controlled By spray done on leafspot control				1	Bacterial disease favoured by high rainfall,humidity and temperatures.Infection occurs at all stages and can cause total crop loss.Affected plant leaf turn black and soft then rot to give an offensive smell.Start sprays early,repeat every 10 days.
	leafspot	Control 70DF	Thiophenate Methyl	20gm	0	0			7	Fungal disease which is seed borne.Can attack from seedling stage.
	Nutrition	Easy grow Vegetative	NPK-27:10:16+TE	40gms	14	3	120g	0		Fertilizer with high N is recommended during the vegetative phase-Repeat at 2 week intervals.
Oshozyme		<i>Ascophyllum nodosum</i>	20mls	14	3	60ml	0		oshozyme is a plant biostimulant that has hormones, proteins/vitamins and helps the plant to withstand stressing conditions	
Week 5 onwards -Harvesting stage	Aphids,whiteflies,sawflies	Atom 2.5EC	Deltamethrin+ Nimbecidine	15mls+ 50ml	14 14	3 3	45ml 150ml	1	Atom 2.5EC has quick knockdown effect on these pests and stops their damage immediately after the spray	

Summary of products required assuming each spray will use only one pump to cover the demo site;

1. Control=100g
2. Oshozyme liquid=200ml
3. Mistress=60g
4. Oshothion=100ml
5. Atom=100ml
6. Nimbecidine=500ml
7. Potphos=100ml
8. Easygro starter= 80g
9. Umeme=20ml
10. Easygro Veg=120g

11. Blacearth=1kg
12. Oshozyme granules=2.5kg
13. Sulcop=100g
14. Aquawet=260ml

Notes

- ✓ During the fungicide/insecticide sprays on cauliflower or broccoli, it is advisable to incorporate **Aquawet 10 SL** (*Nolyphenol Ethoxylate SL*) which is wetting/spreading agent in the mixture.
- ✓ During dryness use **Green miracle** (*fatty Acid nutrients*) to reduce water loss by the leaves during Evapotranspiration.
- ✓ For insecticidal sprays ensure you mix the insecticides with NIMBECIDINE for best results.
- ✓ During harvesting use short P.H.I products.