Potato Bio Crop Guideline

A suggested guideline for the sustainable production of potatoes. Improve crop health and productivity while building root health and fertility.

Andermatt Madumbi

Root Health Program

Product: Application and Rates	Purpose
Laying Foundations	
Eco-T ®: 500 g/ha at plant or two weeks post plant. In furrow / drench	• Stimulates healthy root development. • Suppression of soil borne fungal diseases that cause wilting and damping off i.e. *Fusarium, Pythium, Rhizoctonia,* etc.
Humate Granules: 5 kg/ha In fertiliser blend.	• Improves efficiency of fertiliser maximising nutrient utilisation. In potatoes, especially beneficial for P uptake.
Fulvic Acid Powder: 2 – 5 kg/ha as soil application, or as 1-2% part of liquid fertilizer blend.	• Natural chelator, plant growth promotor and microbial stimulant.
V[12] *Initiate*: 3-5 kg/ha. In furrow. Follow up at week 8 for extra calcium during tuber set and development. Roots are under stress because all energy going to tubers. Very effective in poor soils.	• B, Si, Ca and biostimulants initiate the nutrition cycle and support germination and calcium support later in the season.

Plant Vitality Program: *Plant Maintenance*

Product: Application and Rates	Purpose
Stimulate Vegetative Growth	
Promoting healthy vegetative growth early in season prepares the crop for optimum production during tuber initiation and bulking. N is important for early season vegetative growth.	
V[12] *Shoot*: 500 ml - 1 L/ha foliar application 3 weeks after emergence or seedlings 1 week after transplant.	• Stimulate vegetative growth.
V[12] *Multi*®: 2 L/ha foliar application 4 weeks after emergence. Repeat as necessary.	• Ensure nutrition and energy reserves ahead of tuber initiation and bulking. Supplement nutrition during periods of stress and critical growth periods.
V[12] *Micro*®: 1 L/ha foliar application as needed to correct micronutrient deficiencies.	• Micronutrient supplement to aid in deficiency management.
Optimise Tuber Size and Starch Content	
Nutrient demand peaks during tuber bulking. Supplement soil applications with well rounded foliar products. Use N with caution as excesses will stimulate vegetative growth at the expense of tuber development.	
V[12] *Fruit:* 500 ml/ha Foliar application at tuber initiation. Repeat at bulking.	• Brassinolides and boron to stimulate tuber development, number, size and quality.

Bio Crop Protection: *Disease and Pest Management*

Product: Application and Rates	Purpose
Disease Management	
AmyProtec®42: 500 ml/ha Soil drench at plant, four weeks after emergence. Repeat at six weeks after emergence.	• Soil Disease Prevention Program incorporating beneficial microbes to build soil health and aid in disease prevention.
Eco-T ®: 250 g/ha 6 and 8 weeks after emergence. Stimulates healthy root development. Suppression of soil borne fungal diseases that cause wilting and damping off i.e. *Fusarium, Pythium, Rhizoctonia,* etc.	

Product: Application and Rates	Purpose
Pest Management	
AgriSil K50®: 1 - 2 L/ha Foliar application or soil drench through Irrigation at week 2 and 6 after emergence, or monthly after emergence for additional support. Low rates can be applied every 7 to 10 days from emergence or transplant, under low stress conditions and when plants are small. Apply high dose rates when applications are done further apart, under high stress conditions and on large plants.	• Immunity support / preventative (Silica supplement). • Silica supplement to support immunity and stress tolerance.
Eco-Bb®: 300 g/ha foliar application repeated monthly. Double rate in cases of high infestation.	• Suppression of leaf miner.
Bolldex®: 200 ml/ha foliar application when pest is first noticed - eggs or 1st instar larvae.	• Suppression of African bollworm.

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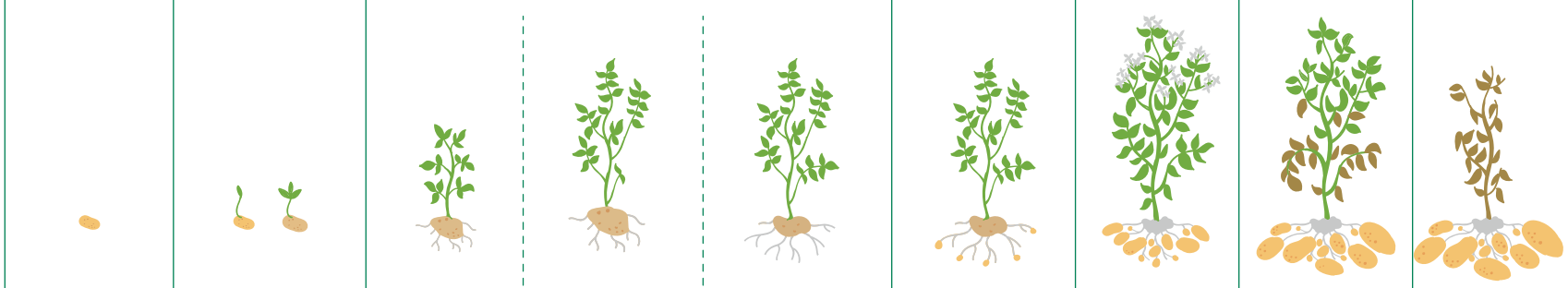
Application Timing

Application timing is a guide only. Can be amended according to season, crop and location.



	Product	Pre-plant	Planting	Emergence	2 Weeks	4 Weeks	6 Weeks	Tuber Initiation	Full Flowering	Tuber Bulking	Senescence
Root Health	*Humate Granules*	5 kg/ha									
	V[12] Initiate		5 kg/ha					5 kg/ha			
	Fulvic Acid	Apply as needed									
Plant Vitality	*V[12] Shoot*				1L/ha		1L/ha				
	V[12] Fruit							500 ml/ha			
	V[12] Multi®					3 L/ha			3 L/ha		
	V[12] Micro®					1 L/ha			1 L/ha		
	V[12] Finish®									500 ml/ha	
Bio Crop Protection	*Eco-T®*				500 g/ha		250 g/ha		250 g/ha		
	AmyProtec® 42		500 ml/ha			500 ml/ha		500 ml/ha	500 ml/ha if needed	500 ml/ha if needed	
	AgriSil K50®			2 L/ha	2 L/ha			2 L/ha		2 L/ha	
	Eco-Bb®				300 – 600 g/ha as needed for leaf miner when pest first noticed.						
	Bolldex®				200 ml/ha as necessary for management of African Bollworm. Apply when pest is first noticed. Target eggs or first instar larvae.						

AgriSil® K50 contains potassium silicate. Reg. No. B3756, Act No. 36 of 1947, skin irritant. PQ Silicas South Africa (Pty) Ltd, PO Box 14016, Wadeville, 1422, Reg. No. 2000/027189/07. AmyProtec® 42 contains Bacillus amyloliquefaciens FZB42. Reg. No. L10665; Fulvic Acid Powder contains fulvic acid. Reg. No. B4796; Humate Granules contain humic acid and potassium. Reg. No. B4797; Bolldex®, contains *Helicoverpa armigera* Nucleopolyhedrovirus (HearNPV). Reg. No. L8895; V[12] Initiate contains potassium, sulphur, calcium, magnesium, manganese, zinc, iron, silica, copper, molybdenum and boron. Reg. No. B4513, Act No. 36 of 1947; V[12] Fruit, contains nitrogen, sulphur and boron. Reg. No. B4511; V[12] Micro®, contains nitrogen, potassium, magnesium, sulphur, iron, manganese, zinc, copper, boron and molybdenum. Reg. No. B4514; V[12] Multi® contains nitrogen, phosphorous, potassium, sulphur, magnesium, iron, copper, zinc, manganese, boron and molybdenum. Reg. No. K4512; V[12] Shoot contains nitrogen, magnesium, sulphur, iron, manganese and molybdenum. Reg. No. B4510; V12 Finish® contains nitrogen, phosphorus and potassium. Reg. No. K9557, Act No. 36 of 1947 - Andermatt Madumbi (Pty) Ltd, Postnet Suite 20, Private Bag X6011, Hilton, 3245. Reg. No. 2009/020798/07. Eco-Bb®, contains *Beauveria bassiana*. Reg. No. L8469; Eco-T® contains *Trichoderma asperellum*. Reg. No. L6938, Act No. 36 of 1947. Andermatt PHP (Pty) Ltd, PO Box 207, Nottingham Road, 3280. Reg. No. 2003/007987/07.