

Brendon Rockey



Rockey Farms Center, CO

- Speciality potatoes
- Certified potato seed
- Fresh market fingerlings
- 2 year rotation
- Center pivot irrigation
- 7,600' elevation



You Have to take
care of the soil,
before the soil can
take care of you.



- Floyd Rockey



Insects

Foliar
Disease



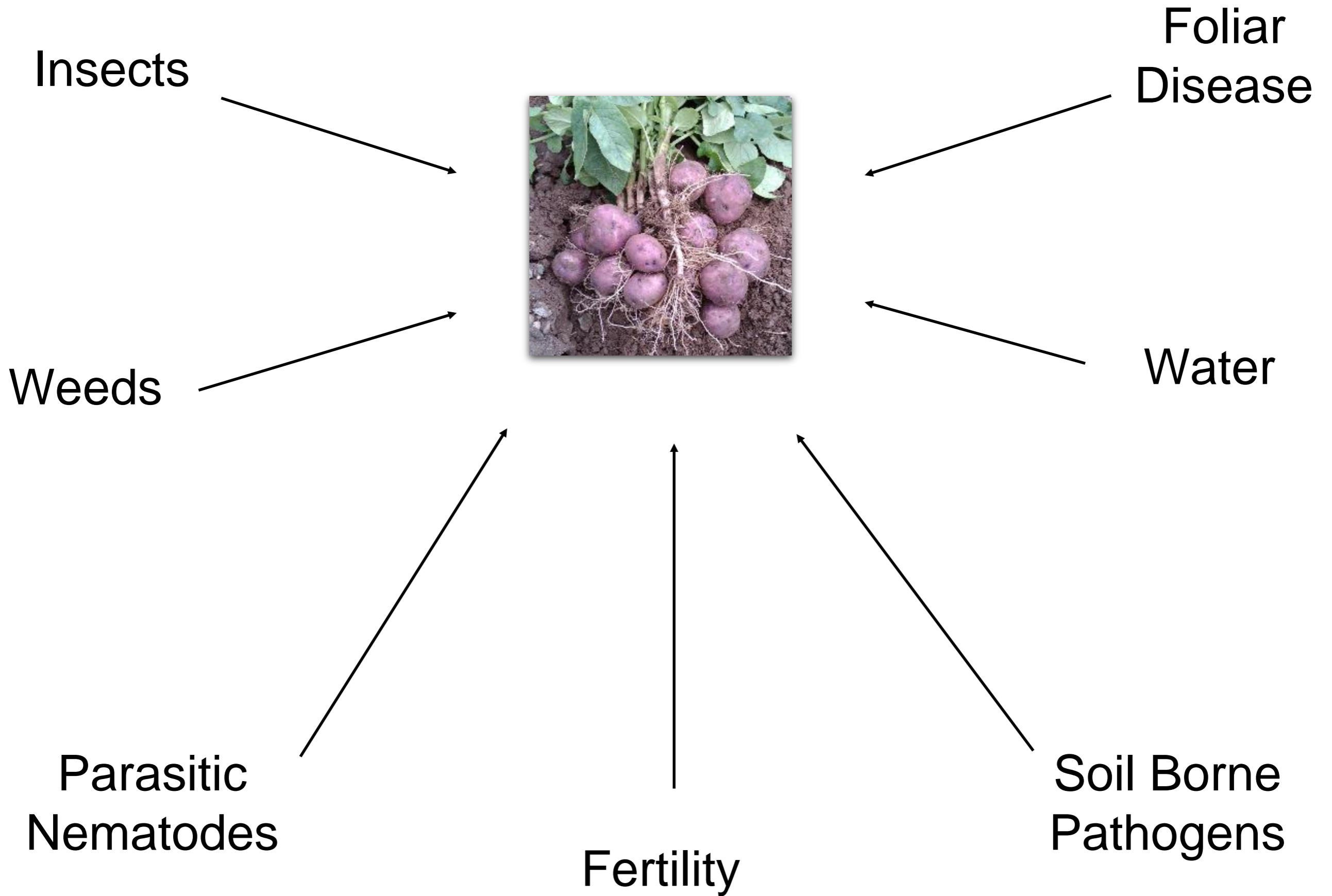
Weeds

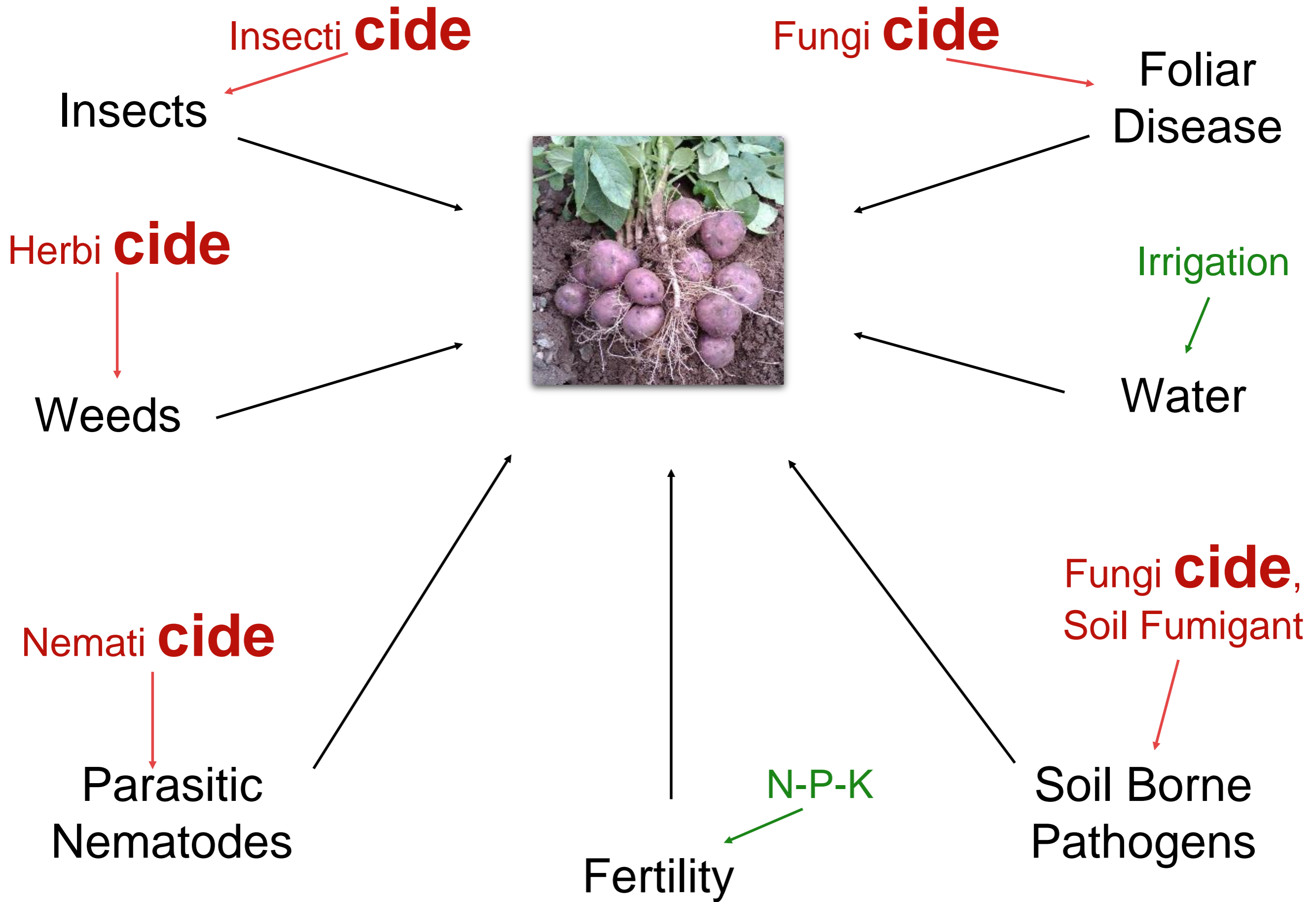
Water

Parasitic
Nematodes

Fertility

Soil Borne
Pathogens





Biotic Farming:

An agro-ecological approach that nurtures the relationships between all living, and non-living components of the complete system.

Insects

Foliar
Disease

Predatory
Insects



Beneficial
Foliar Biology

Weeds

Water

Carbon

Soil
Structure

Beneficial
Soil Biology

Parasitic
Nematodes

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Fertility

Insects ← Insecticide

Predatory
Insects



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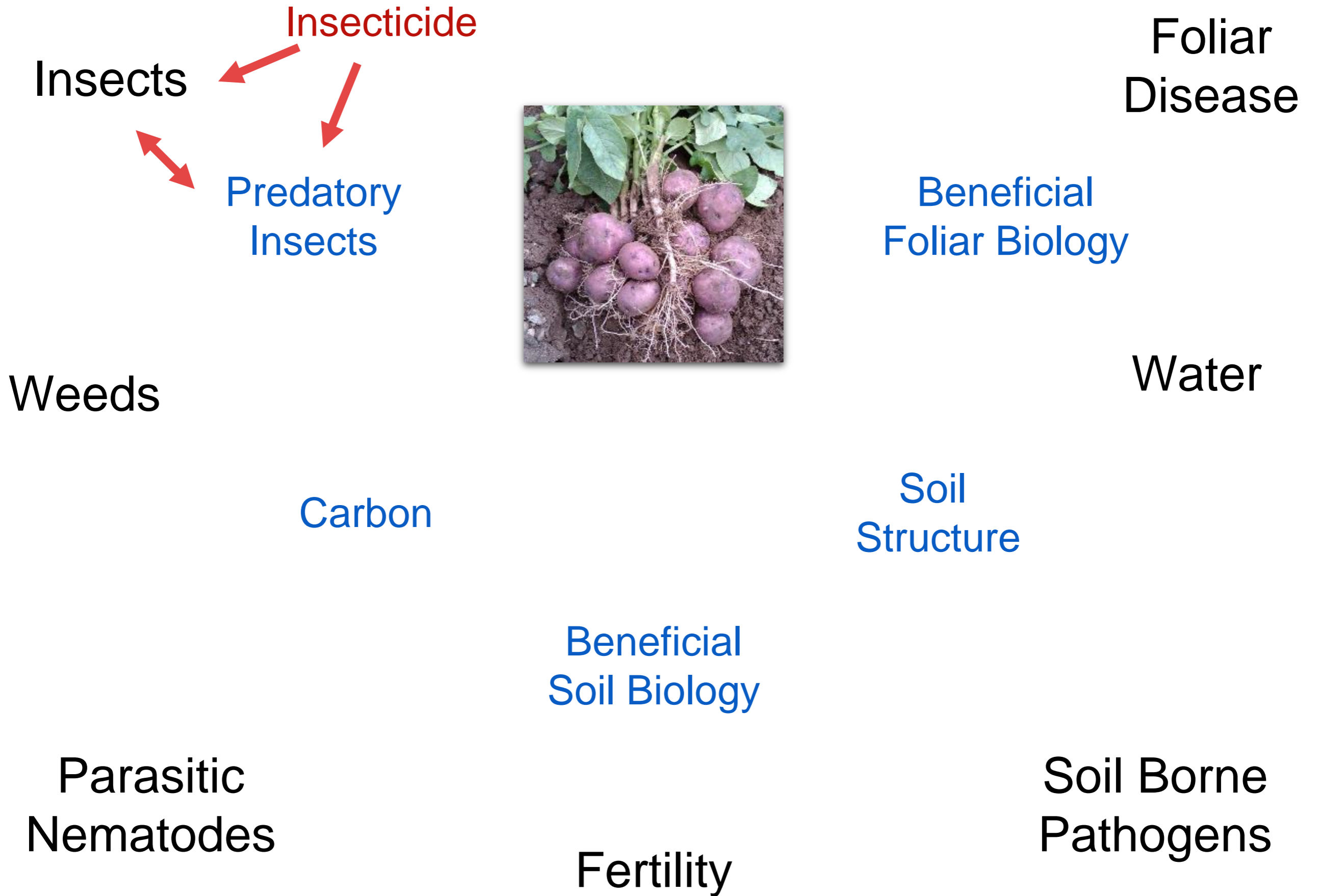
Soil
Structure

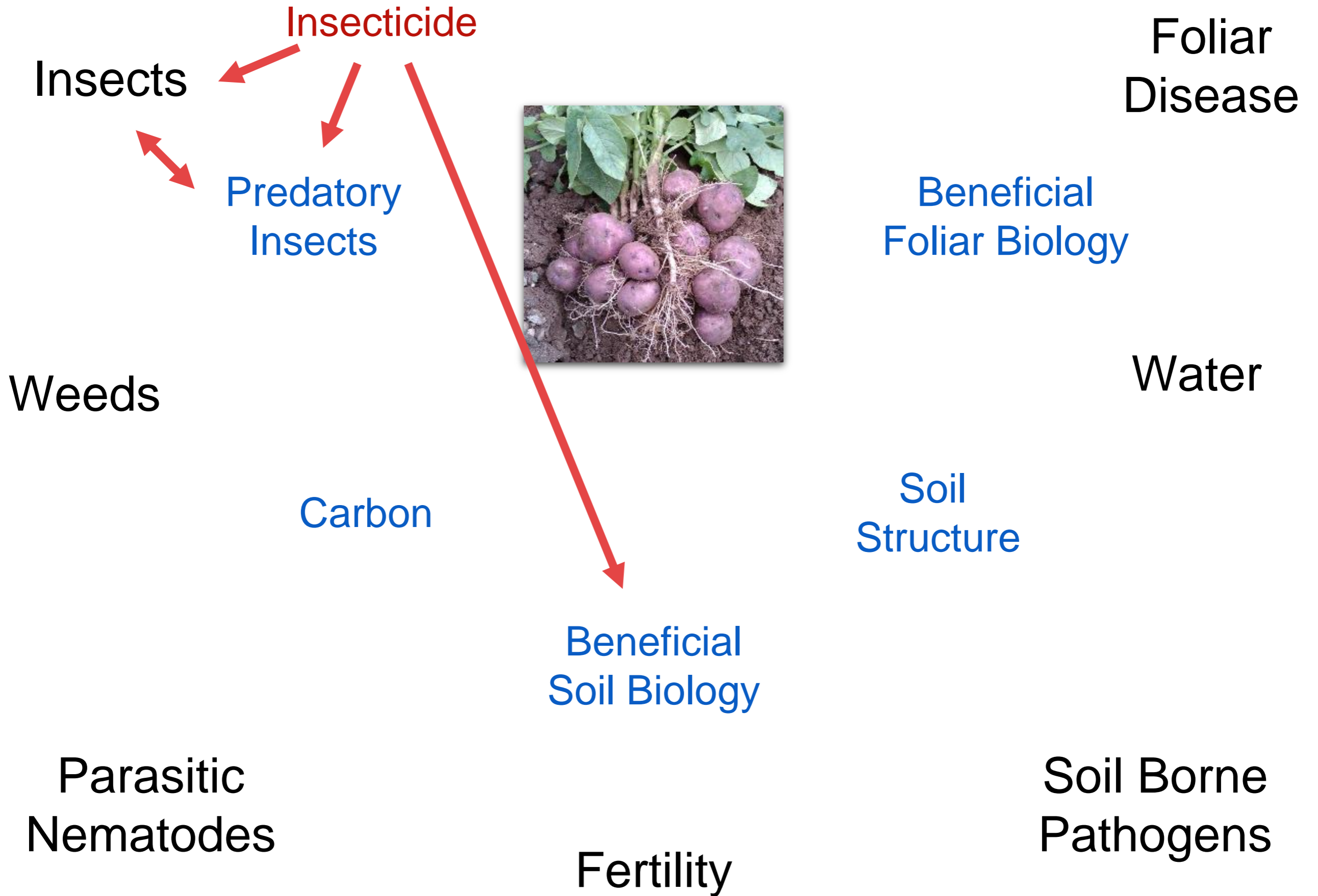
Beneficial
Soil Biology

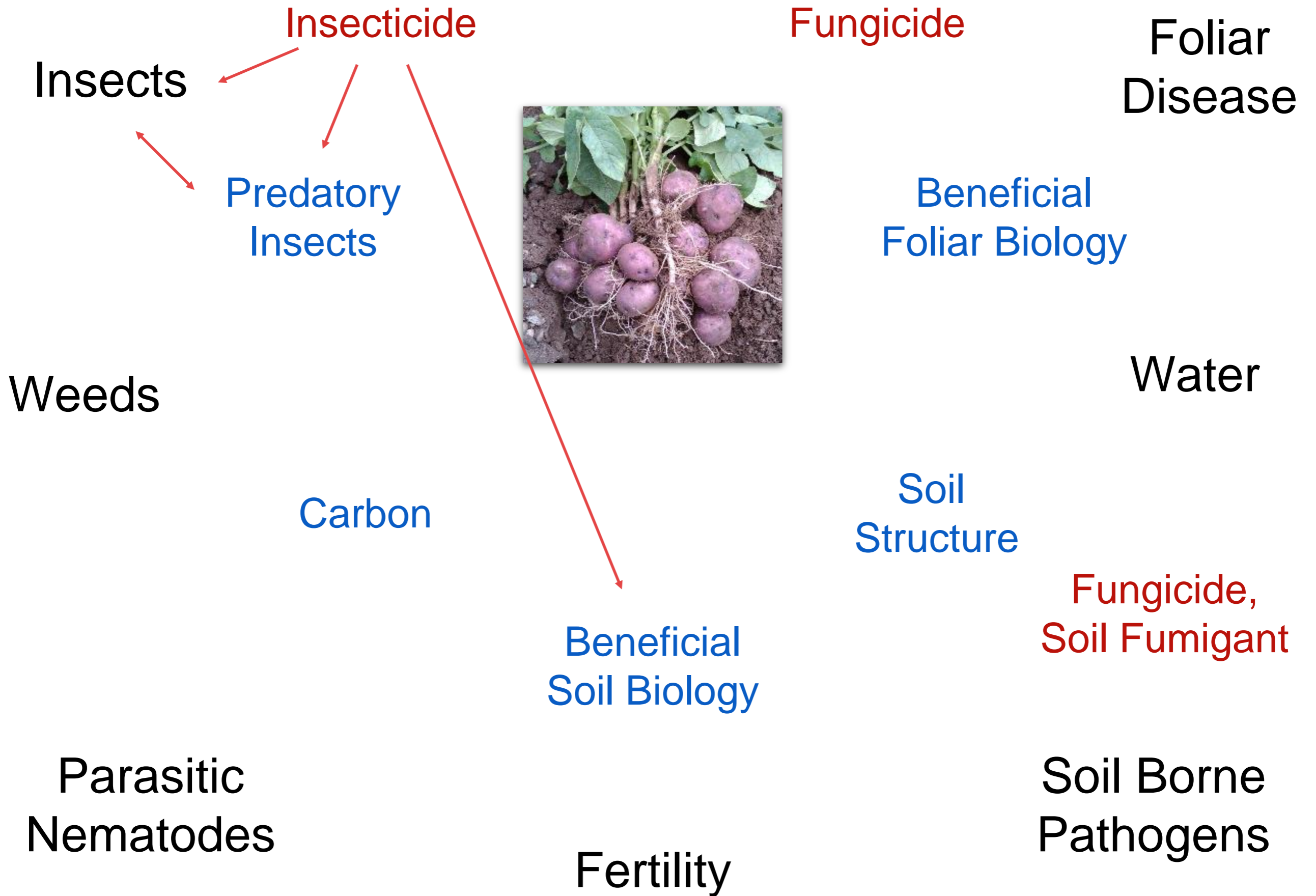
Parasitic
Nematodes

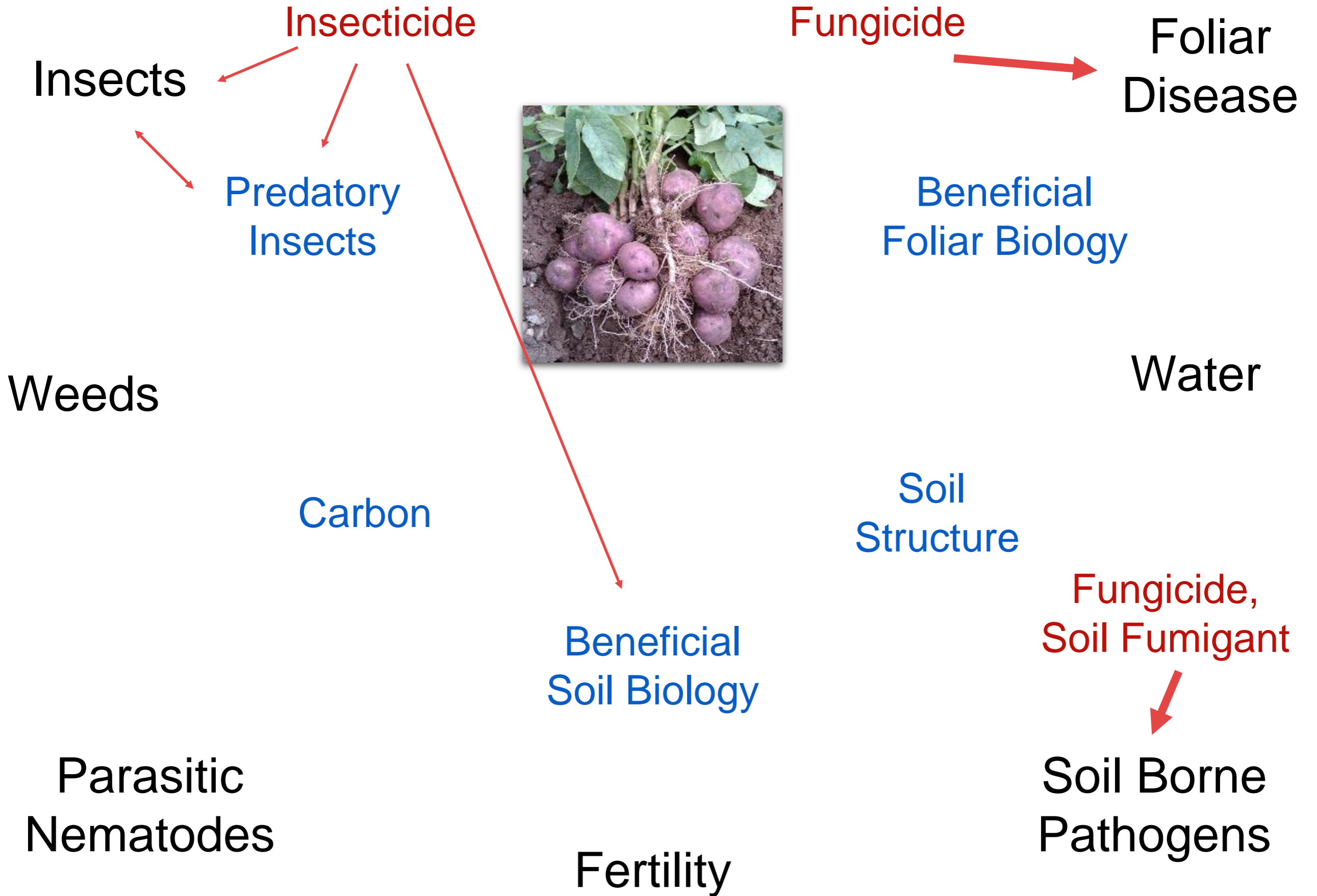
Soil Borne
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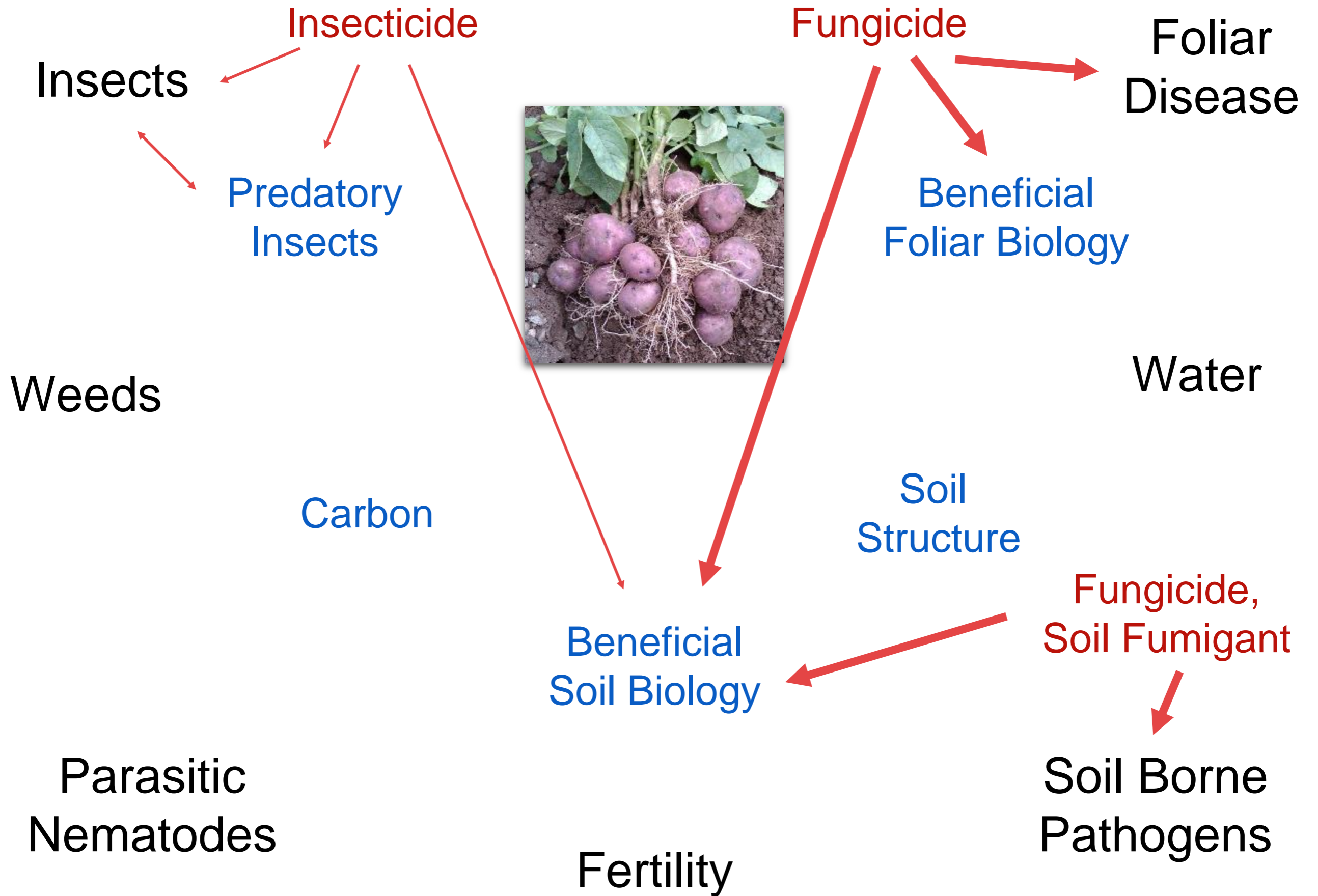
Fertility

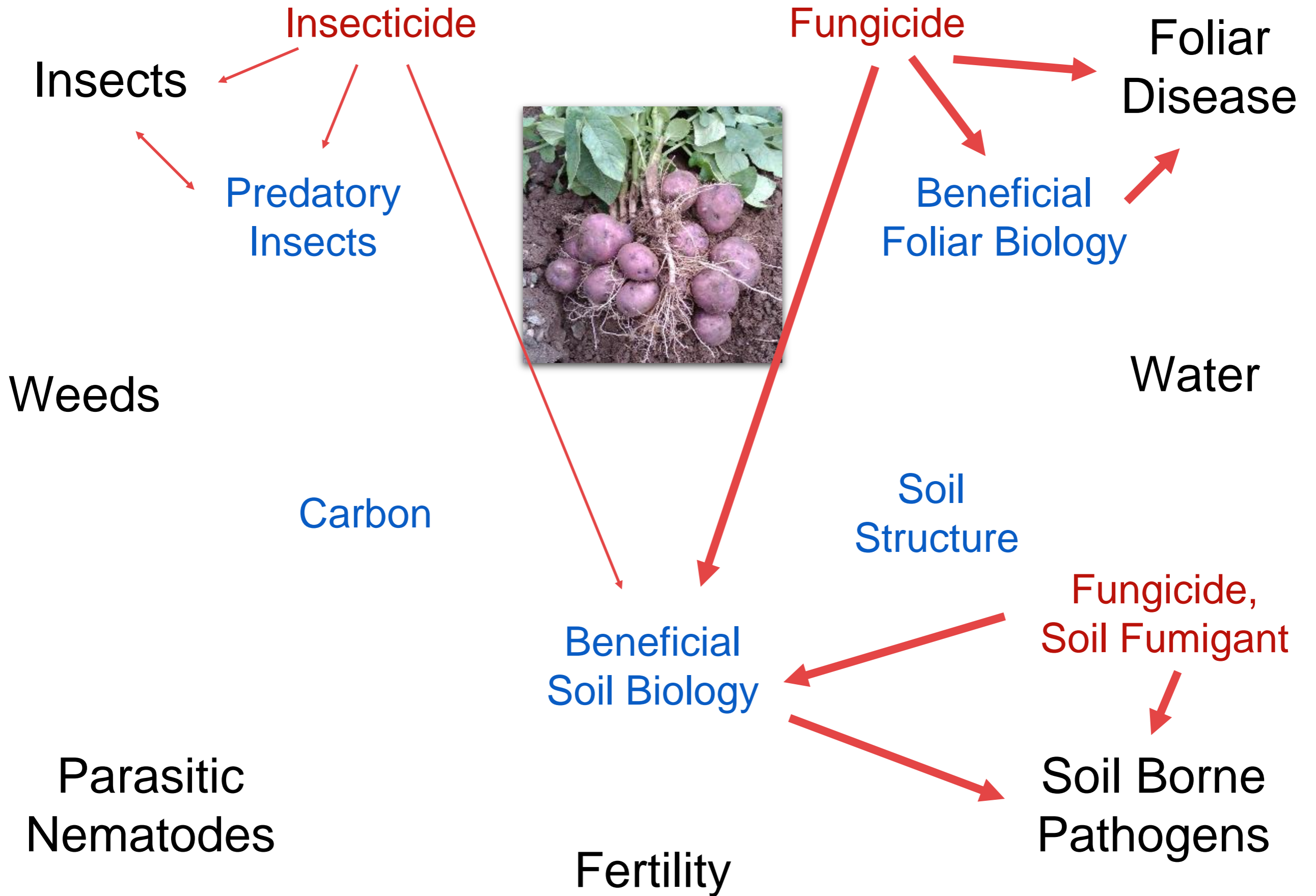


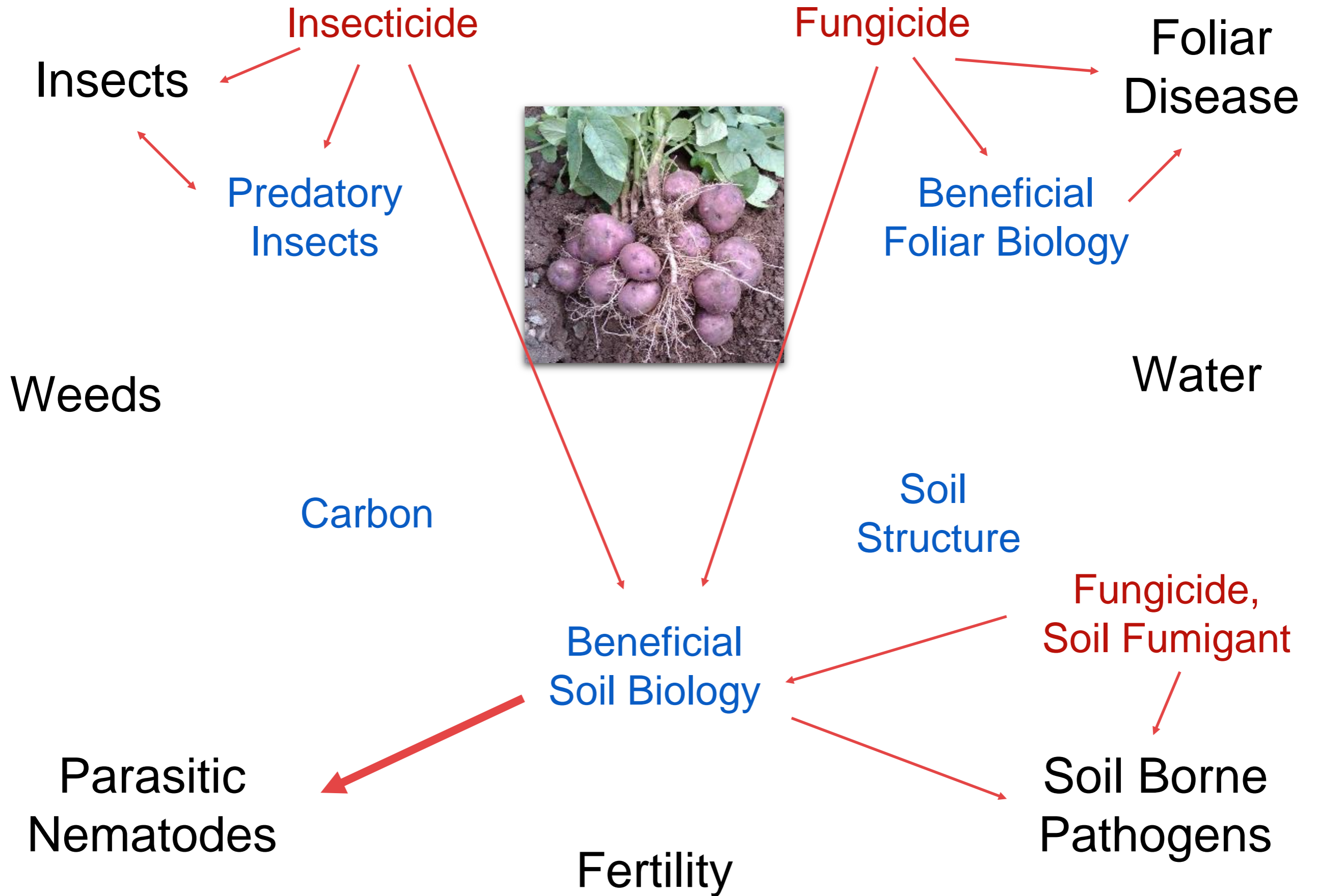


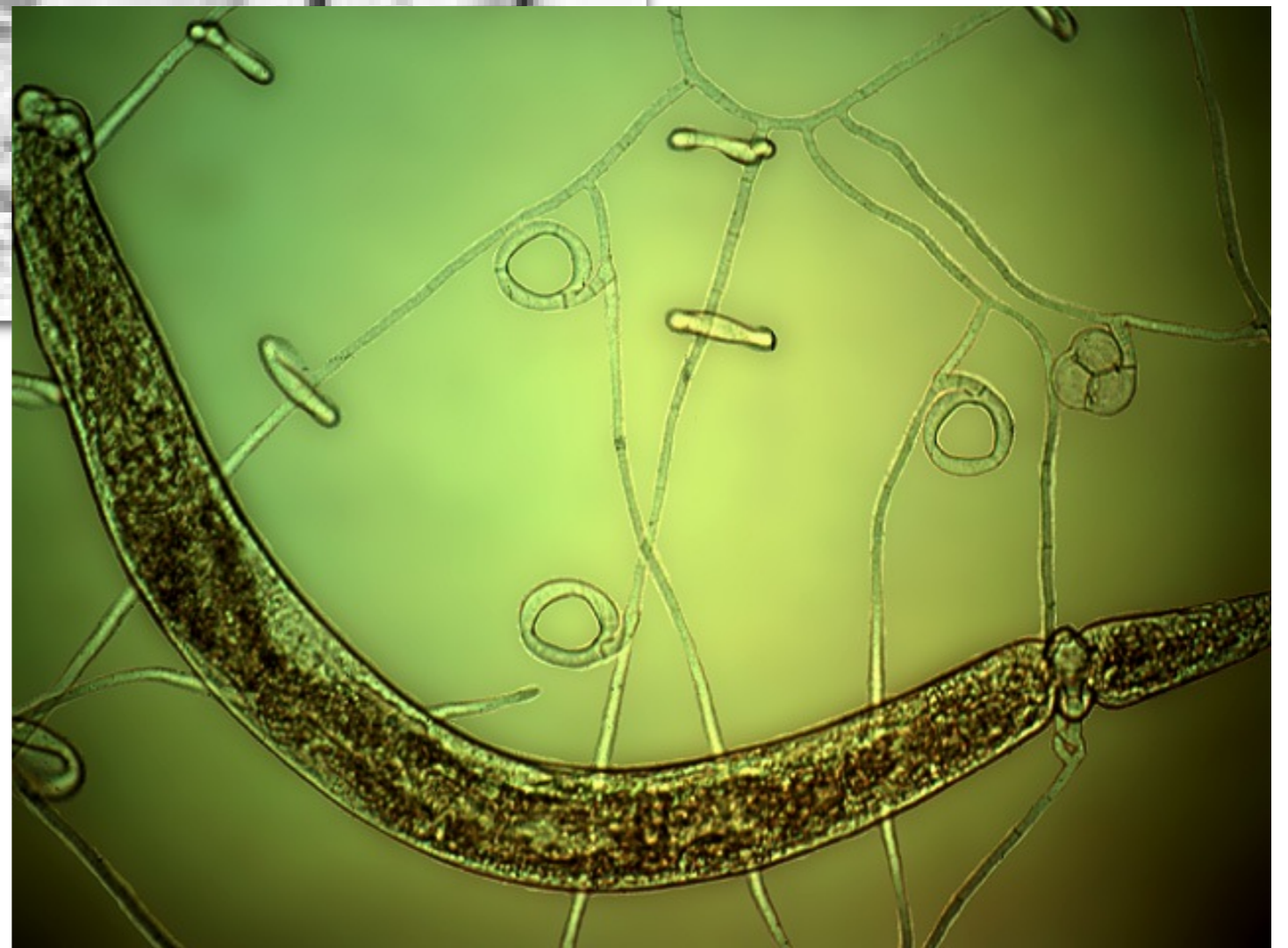
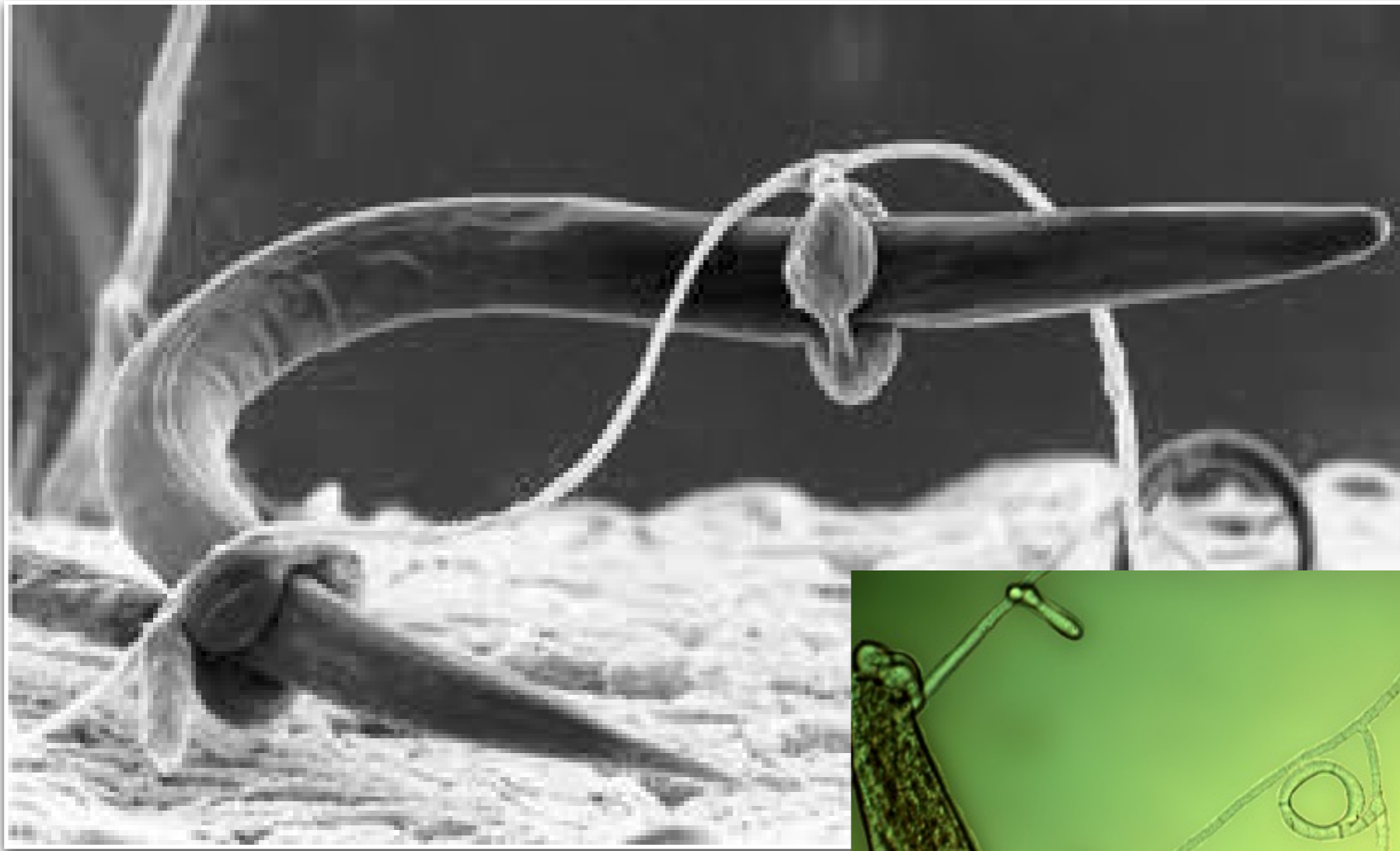


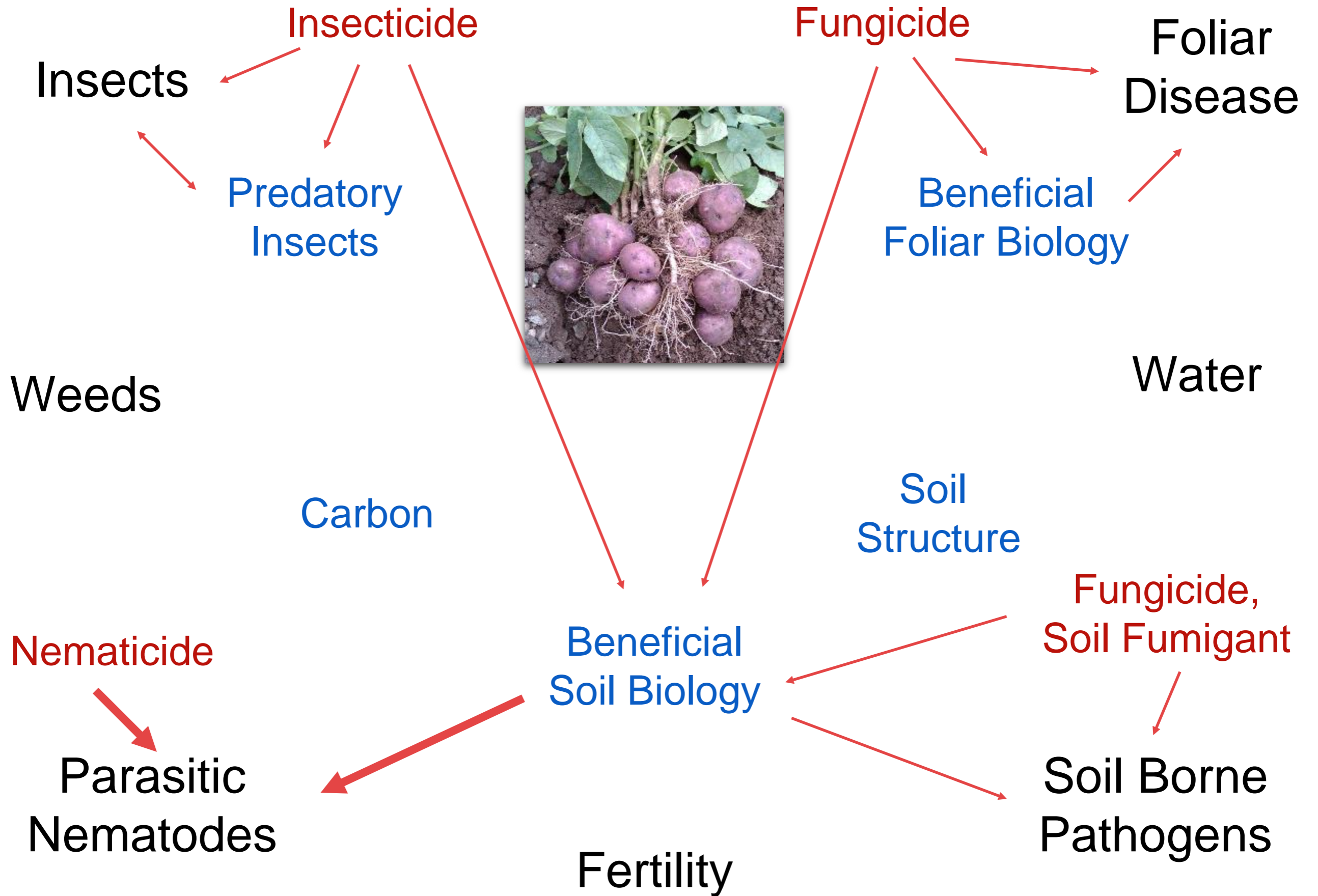


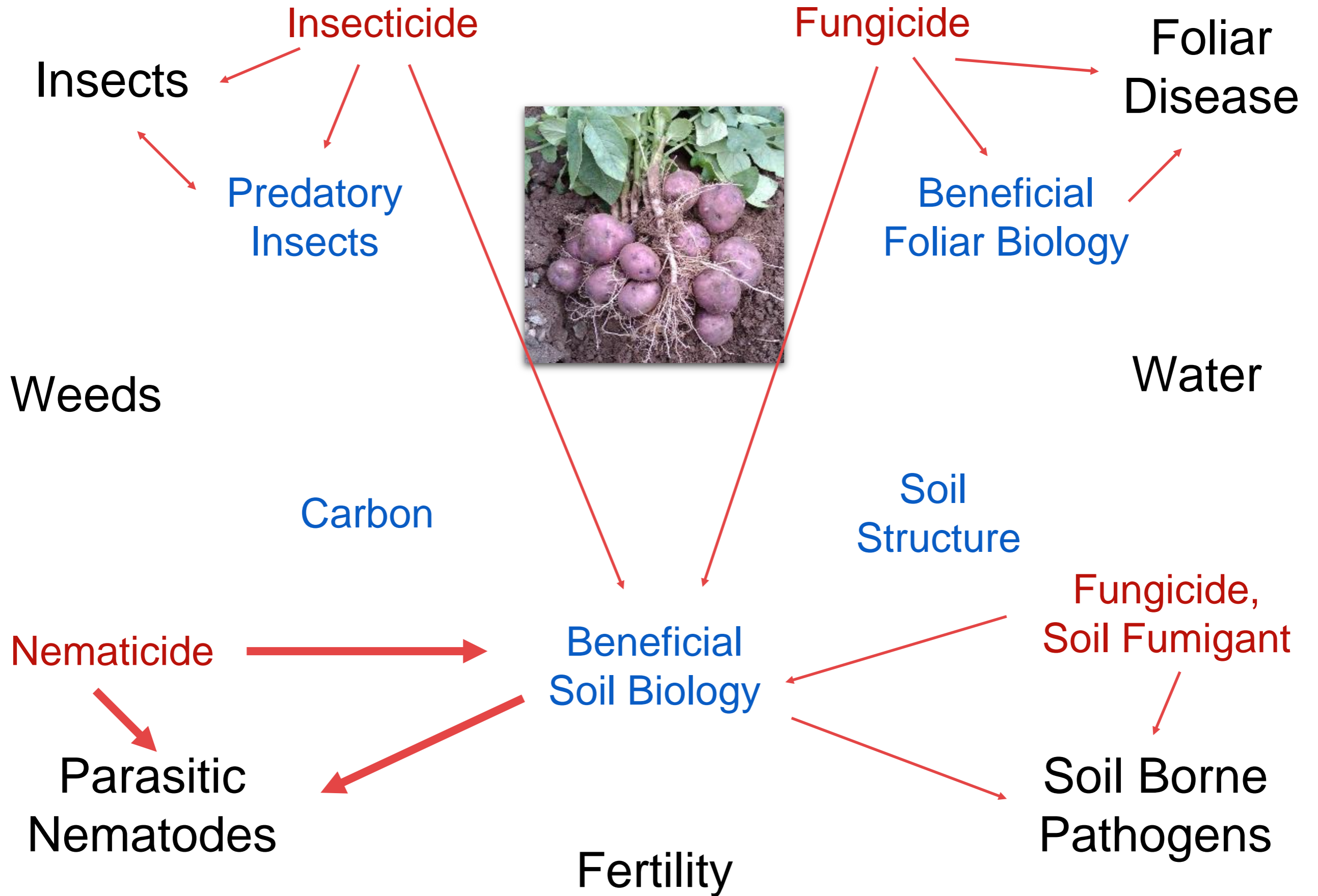


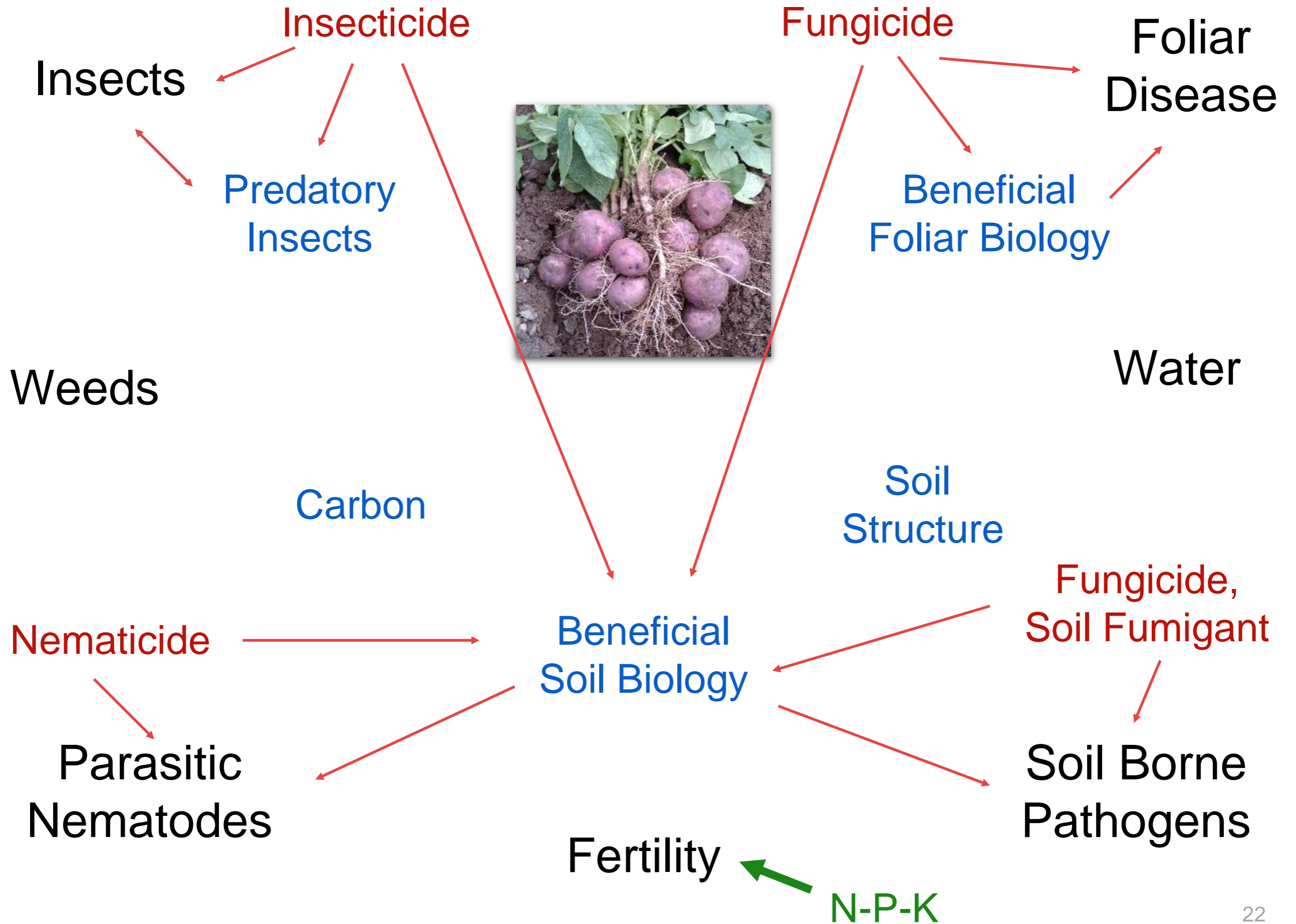


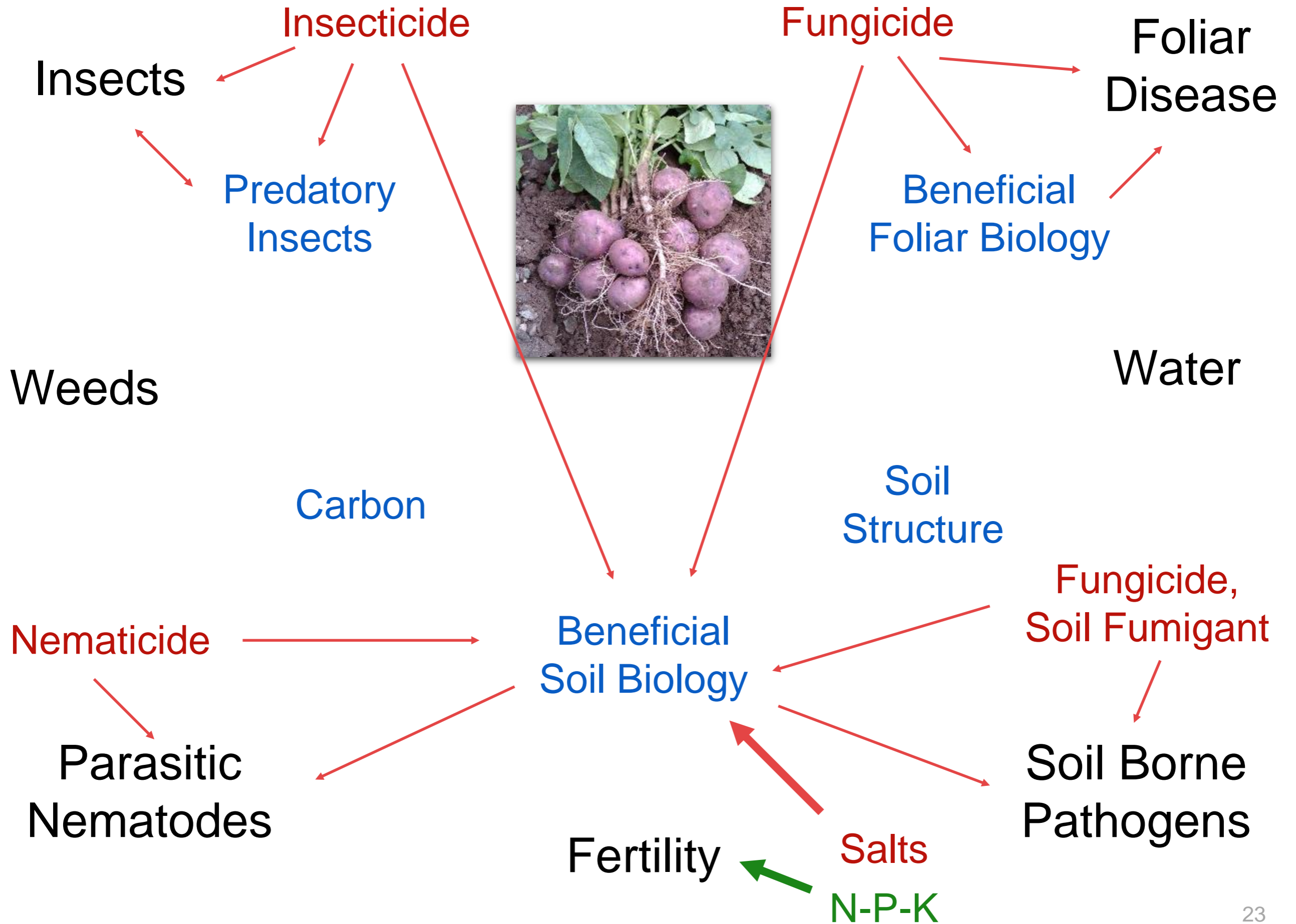


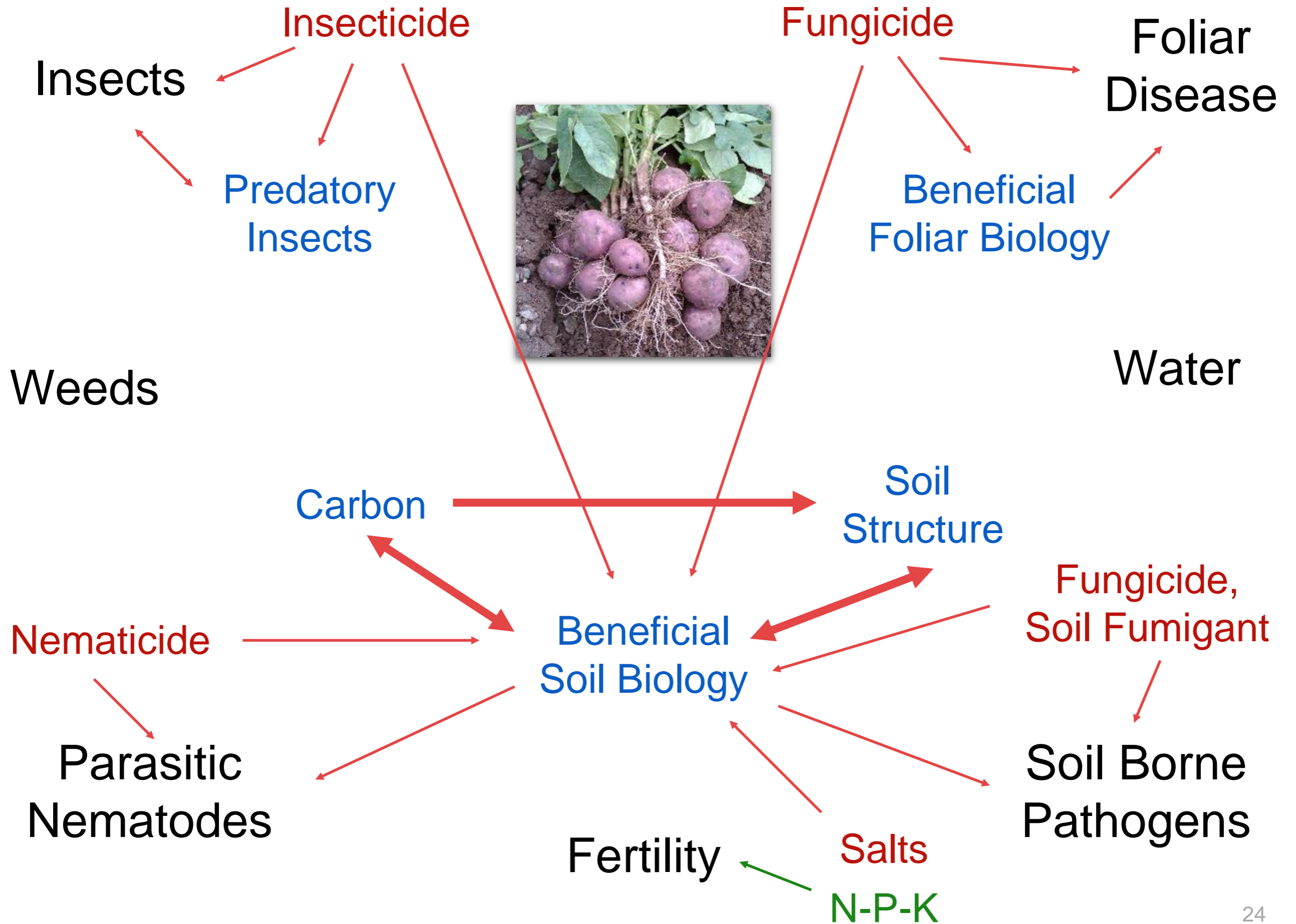


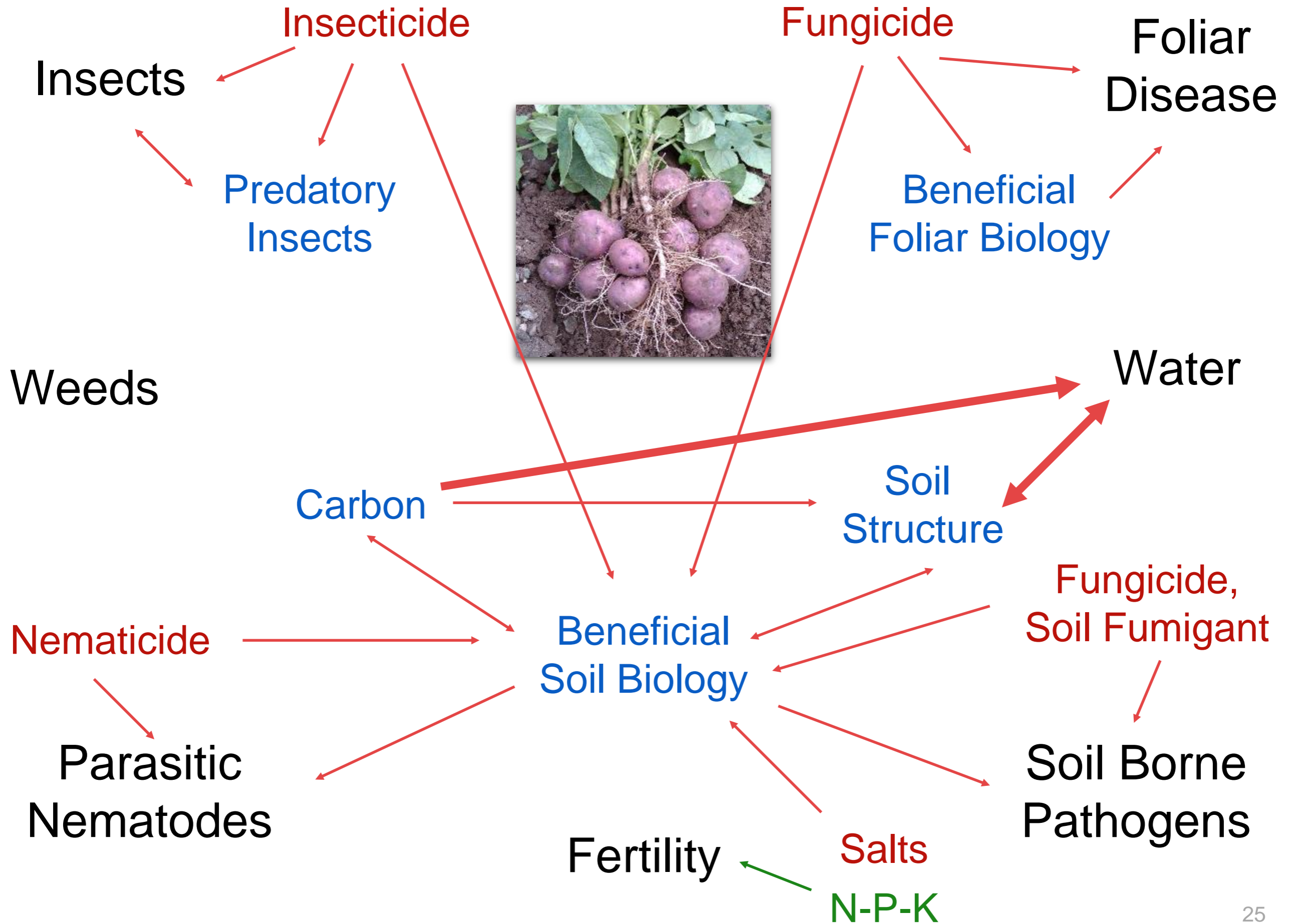




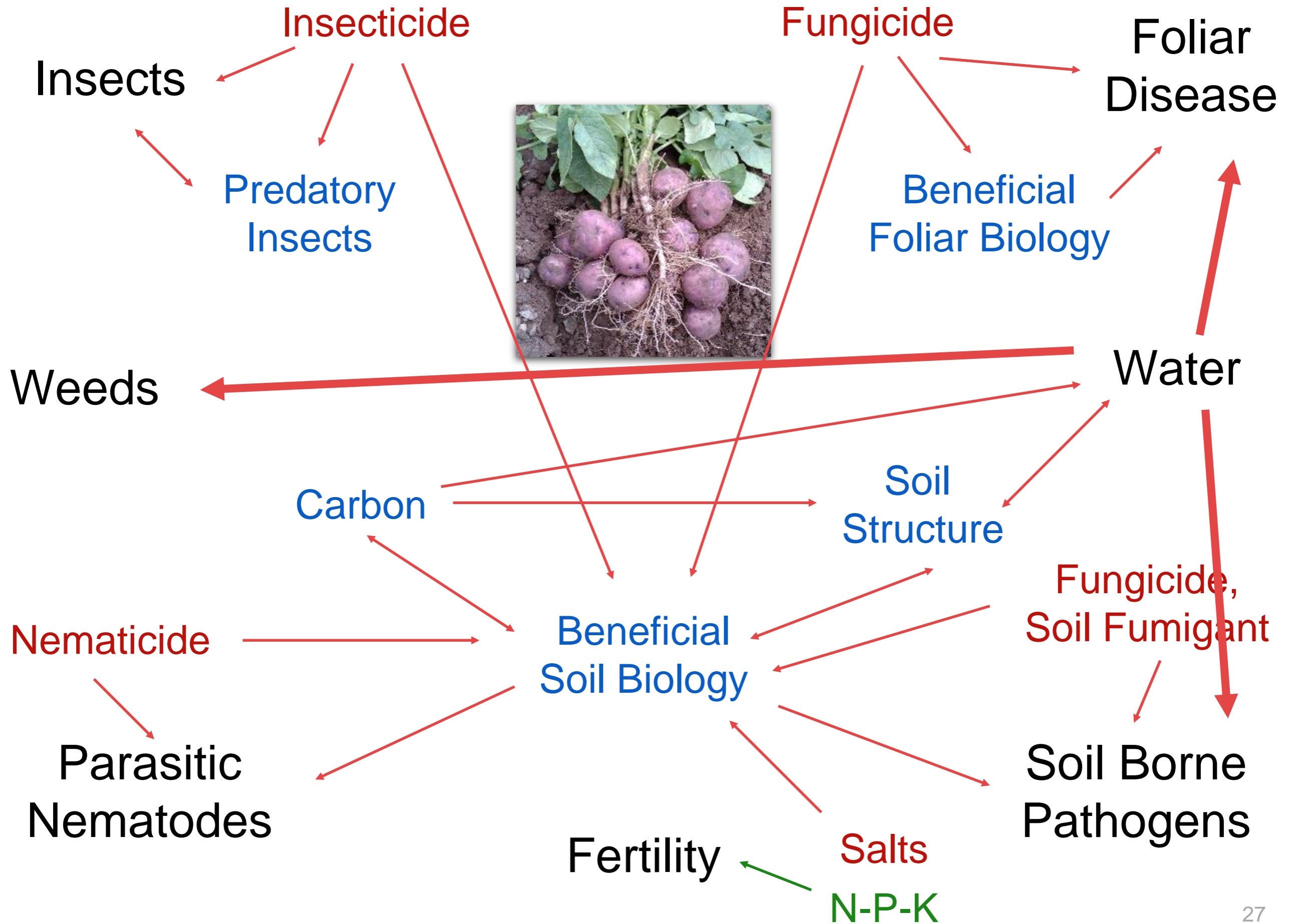


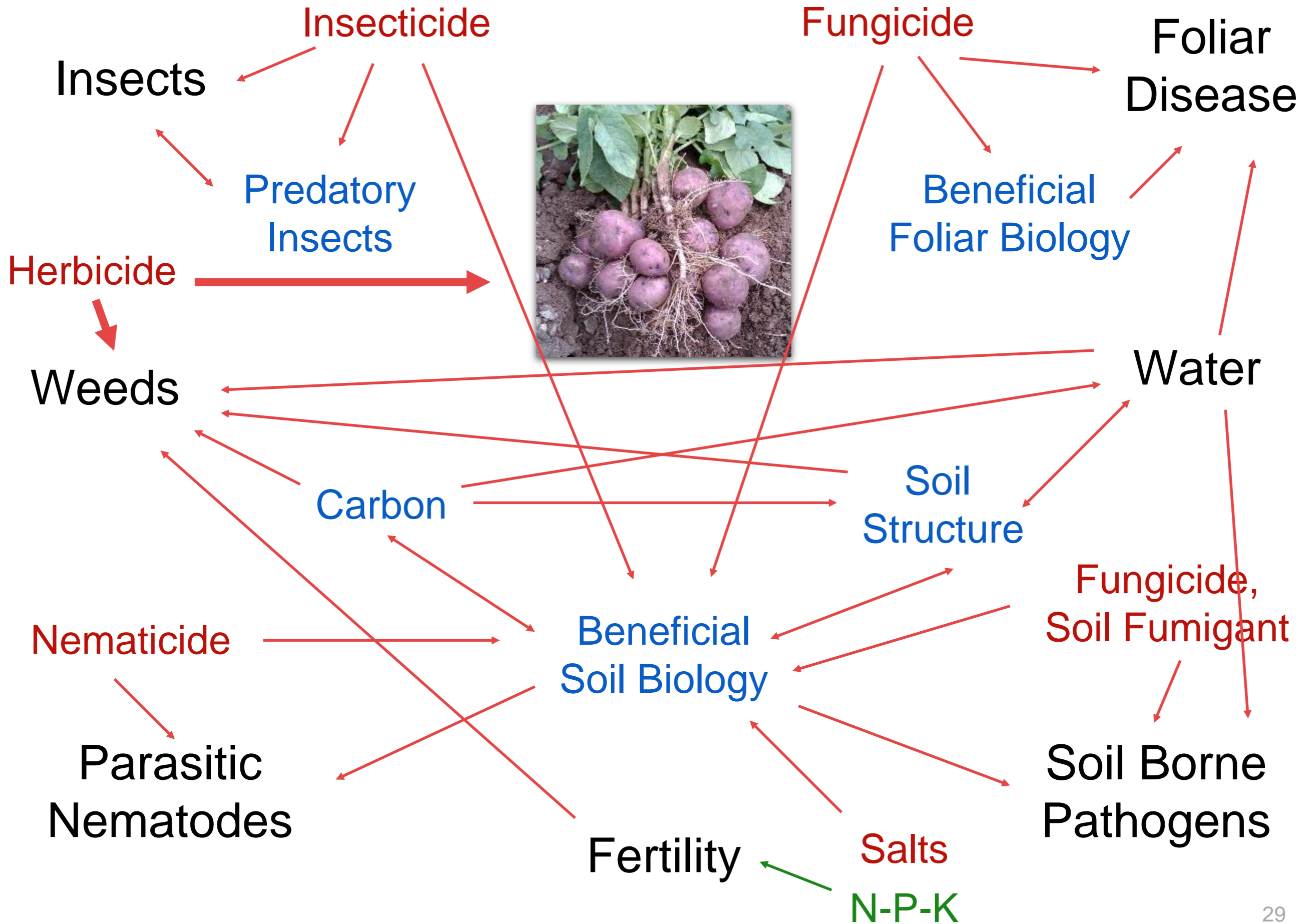


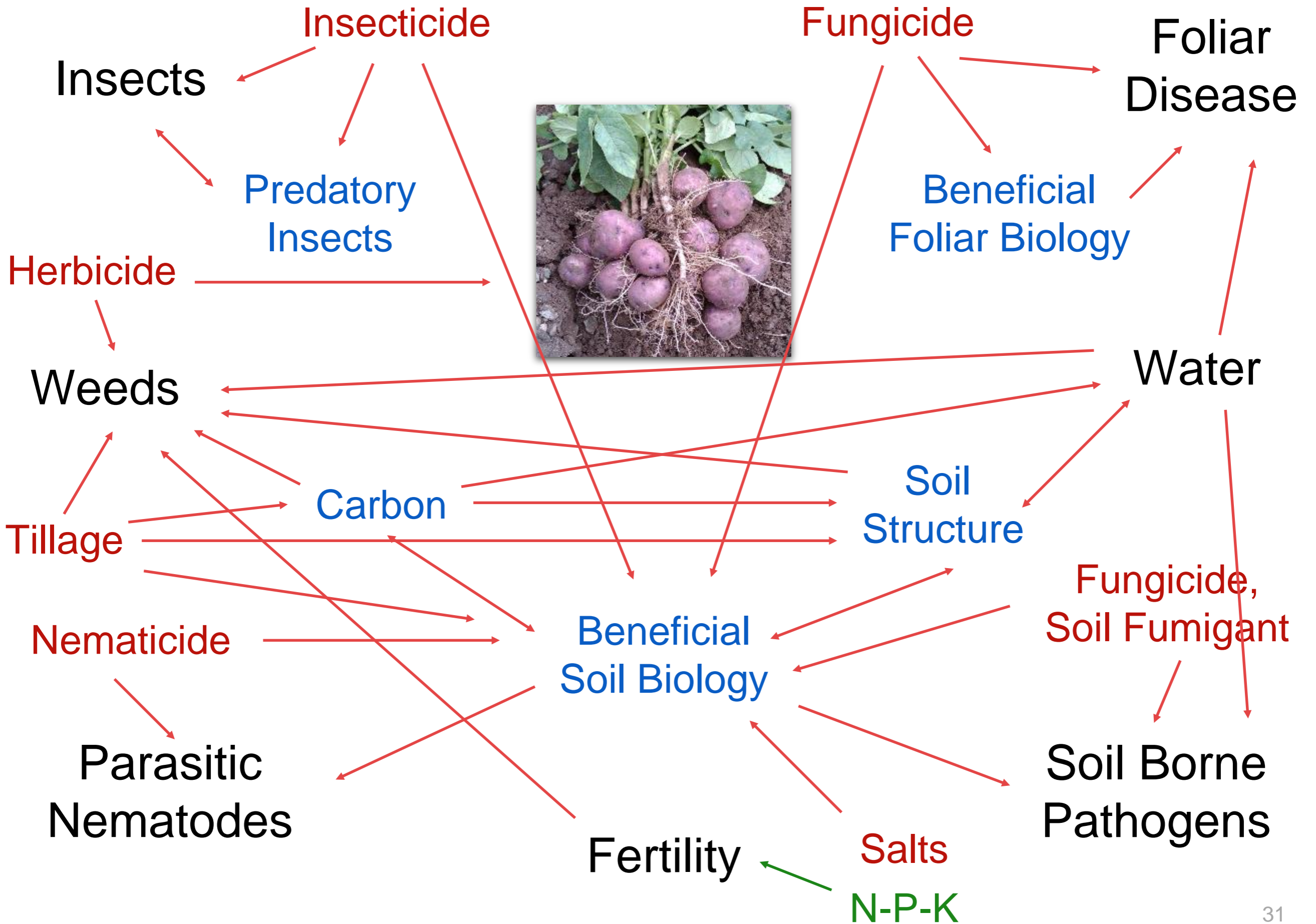












Insects

Foliar
Disease

Predatory
Insects

Beneficial
Foliar Biology

Weeds

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Soil Biology

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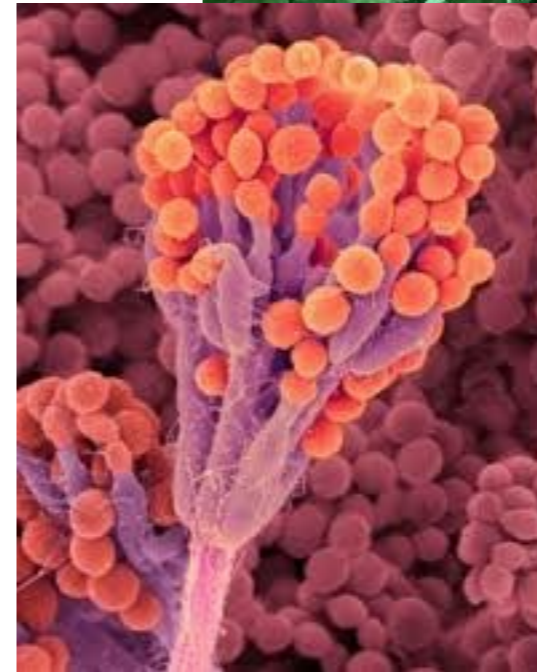
Soil Borne
Pathogens

Soil Primers

Fertility

Soil Primers

- Green Manure Crops
- Companion Crops
- Carbon Based Fertility Inputs (Agrothrive LF, Soyaplex, Compost)
- Diverse Populations of Known Beneficial Bacteria and Fungi (Rutopia Bio +M, Micronoc SA)



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Foliar Disease

Predatory Insects

Beneficial Foliar Biology



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Soil Structure

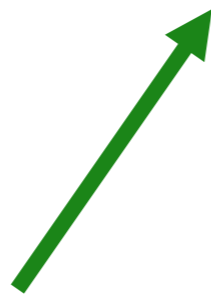
Beneficial Soil Biology

Soil Borne Pathogens

Parasitic Nematodes

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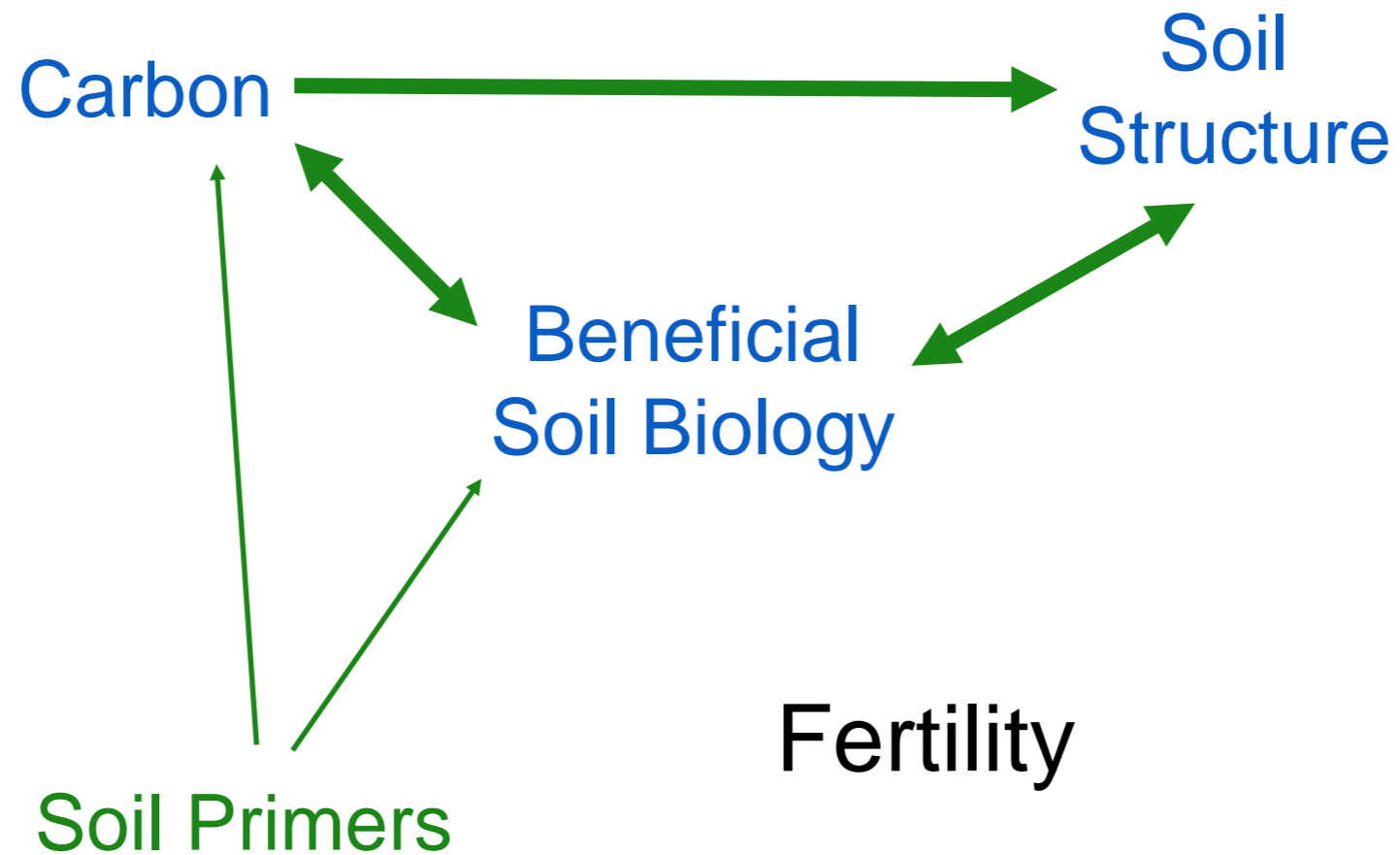
Predatory Insects

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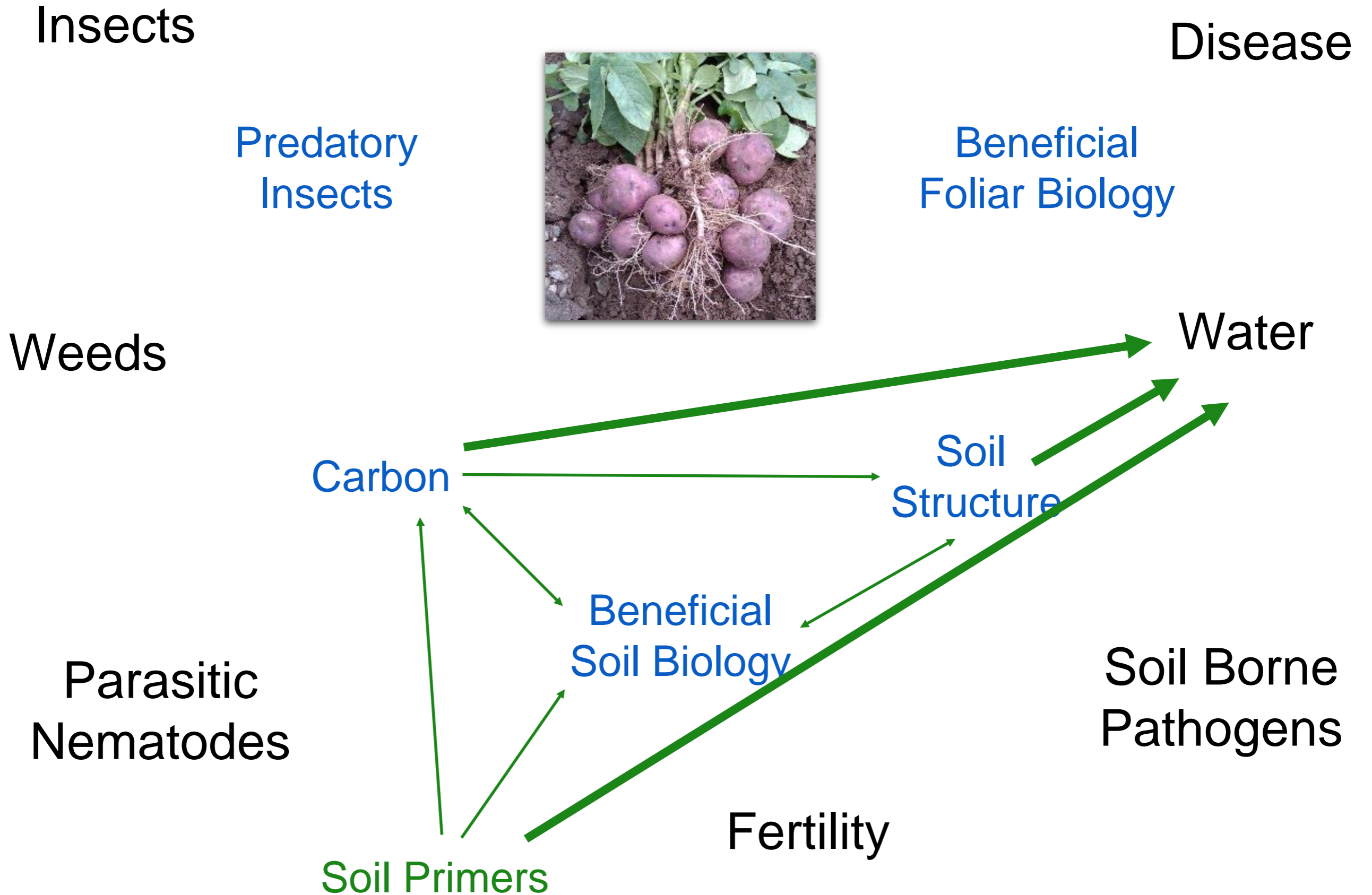
Beneficial Soil Biology

Parasitic Nematodes

Soil Borne Pathogens

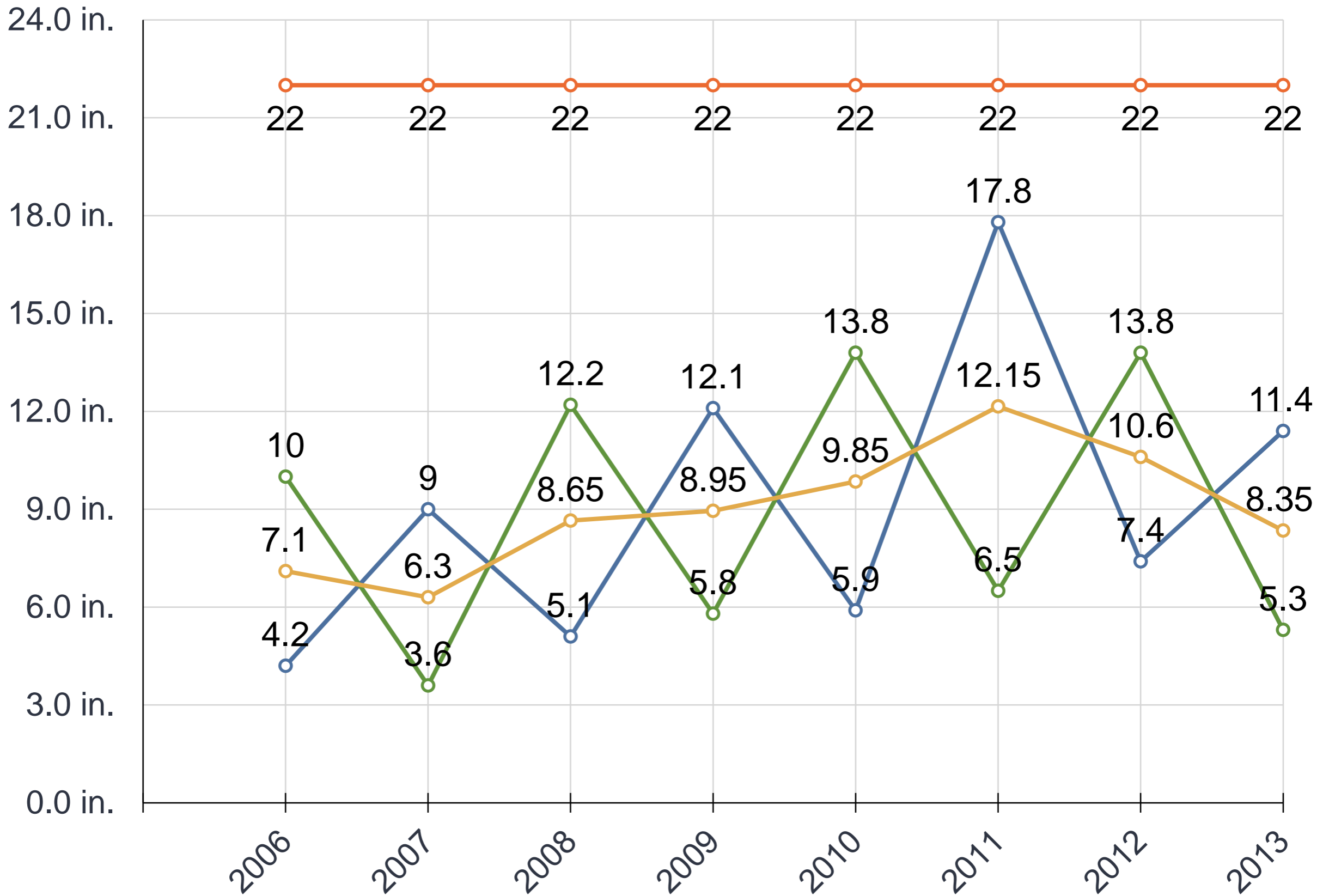
Fertility

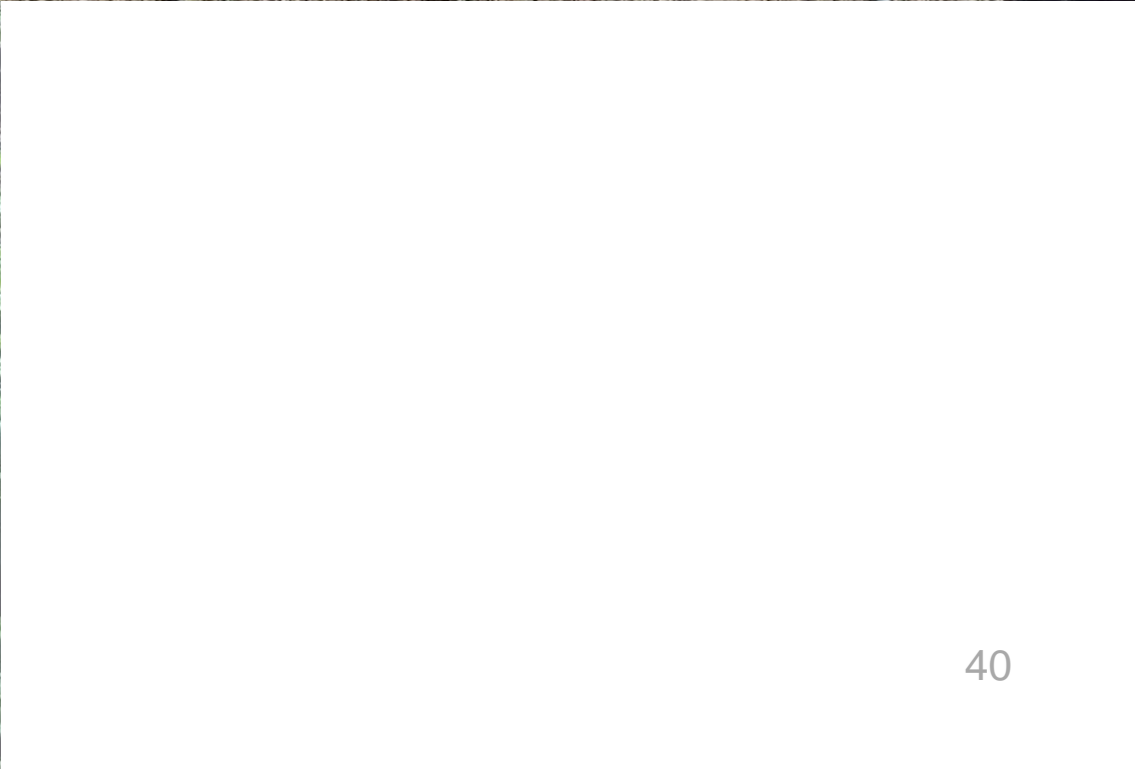
Soil Primers

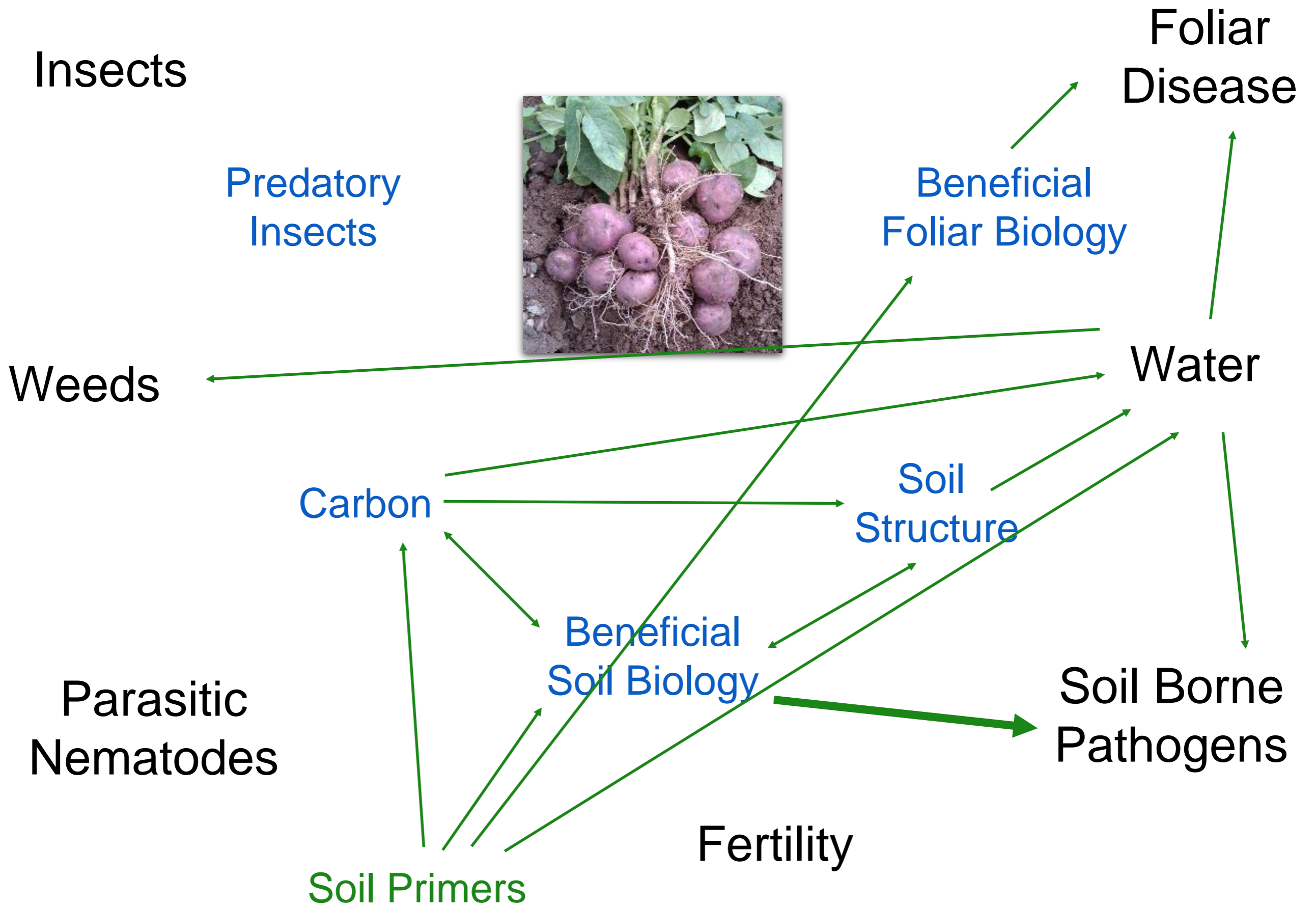


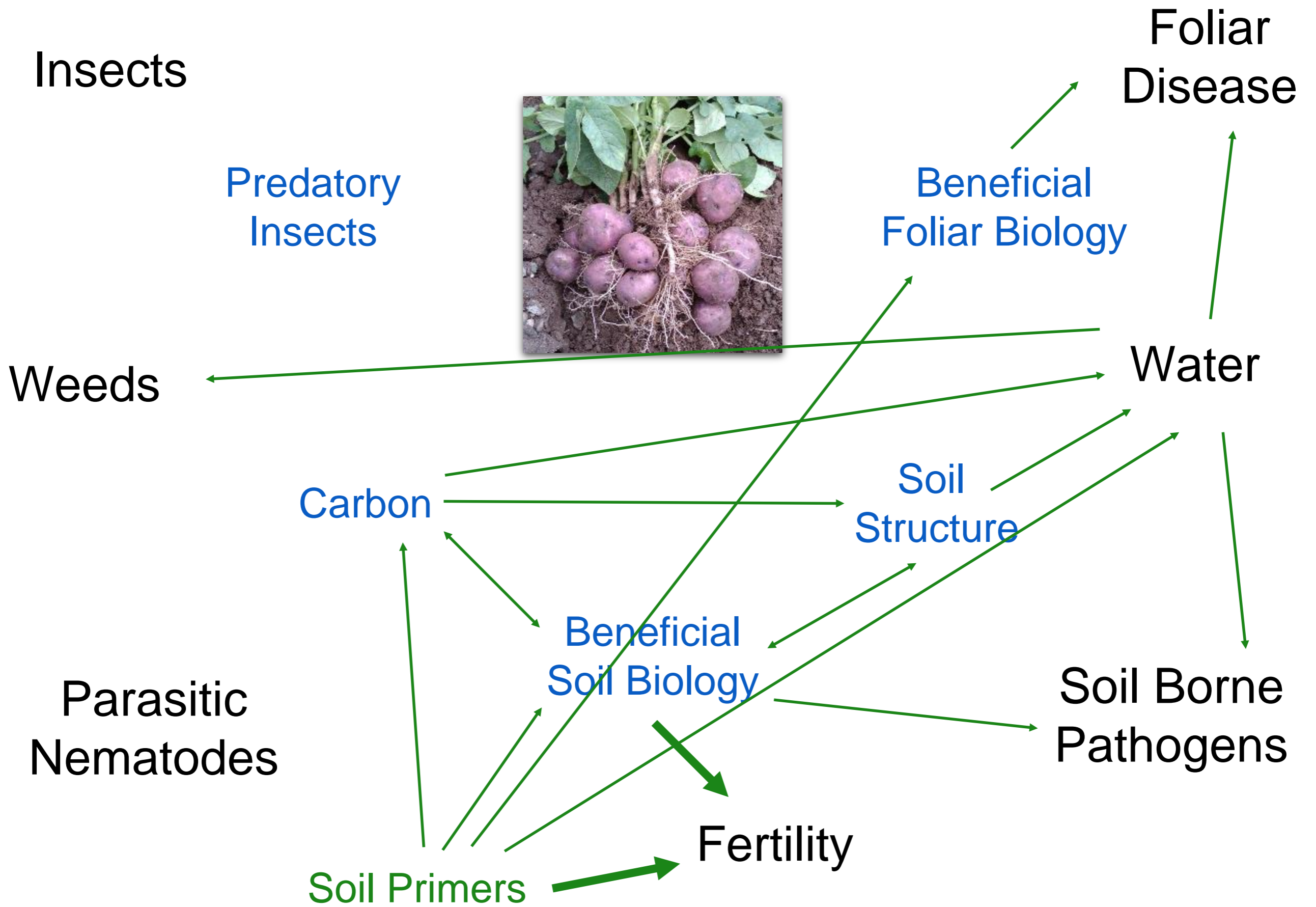
Water Usage

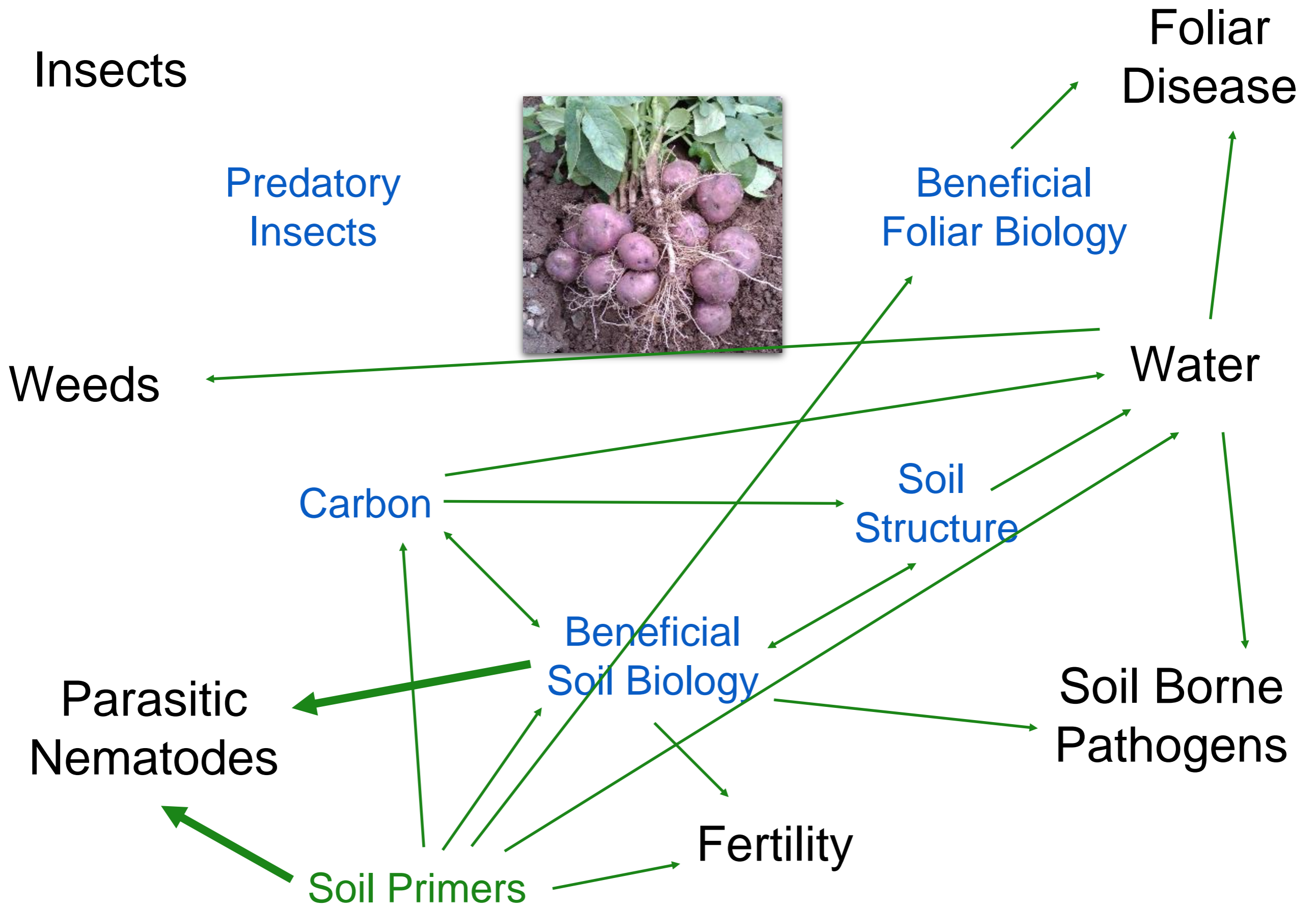
circle #2 circle #3 avg conventional

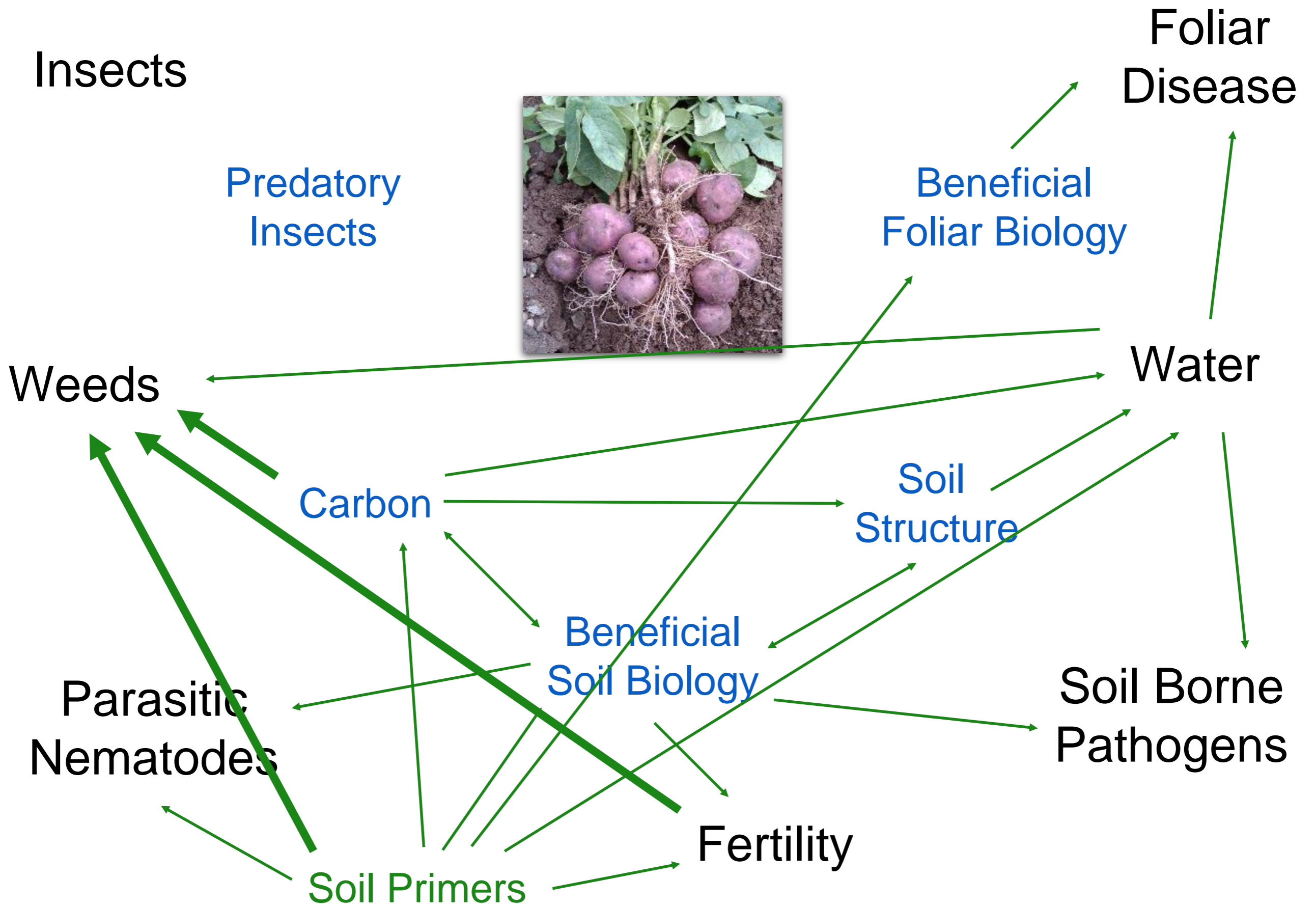


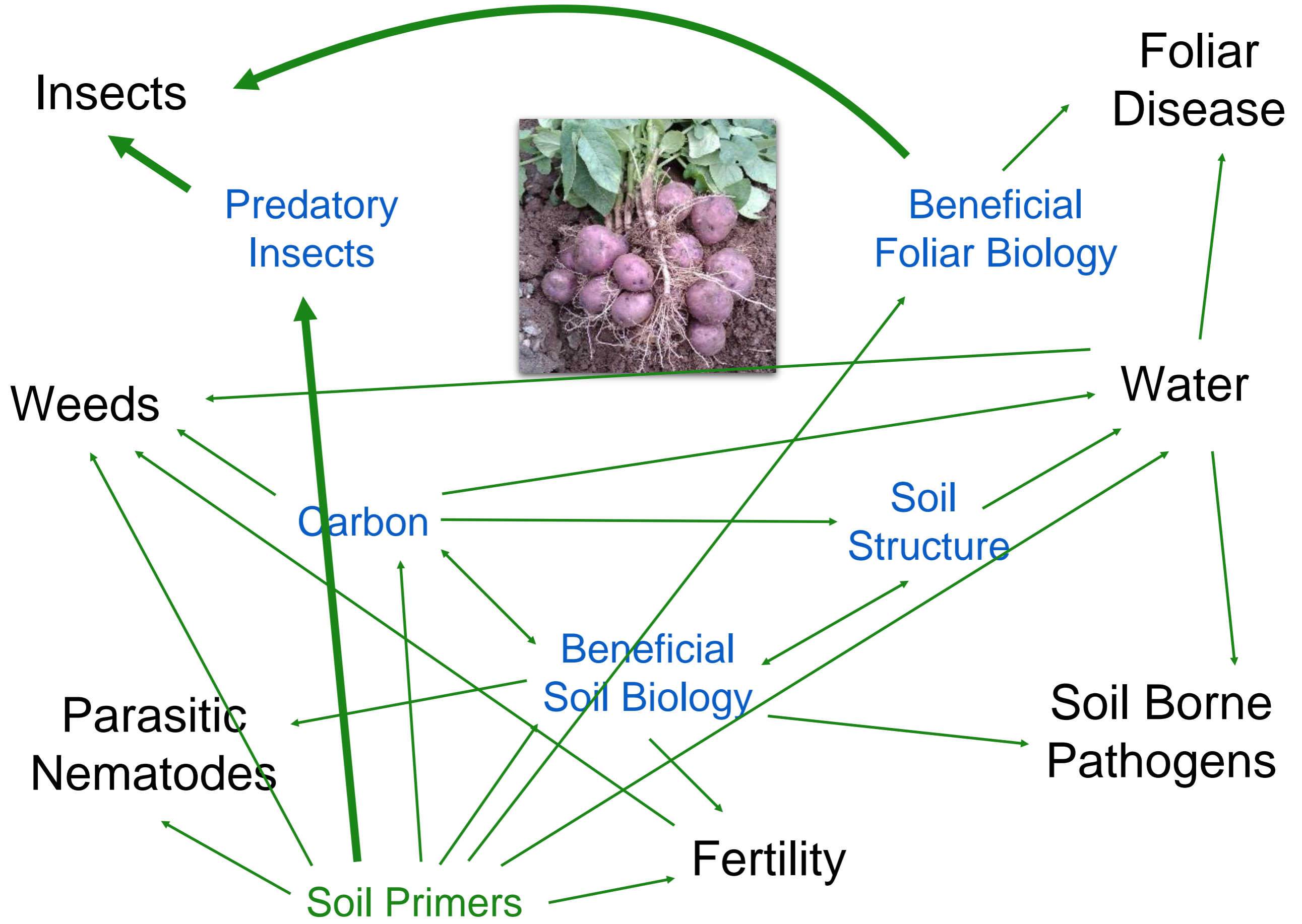












Biological Control of Aphid

- Assassin Bugs
- Bigeyed Bugs
- Damsel Flies
- Ground or Tiger Beetles
- Hover Flies
- Ladybugs
- Lacewings
- Rove Beetles
- Soldier Beetles
- Spiders
- Beauveria bassiana
- Bacillus thuringiensis

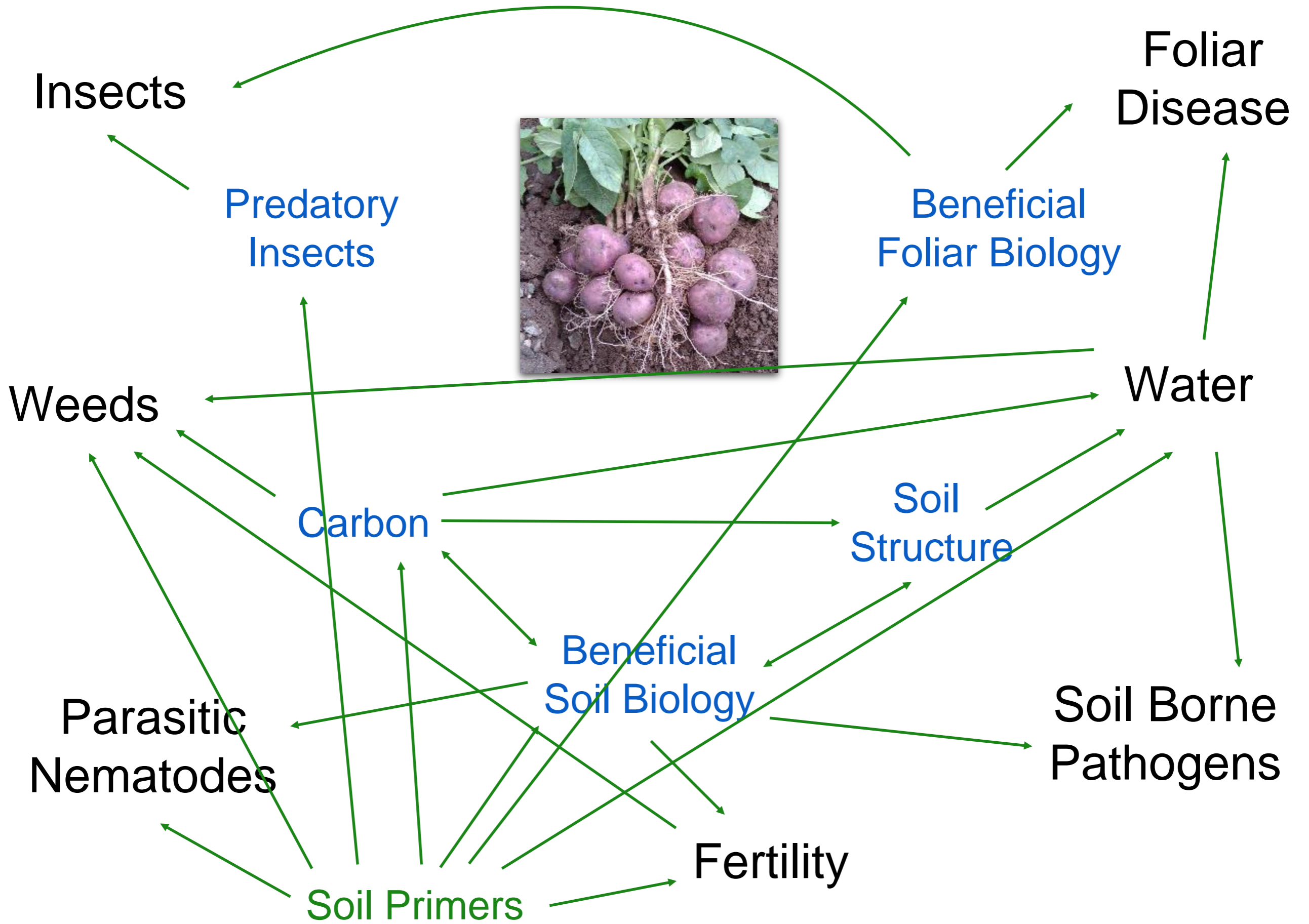






Cosmos, Cornflowers, Marigolds, Calendulas, Four o Clocks, Marigolds, Plains Coreopsis, Forget Me Nots, California Poppy, Baby's Breath, Balsam Impatients, and Sweet Alyssum







The power of diversity

In a linear system, if you put in X and get out Y , then you assume that if you put in $2X$ you will get out $2Y$. But in a nonlinear system you could get something totally different. You need a much more complicated model to understand it.

"Farmacology" by Daphne Miller

Multi-species green manure

- Sudan Grass
- Buckwheat
- Purple top turnips
- Nitro radish
- Lentils
- Forage peas
- Pearl millet
- Ethiopian Cabbage
- Oats
- Safflower



GREEN COVER SEED

COVER CROP STRATEGIES FOR SOIL HEALTH™

Use the yellow areas to select your species and your seeding rate per acre. Use the drop down boxes to select the species you want to include

Cover Crop Mix Potential Ratings (scale of 1-10)											
C:N Ratio	Nitrogen Fix	Grazing	Drought	Frost	Winter	Diversity	Salinity				
30	3.8	10.0	5.0	5.2	2.1	10.0	1.5				
Type	Full Rate	lbs per	% full rate	% by wt	% by # seed	Effect %	Seeds/lb	Seeds per acre	Cost per lb	Seed Cost/acr	
TOTALS		48	211%					1,614,500		\$36.52	
Legumes				40%	7%	24%				\$10.45	
Spring Forage Peas	CS-B	60	10	17%	21%	2%	11%	3,200	32,000	\$0.42	\$4.20
Lentils - spring	CS-B	18	5	28%	10%	5%	8%	15,000	75,000	\$0.65	\$3.25
Chickling Vetch	CS-B	50	4	8%	8%	1%	4%	2,500	10,000	\$0.75	\$3.00
Grasses				42%	59%	51%					\$13.72
Pearl Millet	WS-G	15	6	40%	13%	30%	21%	80,000	480,000	\$1.25	\$7.50
Brown Top Millet	WS-G	15	3	20%	6%	22%	14%	120,000	360,000	\$0.73	\$2.19
Oats	CS-G	100	7	7%	15%	7%	11%	15,000	105,000	\$0.29	\$2.03
BMR Grazing Corn	WS-G	30	4	13%	8%	1%	4%	2,500	10,000	\$0.50	\$2.00
Brassicas				8%	29%	18%					\$8.75
Nitro Radish	CS-B	8	1.25	16%	3%	2%	2%	25,000	31,250	\$2.50	\$3.13
Impact Forage Collards	CS-B	8	1.25	16%	3%	14%	8%	175,000	218,750	\$2.50	\$3.13
Turnip (purple top)	CS-B	6	1.25	21%	3%	13%	8%	170,000	212,500	\$2.00	\$2.50
Other Broadleaves				10%	5%	8%					\$3.60
Buckwheat	WS-B	30	4	13%	8%	4%	6%	18,000	72,000	\$0.75	\$3.00
Sunflower	WS-B	8	1	13%	2%	0%	1%	8,000	8,000	\$0.60	\$0.60
Inoculant, Mixing and Bagging Cost/a	\$3.82			Seed Cost/acre:			\$36.52	Total Cost per Acre:		\$40.34	
Name:	Brendon Rockey			Phone:							
Address:					City, State, Zip:						
Mix:	Green Manure Grazer			Acres to plant:		200.00					
Date:	5/21/13		Total Pounds of Green Cover SmartMix Needed:			9,550					
				Total Seed Cost of Green Cover SmartMix:			\$7,304.00				
Bulk, Totes or 50# Sack:	50# sacks		Inoculant cost (estimate per pound):			\$0.02	(subtotal):		\$191.00		
				Mixing cost (per pound):			\$0.03	(subtotal):		\$286.50	
				Bagging cost (per pound):			\$0.03	(subtotal):		\$286.50	
				Shipping cost estimate (per pound):			\$0.000	(subtotal):		\$0.00	
				Total Cost with estimated shipping:			\$8,068.00				

Cool Season
Broad-leafs

Cool Season
Grasses

Warm Season
Broad-leafs

Warm Season
Grasses

Cool Season
Broad-leafs

Peas
Lentils
Radishes
Turnips
Ethiopian Cabbage

Cool Season
Grasses

Oats

Warm Season
Broad-leafs

Buckwheat
Safflower

Warm Season
Grasses

Sudan Grass
Pearl Millet

Cool Season Broad-leafs

Peas *
Lentils *
Radishes
Turnips
Ethiopian Cabbage

Cool Season Grasses

Oats

Warm Season Broad-leafs

Buckwheat
Safflower

Warm Season Grasses

Sudan Grass
Pearl Millet

Buckwheat:

Mobilization of P,
Flowers for attracting
predators

Radish, Turnip:

Deep tillage,
Nitrogen scavenger
Weed suppression

Lentils, Peas:

Nitrogen fixers

Sudan Grass:

Nematode suppression
Subsoil conditioner

Multi Species Green Manure

Mobilization of P,

Flowers for attracting
predators

Deep tillage,

Nitrogen scavenger

Nematode suppression

Weed suppression

Nitrogen fixers

Subsoil conditioner

Incorporation





Diversity ?

• Potatoes

• Barley

Diversity ?

• Potatoes

• Sudan

Diversity ?

- Potatoes

- Sudan
- Buckwheat
- Turnip
- Radish
- Common vetch
- Peas
- Oats

Diversity ?

- Potatoes

- Sudan
- Turnip
- Buckwheat
- Peas
- Pearl Millet
- Oats
- Radish
- Lentils
- Safflower
- Ethiopian Cabbage

Diversity ?

- Potatoes

- Sunflower

- Peas

- Buckwheat

- Oats

- Pearl Millet

- Lentils

- Radish

- Collards

- Chickling
Vetch

- Corn

- Turnip

Diversity ?

- Potatoes

- Chickling Vetch
- Desi Chick Pea
- Pearl Millet
- Brown Top Millet
- Buckwheat
- BMR Graze Corn
- Radish
- Broadleaf Mustard
- Impact Forage Collards
- Purple Top Turnip
- Peas
- Oats
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- Flax
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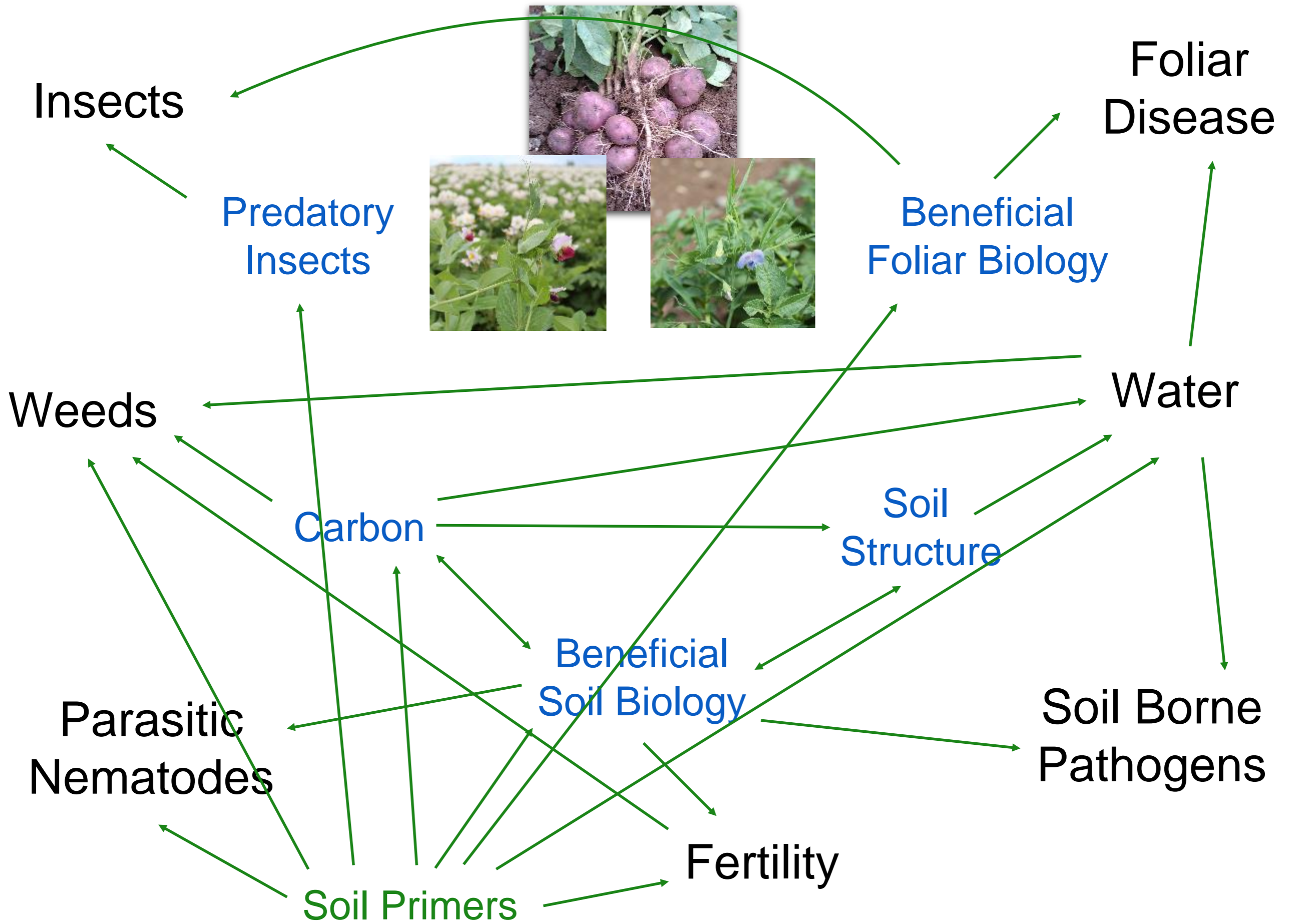


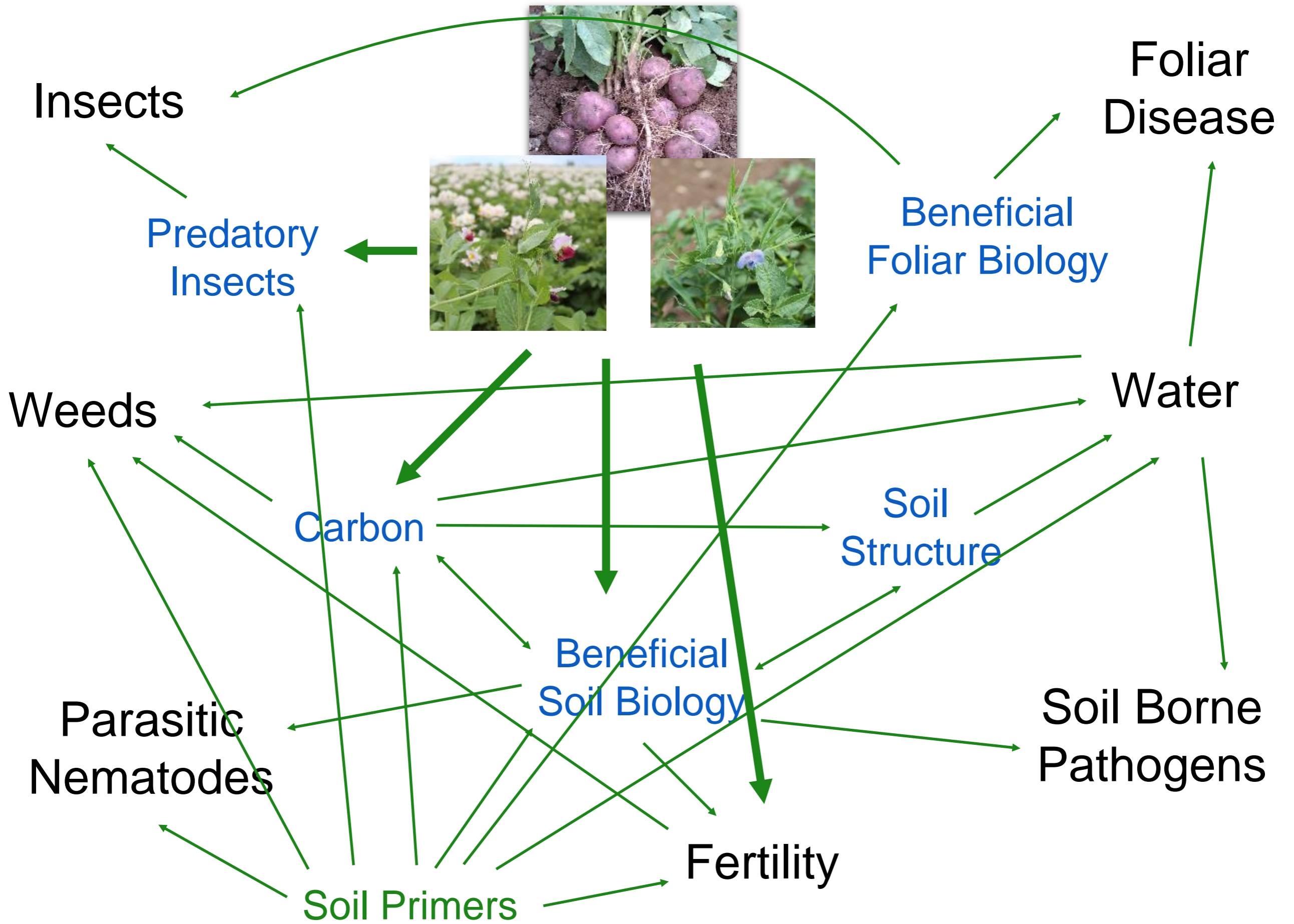


Diversity ?

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Diversity ?

- Potatoes

- Peas

- Chickling Vetch

- Buckwheat

- Desi Chick Pea

- Persian Clover

- Berseem Clover

- Crimson Clover

- Brown Mustard

- White Mustard

- Nitro Radish

- Phacaleia

- Woolly Pod Vetch

- Lentils

- Spring Forage Peas

- Buckwheat

- Flax

- Sunflower

- "Flower Mix"

- Chickling Vetch

- Desi Chick Pea

- Pearl Millet

- Brown Top Millet

- Buckwheat

- BMR Graze Corn

- Radish

- Broadleaf Mustard

- Impact Forage Collards

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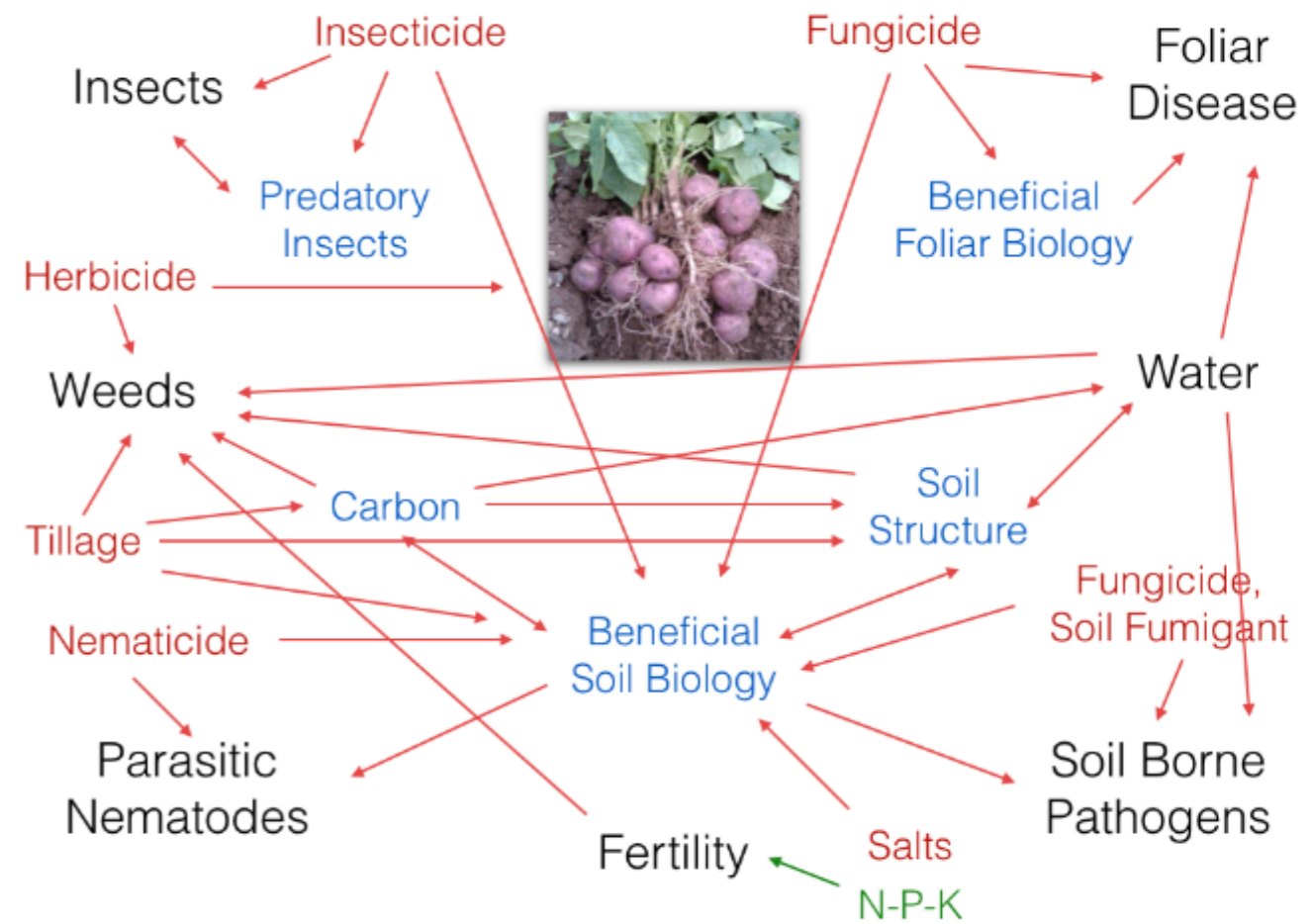
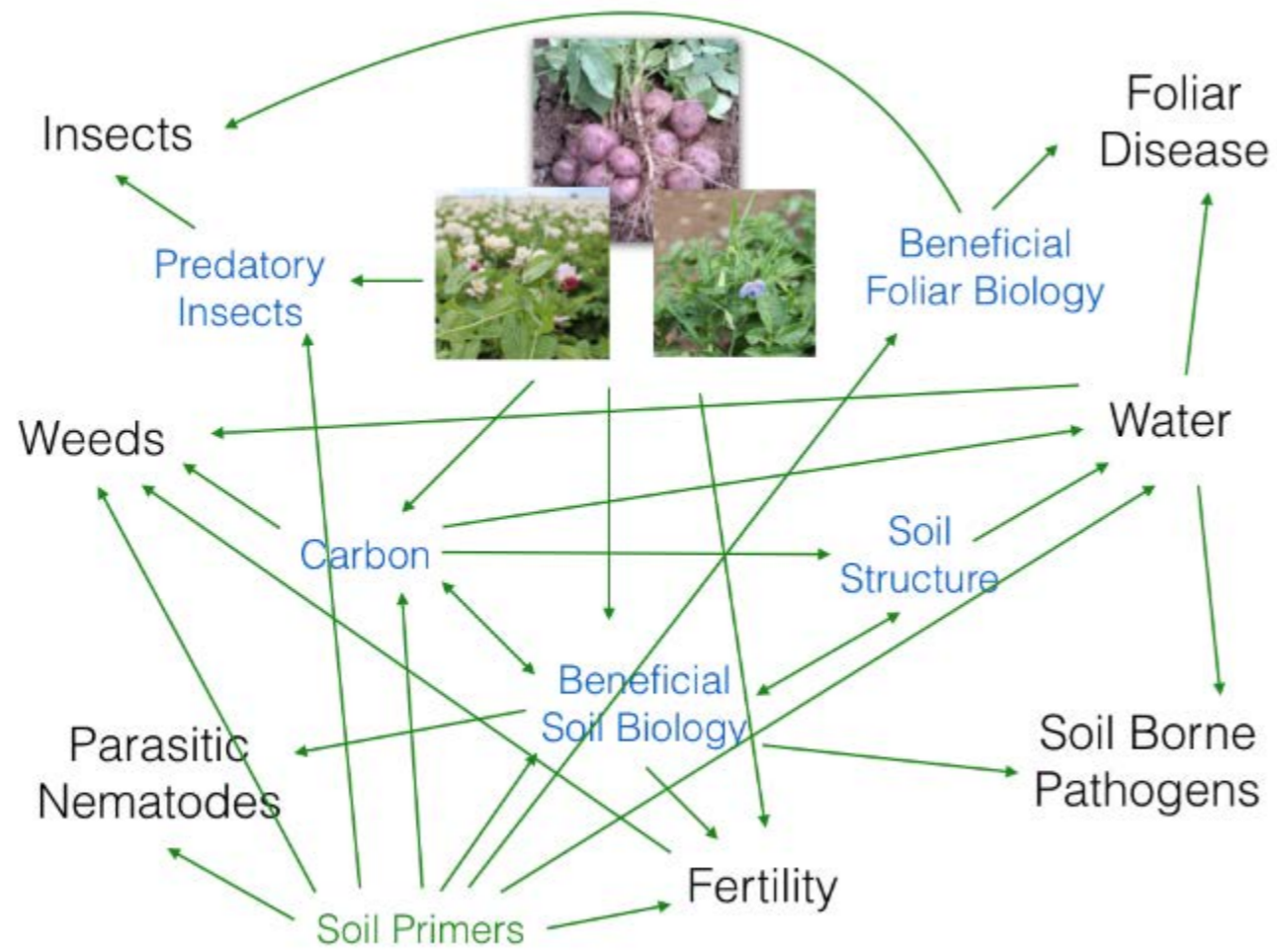
- Peas

- Oats

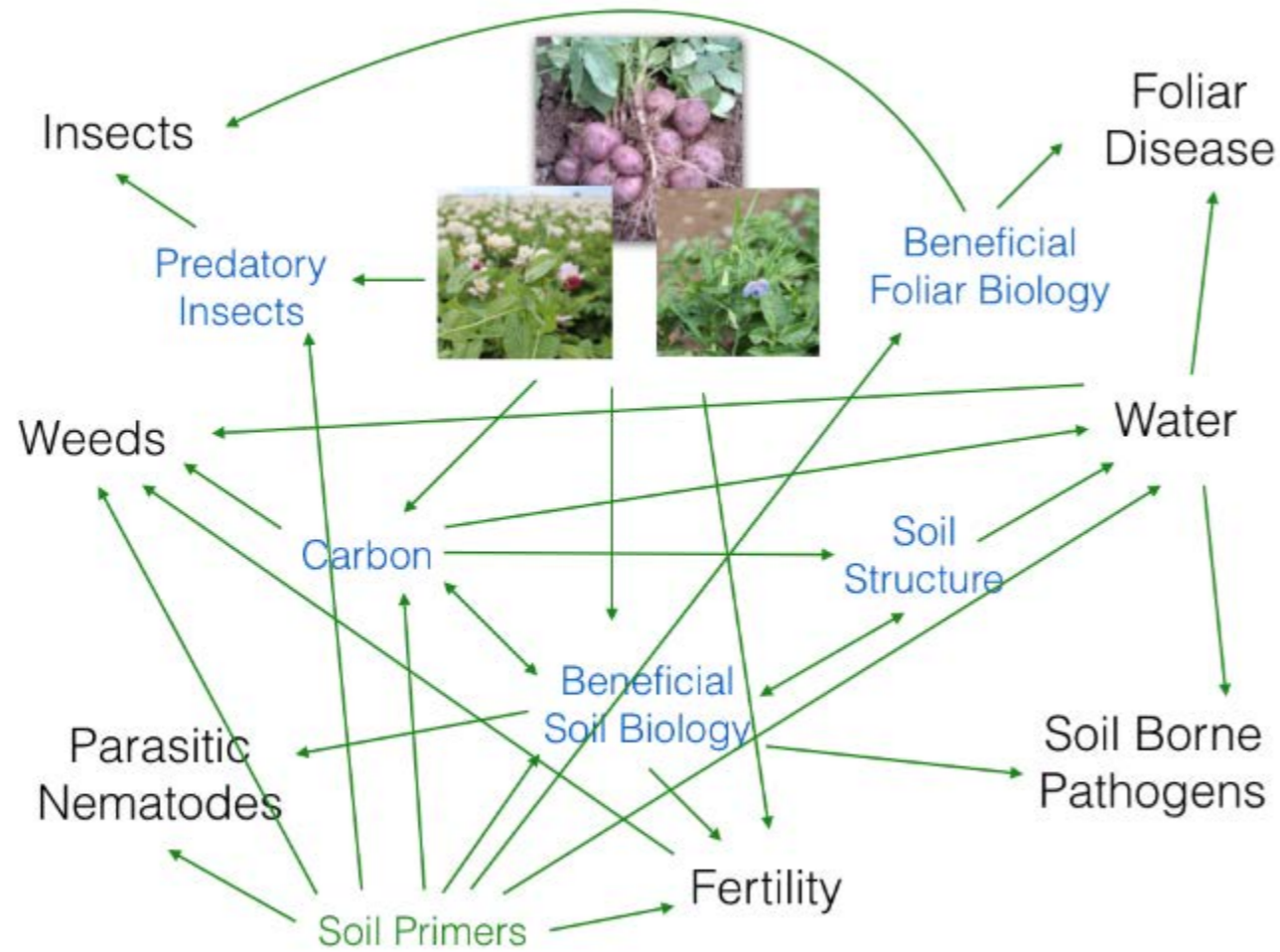
- Lentils

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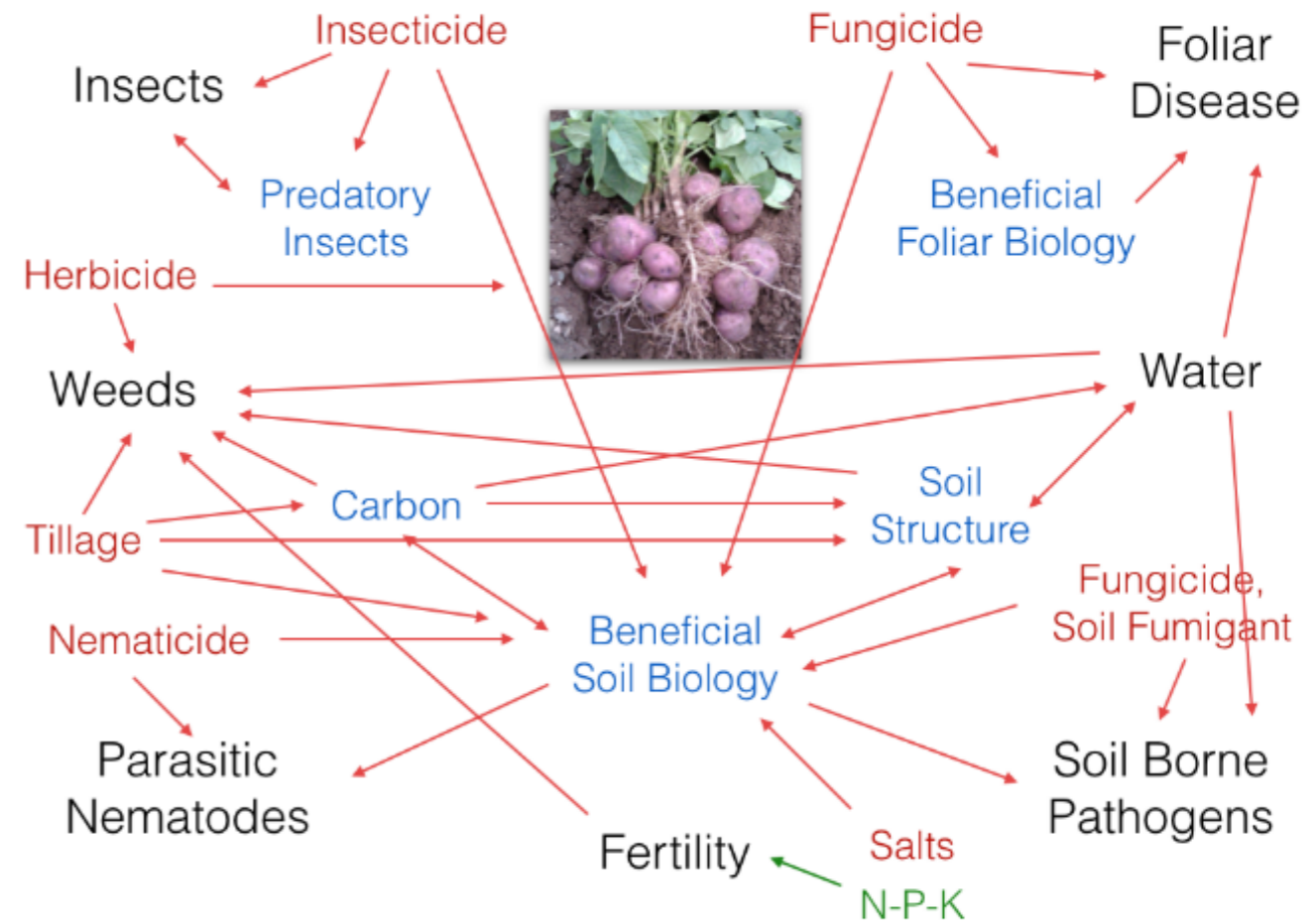


Pro-Biotic



tending to promote, enhance, or nurture life

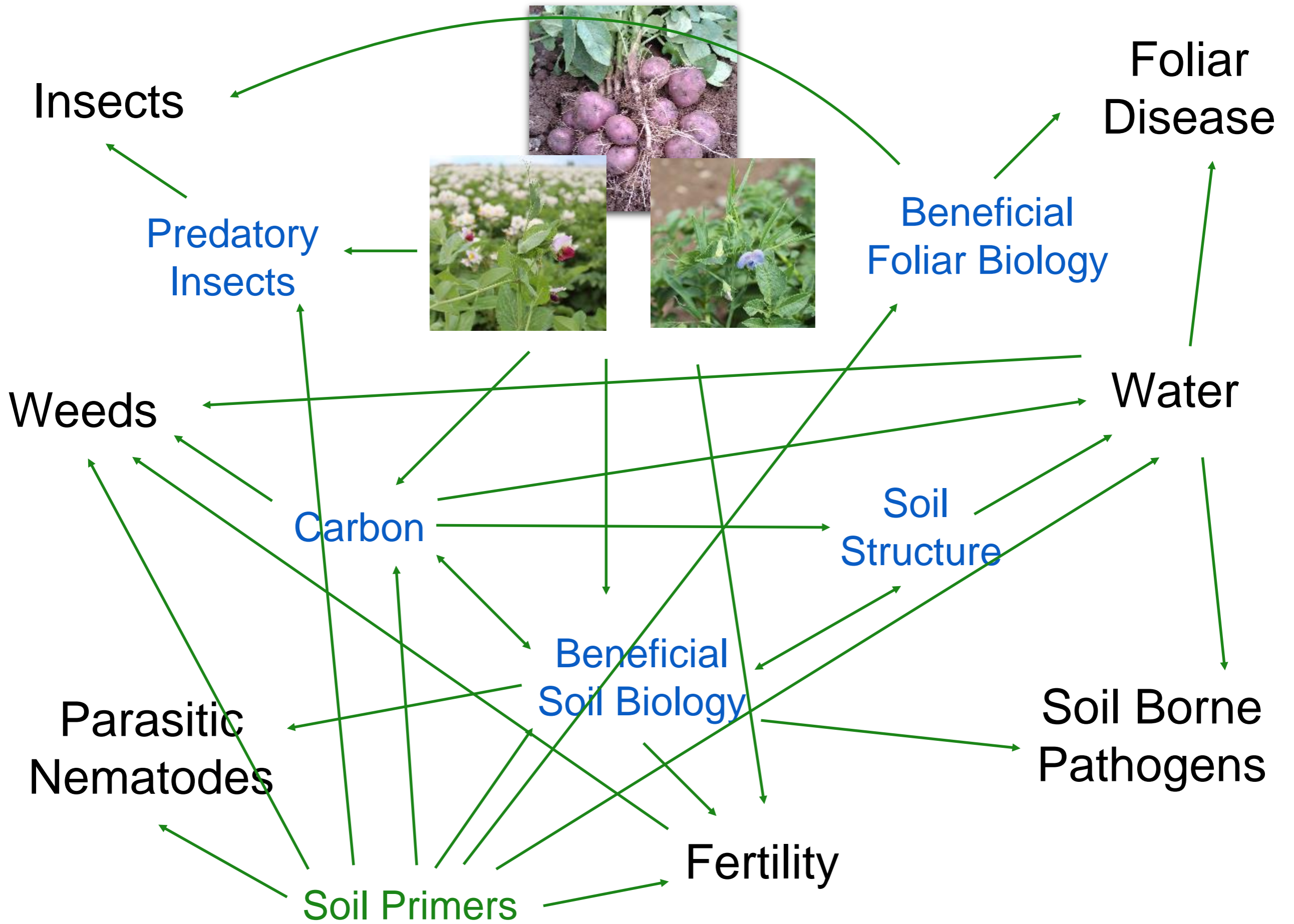
Anti-Biotic

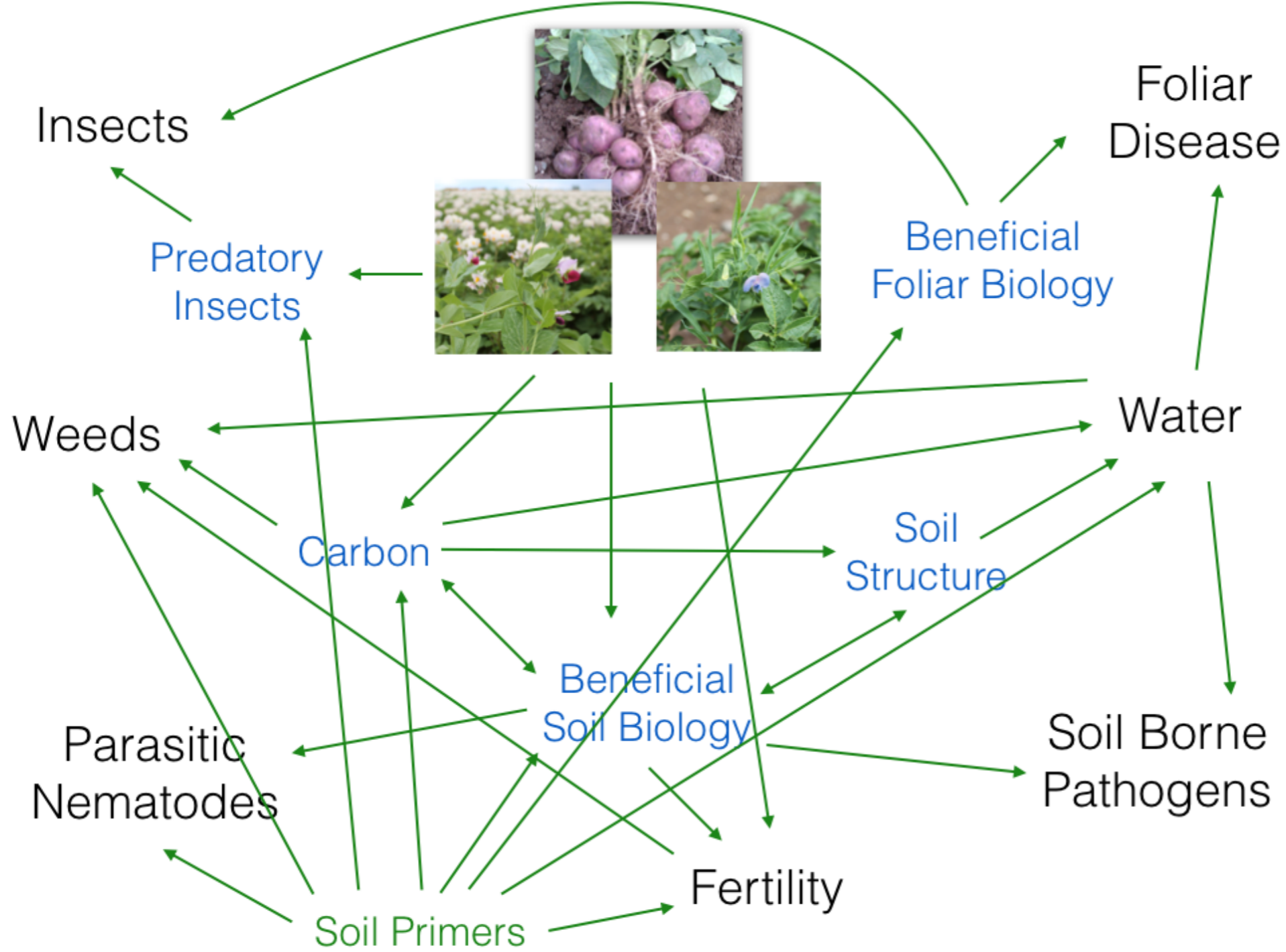


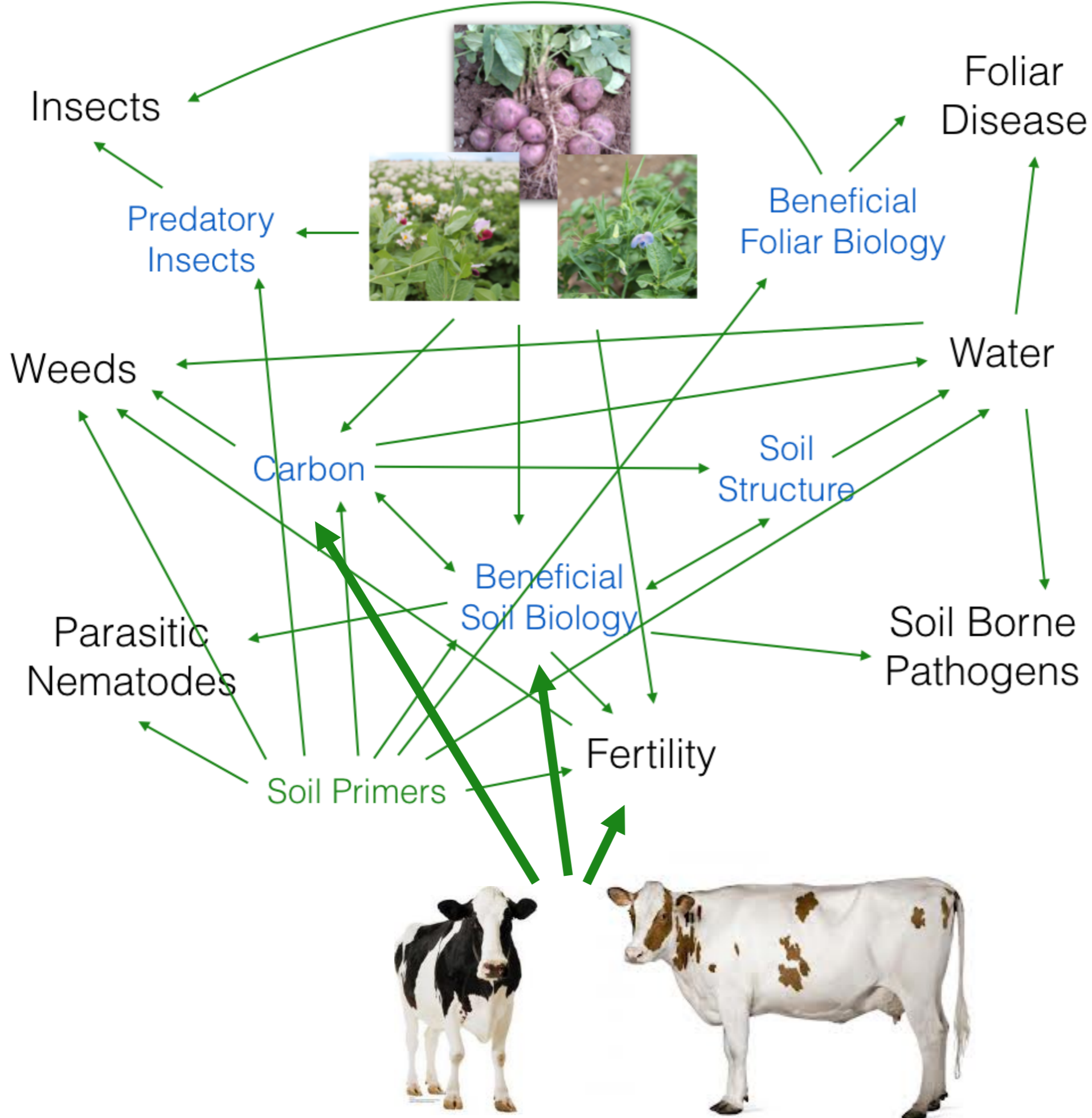
tending to prevent, inhibit, or destroy life

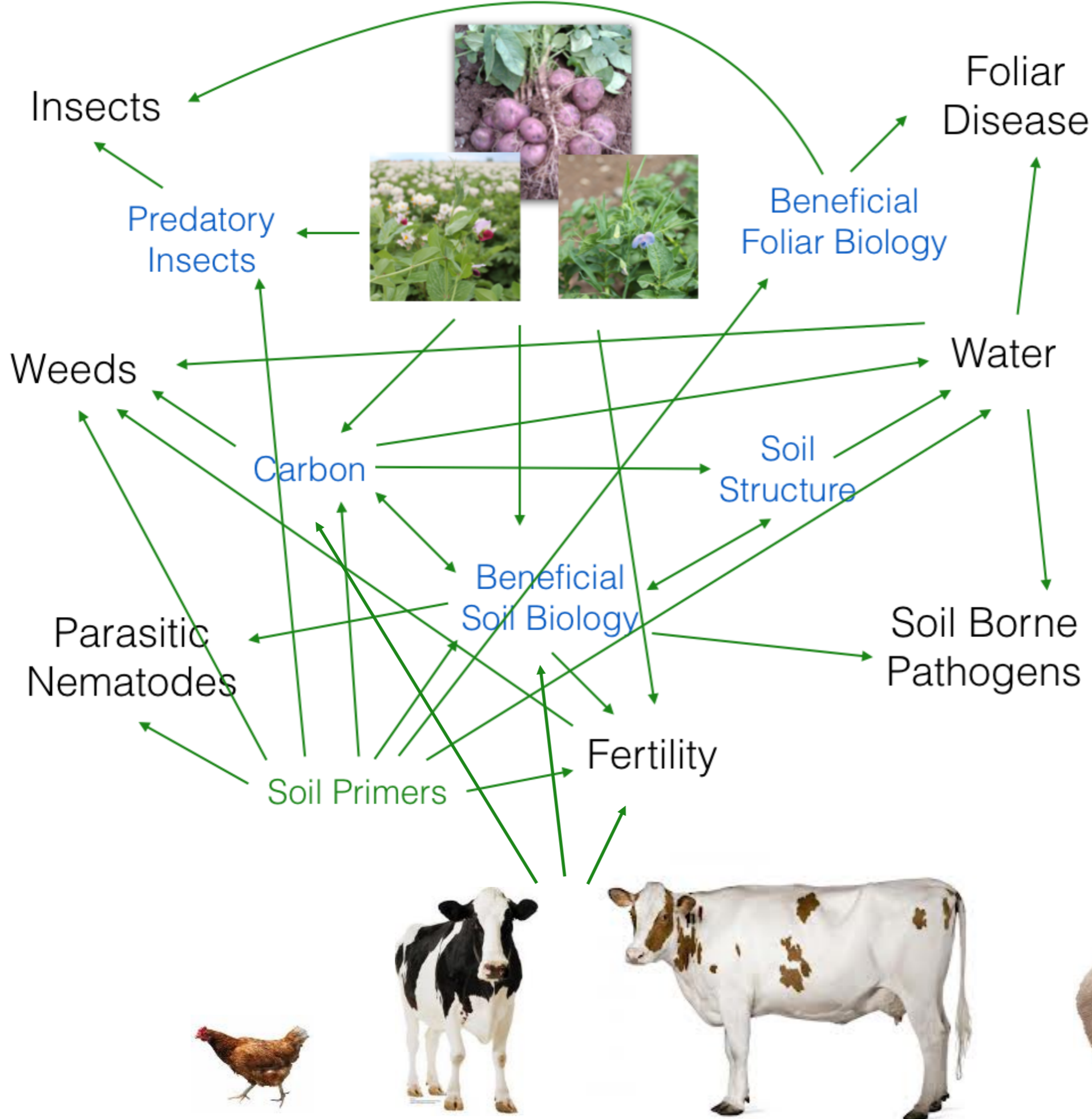


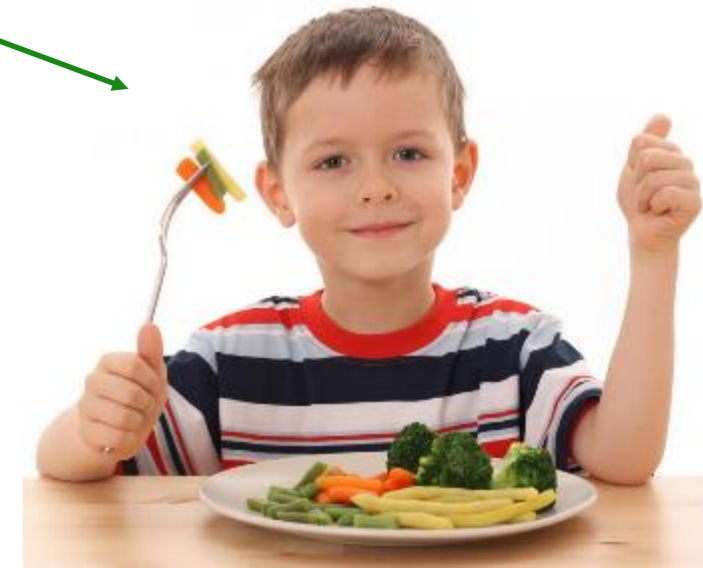
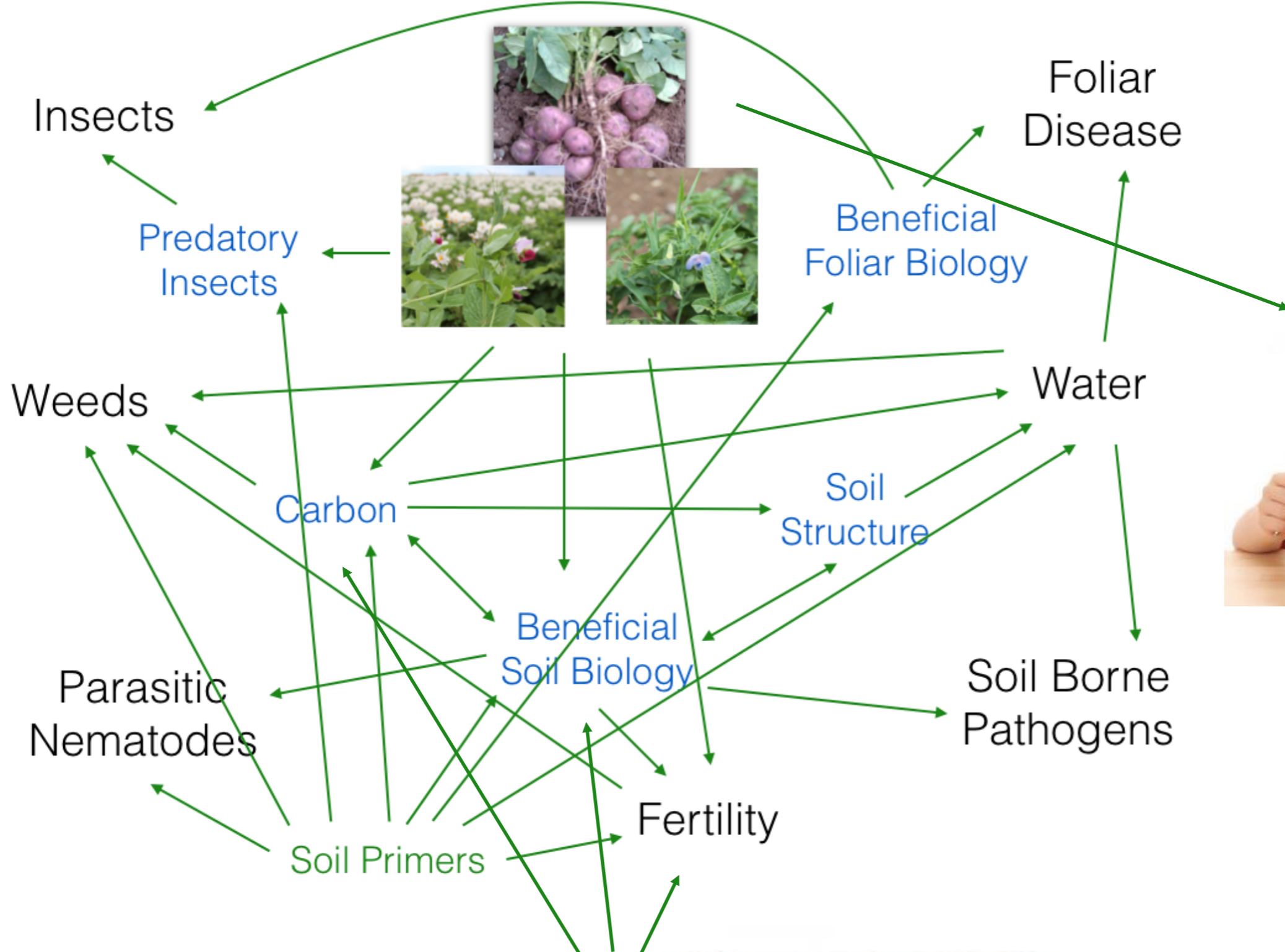
















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