

IT MAY TAKE TIME TO CREATE MAJOR ADVANCES IN SOIL QUALITY, HOWEVER PROGRESS CAN BE DISCOVERED BY FOLLOWING FOUR BASIC PRINCIPLES:

- 1 Minimize Disturbance.** Unlike soil texture, the soil's structure can be greatly impacted by tillage. Disturbing the soil destroys pore space, ultimately decreasing infiltration of water and the movement of oxygen. Whereas minimum-tillage systems have had a huge impact in improving soil organic matter (a leading indicator of soil quality), however no-till by itself isn't enough.
- 2 Maximize Biodiversity.** As soil is less disturbed and plant diversity is improved, nutrients become more available for cash crops while restricting unwanted plants and organisms.
- 3 Maximize Soil Cover.** Bare soils introduce the probability of wind and water erosion, during which nutrients and organic matter can be carried away and the opportunity for carbon capture is lost.
- 4 Provide Continuous Living Roots.** Living organic material (OM) and dead plant residues in the soil improves soil structure and stores nutrients, making them available later for cash crops. Adding continuous roots speeds up organic matter gains and at the very least maintains organic matter levels. Building OM levels offsets the "mining" action of cash crops.

THE VALUE OF 1% ORGANIC MATTER

Each 1% of Organic Material contains:

- 10,000 lbs. of C @ \$4 / ton = \$20
- 1,000 lbs. of N @ \$.50 / LB = \$500
- 100 lbs. of P @ \$.70 / LB = \$70
- 100 lbs. of K @ \$.40 / LB = \$40
- 100 lbs. of S @ \$.50 / LB = \$50
- .3"-1" of H₂O

Using average fertilizer prices that's about \$680!

Every 1% increase in OM raises soil's water-holding capacity by as much as 27,000 gallons per acre

(Ohio State University- 2014)

MATCHING COVER CROPS TO YOUR GOAL

- 1 SEQUESTER & CYCLE NUTRIENTS:** Cover crops can aggressively scavenge and cycle nutrients from deep within the soil profile making them available in the root zone of subsequent crops, improving yields and reducing runoff into sensitive watersheds.
- 2 REDUCE SOIL EROSION:** Extensive root systems cling to the top layer of soil creating an interior shield from erosion while top growth minimizes wind and water erosion.
- 3 CREATE A NITROGEN SOURCE:** Legumes produce additional nitrogen (N) by converting atmospheric nitrogen into nutrients plants can use.
- 4 BREAK UP SOIL COMPACTION:** Deep burrowing roots break through compacted soil to create pore space improving aeration, water movement and helping soil organisms flourish.
- 5 PROVIDE WEED CONTROL:** Cover crops create competition for winter annuals and other weeds by shading them out, and preventing them from robbing valuable moisture and nutrients from subsequent cash crops (with the potential of lowering herbicide requirements per acre).
- 6 SUPPORT PEST CONTROL:** Most cover crops that suppress weeds during the winter months can consequently reduce nematode populations. Some cover crops deplete nematode populations by causing premature egg hatching. Other species provide control by eliminating winter annuals that provide a refuge for nematode populations. Still other cover crops contain chemicals that naturally fumigate at-risk soil environments.
- 7 GENERATE EXTRA FORAGE:** Most cover crop species have the added benefit of being "dual-purpose", meaning they provide both the benefit of a soil cover while providing a valuable forage source for livestock.
- 8 ADD HABITAT FOR WILDLIFE & SHELTER POLLINATORS:** Fall, winter and spring cover crops create environments crucial for wildlife protection and nesting. Additionally, the biodiversity created by many cover crop systems have positive effects on native pollinators.
- 9 BUILD ORGANIC MATERIAL:** As cover crops grow, die and break-down, they add carbon to soil, feeding the soil food web, improving soil tilth, soil quality and water holding capacity.
- 10 INCREASE SOIL STRUCTURE:** Active plant roots contain mycorrhizal hyphae which form soil aggregates that act like a net capturing organic matter and soil particles. Aggregate stability builds soil structure that leads to better nutrient cycling and better movement of water and oxygen.
- 11 CONSERVE SOIL MOISTURE:** By converting the sun's energy into growing biomass and the opportunity for organic matter, soil moisture is increased while reducing runoff, evaporation and overall variability from weather extremes.
- 12 CREATE FINANCIAL VALUE:** The above benefits create the opportunity for better yield potential in cash crops, lower input costs and ultimately higher land values. In addition many states and counties offer cost-sharing initiatives for this important practice.

Soil First® Cover Crop Seed

Soil First®
PREMIUM
COVER CROP SEED

Solving the
SOIL HEALTH
Puzzle?

WE
HAVE
YOU

COVERED



BEST USED BEFORE	SOIL FIRST® MIXES	PLANTING SEASON			DAYS TO HARVEST	NON-FORAGE BENEFITS (5 = EXCELLENT, 1 = POOR)								CRUDE PROTEIN			NITROGEN FIXER OR SCAVENGER		DM TONS PER ACRE		SEEDING RATE (LBS/ACRE)				KEY BENEFITS		
		SUMMER	LATE SUMMER	FALL		COMPACTION ALLEVIATION	WEED SUPPRESSION	BIOMASS PRODUCTION	EROSION CONTROL	DISEASE/PEST CONTROL	POLLINATOR/BENEFICIALS	P & K CYCLING	EASE OF ESTABLISHMENT	10 - 13	SCAVENGER	2 - 5	DRILL: 30 - 35		BRDCAST: 35 - 40								
																	AERIAL: 30 - 40		FORAGE: 40 - 50								
BEANS	SF 101 COVER STARTER	✓	✓		45 - 50	5	5	5	4	3	2	4	4	10 - 13	SCAVENGER	2 - 5	DRILL: 30 - 35		BRDCAST: 35 - 40								
BEANS	SF 102 COVER STARTER+	✓	✓		45 - 50	5	5	4	5	3	2	4	4	12 - 15	BOTH	2 - 5	DRILL: 30 - 35		BRDCAST: 35 - 40								
CORN	SF 125 N-HANCER	✓	✓		45 - 50	4	4	4	5	2	3	4	4	14 - 18	FIXER	2 - 5	DRILL: 35 - 40		BRDCAST: 40 - 50								
BEANS	SF 140 MULTI-PURPOSE	✓	✓	✓	45 - 50	4	5	5	3	3	2	3	5	11 - 14	BOTH	3 - 5	DRILL: 35 - 40		BRDCAST: 40 - 50								
CORN	SF 142 CLASSIC	✓	✓		45 - 60	4	3	3	3	3	3	4	4	16 - 18	BOTH	2 - 4	DRILL: 12 - 15		BRDCAST: 15 - 20								
CORN	SF 150 FIELD FIT	✓	✓		45 - 50	5	5	4	3	3	2	3	5	13 - 17	SCAVENGER	2 - 4	DRILL: 30 - 35		BRDCAST: 35 - 40								
CORN & BEANS	SF 160 ROOTING		✓	✓	45 - 50	5	4	4	4	4	3	4	4	10 - 14	SCAVENGER	2 - 4	DRILL: 15 - 20		BRDCAST: 20 - 25								
CORN & BEANS	SF 175 ACCUSPREAD		✓	✓	45 - 50	5	4	4	4	4	3	4	4	10 - 16	BOTH	2 - 5	DRILL: 20 - 25		BRDCAST: 25 - 30								
°	NITROUS WINTER TRITICALE		✓	✓	SPRING	2	4	5	4	3	1	4	4	12	SCAVENGER	2.5 - 4	DRILL: 30 - 50		BRDCAST: 40 - 60								
°	GUARDIAN® WINTER RYE		✓	✓	°	4	5	4	5	3	1	4	4	10 - 14	SCAVENGER	2.5 - 5	DRILL: 30 - 50		BRDCAST: 40 - 60								
°	COLDSNAP® ANNUAL RYEGRASS		✓	✓	°	5	5	3	5	3	2	3	5	9	SCAVENGER	.5 - 2	DRILL: 15 - 30		BRDCAST: 20 - 40								
°	TILLAGE RADISH®		✓		45	5	5	4	4	3	2	4	5	18	SCAVENGER	2 - 4	DRILL: 3 - 8		BRDCAST: 4 - 10								
°	COVER CROP INOCULANT	TREATMENT SIZES & PACKAGING SPECIFICATIONS:			<ul style="list-style-type: none"> Unit Treatment Size: 500 lbs. (29.5 kg) Case Treatment Size: 2,000 lbs. 60 ounces per package; 4 packages/case; 54 cases/pallet 								<ul style="list-style-type: none"> Easy to Apply Effective Economical 		<ul style="list-style-type: none"> Multi-Dimensional Convenient 												

PRODUCT BENEFIT KEY

Benefit icons reflect the highest rated benefits as referenced in the Soil First® Management Guide - Edition 7. In most cases each product has many more benefits. See the chart on pages 15 - 16 of the Soil First® Management Guide - Edition 7, or visit laxcrosseed.com for additional product information.

EASY ESTABLISH

P & K CYCLING

POLLINATOR BENEFIT

COMPACTION ALLEVIATION

WEED SUPPRESSION

BIOMASS PRODUCTION

EROSION CONTROL

NITROGEN FIXER