

**NEW
EDITION!**

**THE LATEST
TILLAGE RADISH® INFO**

*Includes our cover crop
Seed Planting Guide!*



**Tillage
Radish®**

The original and only

**The Cover Crop
That Pays™**

**Resource
Guide**



Home of the Tillage Radish®

**1-800-767-9441
TillageRadish.com**



The Benchmark of Quality in Cover Crops

Cover Crop Solutions is a seed company that stands for something new in agriculture.

What's new is a fresh approach to cover cropping and to the discovery of ways it increases plant and soil production.

Advancements are being made in cover crops to enhance soil health and increase nutrient management while providing a living cover during the off season. Cover crops are proving to further enhance cash crop yields, build top soil, increase earthworms and improve soil and plant health in ways that pay.

Cover Crop Solutions stands on the principle of using cover crops to make a positive contribution to the farm's bottom line.

For us, it's all about building and maintaining a high level of soil health so that this incredible food-generating engine can function at peak performance. Cover crops are a key tool in this "soil first" approach to higher yields and even more robust bottom lines.

That's why we are so highly focused on cover crops that are not only unique, but are also certified for genetic purity. And it's why we support ongoing university and highly controlled farm-based research to stay at the forefront of the science of cover crops.

Ask us to show you how cover crops are a proven way to reduce input costs without compromising high yields, and why we produce and supply "cover crops that pay."



A Word from Steve Groff



Farmer and cover crop innovator
Cedar Meadow Farm
Holtwood, PA

We have fields at our farm that have not seen tillage equipment in 30 years. My interest in cover crops started with knowing that uncovered soil easily erodes into places like our nearby Chesapeake Bay. Working with university researchers like Dr. Ray Weil from the University of Maryland, however, gave me an entirely different respect for what good management can mean in terms of the soil's response to practical, common sense approaches to building soil health.

Out of helping test and develop the Tillage Radish,[®] one of the most remarkable advances in cover crops in recent memory, Cover Crop Solutions was founded on the idea of being one of the farmer's best friends.

As one of the company's partners, I will always be a farmer first and foremost. As a farmer, we are stewards of the land, the growers of food, and producers of many raw materials with all kinds of industrial applications.

Thank you for your commitment to learning how cover crops will help keep our soils healthy, productive and sustainable.

Treat Cover Crops Like Your Cash Crops!

Here are 10 tips to help you tackle cover crop seed selection:

1 Performance over price

Just like you purchase seed corn, soybeans, and other cash crop seed, buy cover crop seeds on value with seed genetics that produce the traits and benefits you desire. Utilize knowledgeable Cover Crop Solutions seed dealers who provide resources and experience that help you choose cover crops that pay.

2 Spread risk

Follow the fundamentals of cash crop establishment and plant as soon as possible after harvest or prior to harvest. Plant for diversity, or with multi-specie blends, to lessen weather risks, break pest cycles and prevent erosion that some monoculture species are vulnerable to.

3 Use test plots

A cover crop test plot on your farm is the best way to really know how cover crops work for you. Have a check strip adjacent to your test plots to show a comparison to help determine benefits.

4 Plan ahead

It's simple: improved cover crops equal improved cash crops. Be prepared. Know your planting window. Have your seed available, equipment calibrated, and your workers prepared to plant.

5 On-farm testing & research

Collaborate with others, including Cover Crop Solutions, to replicate field scale research testing to give credible data for the real world. Follow up with a field day to show your neighbors and encourage what could work best for your area.

6 Follow a plan

Be strategic in determining which species to plant in front of the next cash crop. Generally legumes before corn and grasses before beans. Tillage Radish® can be planted before both, and TillageMax Blends are becoming more popular. Consider adding wheat on a few acres or short season corn or soybeans to expand planting window opportunities.

7 Record keeping

As with cash crops, keep a record of cover crop planting dates, seeding rates, and other important details. Incorporate this information into your crop management programs: crop consulting, conservation plans, fertility, soil testing, yield testing, moisture and nutrient availability data. Make notes comparing soil quality, harvestability, and any issues that may need to be addressed.

8 Spread out harvest

Make more of your fields available for cover cropping. Consider planting short season hybrids and varieties, planting wheat, or including grazing in your rotation.

9 Fertility management

Legumes can add nitrogen while Tillage RootMax™ Deep Root Annual Ryegrass and Tillage Radish can keep nitrogen from leaching into tile lines and groundwater. These cover crops can be a tool for nutrient management planning and for increasing soil biological activity.

10 Utilize your best resources

Seek knowledgeable Cover Crop Solutions seed dealers, university extension teams, NRCS personnel and websites that provide credible cover crop information. Challenge yourself, your hired hands and the next generation in finding ways to incorporate cover cropping into your operation!

The Cover Crop That PaysSM

FALL

PLANTING

Plant 3 to 10 weeks before the first killing frosts.

Radish size depends on growth time, plant competition and available nutrients to scavenge.

N ABSORPTION

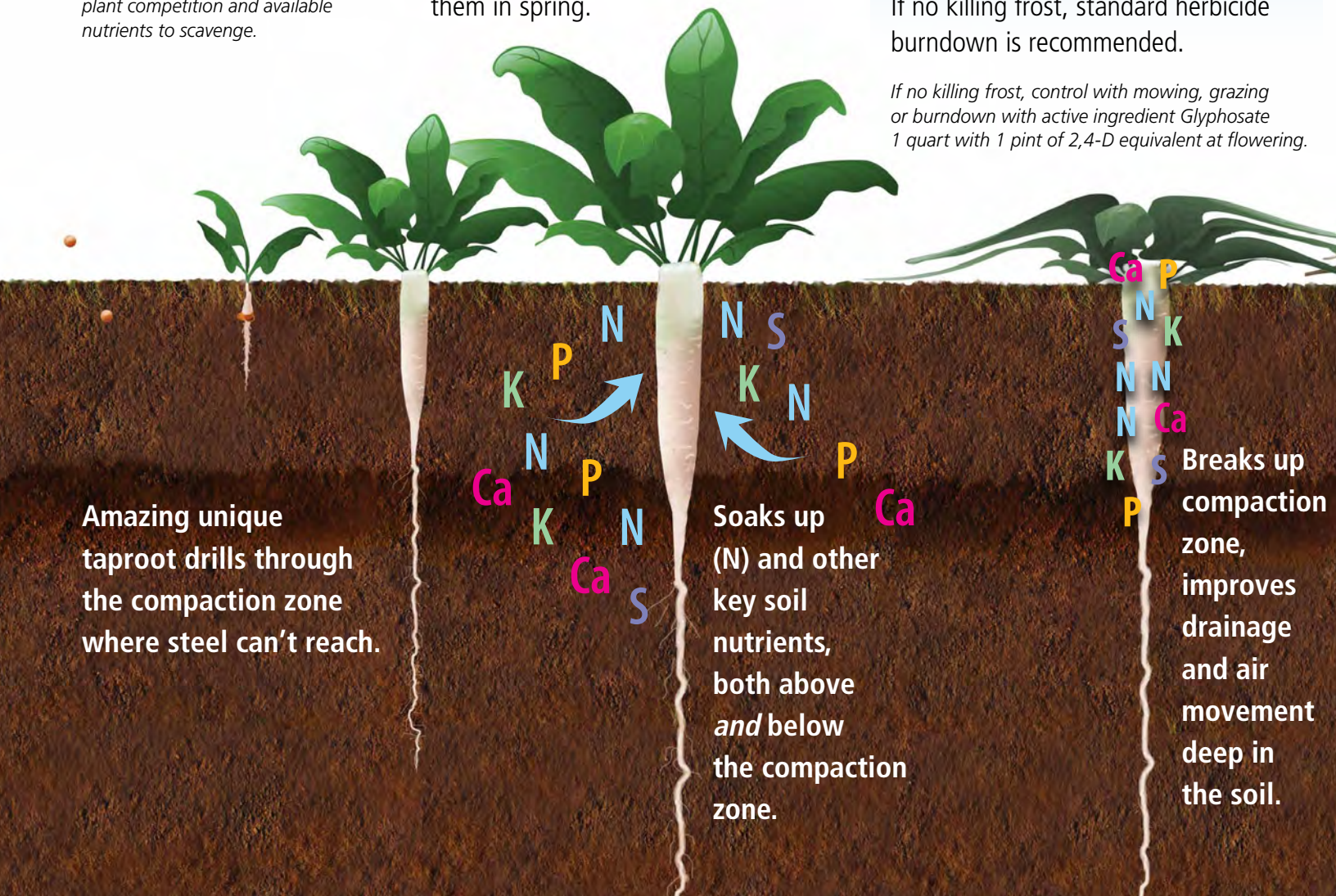
Tillage Radish absorbs nitrogen (N) and other key nutrients, including that from manure, and releases them in spring.

WINTER

N WINTERS OVER

Tillage Radish holds plant-available (N) and other soil nutrients. A few cold nights in the "mid-teens" kill them. If no killing frost, standard herbicide burndown is recommended.

If no killing frost, control with mowing, grazing or burndown with active ingredient Glyphosate 1 quart with 1 pint of 2,4-D equivalent at flowering.



Amazing unique taproot drills through the compaction zone where steel can't reach.

Soaks up (N) and other key soil nutrients, both above and below the compaction zone.

Breaks up compaction zone, improves drainage and air movement deep in the soil.

- Corn yields up average **12 bu/ac**
- Soybean yields up **8 bu/ac**
- Winter Wheat yields up to **5-7 bu/ac** increase*
- Over 10 years of university R&D
- Tillage Radish® is genetically superior

*This is planting 2-3 lbs of Tillage Radish with winter wheat.



SPRING

SOIL CONDITIONING

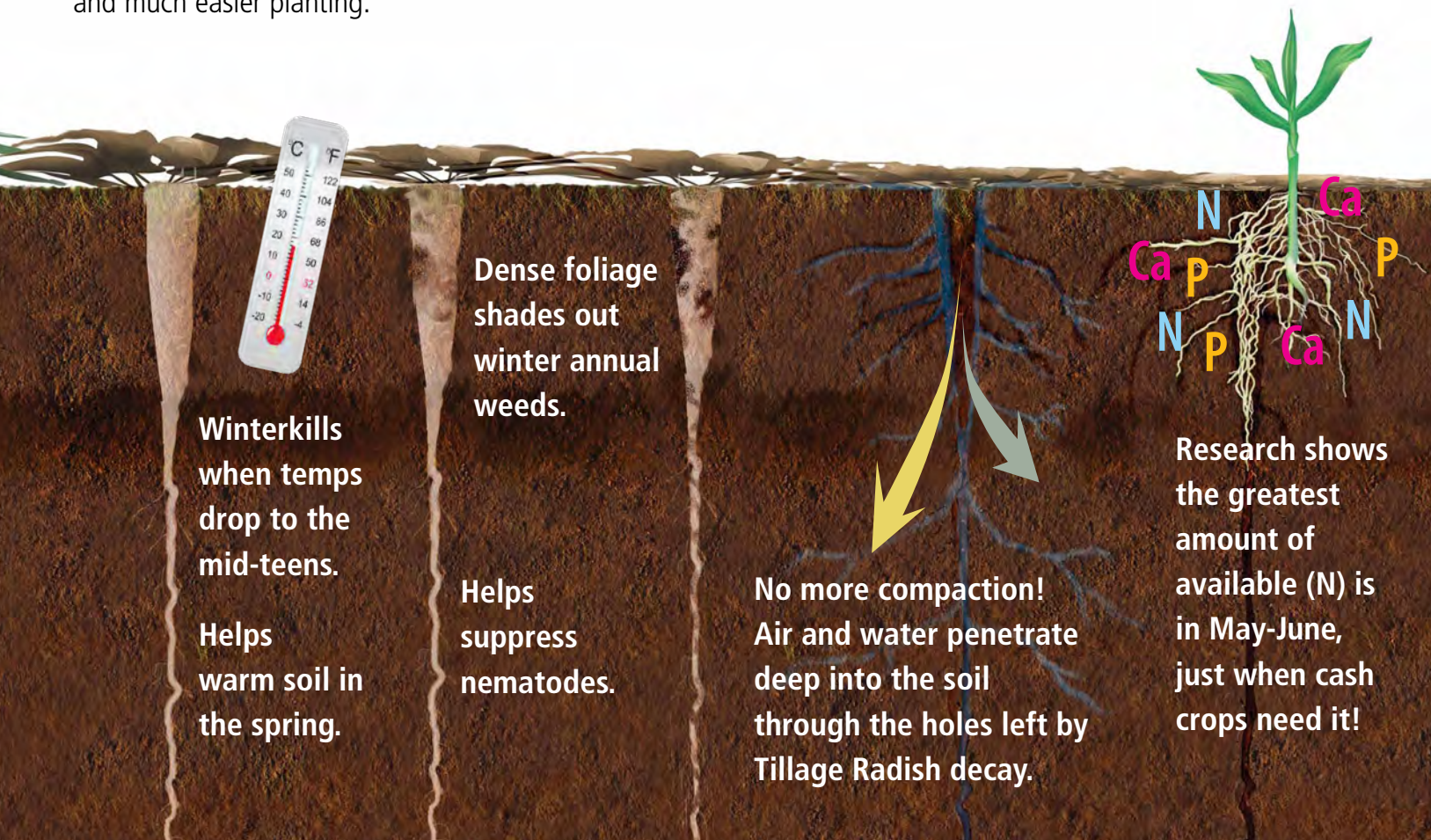
As the Tillage Radish decays, voids are left in the soil, with holes in the compaction zone created by the taproot. This means greater air and water circulation in the soil, increased microbial activity, and much easier planting.

WHAT WEEDS?

The dense Tillage Radish foliage forms a thick canopy so most winter annual weeds never see the light of day. Herbicide burndown can be reduced.

DECAY AND RELEASE

As temperatures rise, the (N) is released back to the rhizosphere, the root zone, where it is available for the crop that follows Tillage Radish.



Winterkills when temps drop to the mid-teens.

Helps warm soil in the spring.

Dense foliage shades out winter annual weeds.

Helps suppress nematodes.

No more compaction!
Air and water penetrate deep into the soil through the holes left by Tillage Radish decay.

Research shows the greatest amount of available (N) is in May-June, just when cash crops need it!

TillageRadish.com

How it pays: Increases yields

For conversions, refer to table on page 27.

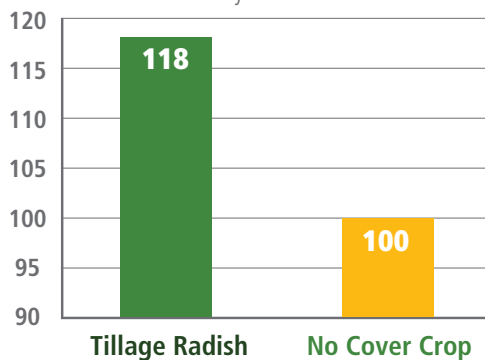
YIELDS

Both research and farmers confirm significant increases in yield and bottom line profits when using Tillage Radish.®

Corn & Soybean Yield Increases in Heavily Compacted Soils

CORN YIELD (BUSHEL / ACRE)*

Dr. Ray Weil, University of Maryland
Hayden 2005

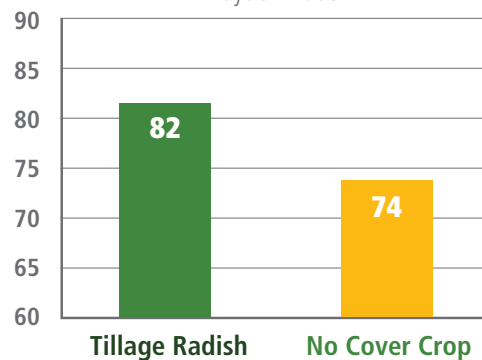


Yield with Tillage Radish 118 bu/acre
vs No Cover Crop 100 bu/acre

*Data taken in dry year

SOYBEAN YIELD (BUSHEL / ACRE)

Dr. Ray Weil, University of Maryland
Hayden 2005



Yield with Tillage Radish 82 bu/acre
vs No Cover Crop 74 bu/acre

TILLAGE RADISH BENEFIT

10% yield increase or 18 bu/acre advantage
18 bu/acre @ \$5.50/bu = \$99/acre advantage

TILLAGE RADISH BENEFIT

11% yield increase or 8 bu/acre advantage
8 bu/acre @ \$12.00/bu = \$96/acre advantage



Results for Dan Magness of White Hall, MD

Tillage Radish and Increased Corn Yields

No cover crop	180 bu/acre
Barley cover crop	193 bu/acre
Tillage Radish cover crop	221 bu/acre
TOTAL INCREASE OF	41 bu/acre

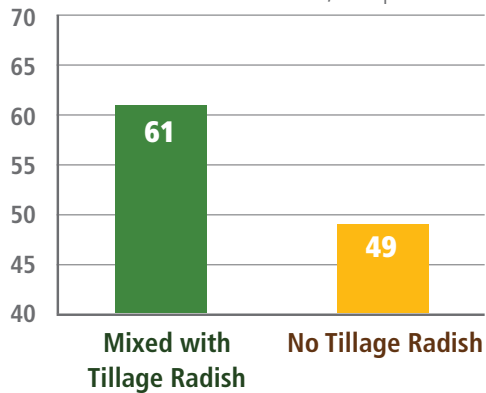
(Left) Dr. Ray Weil in a November Tillage Radish field showing peak biomass, (N) uptake and fleshy development.* Photo: Remsfeld

*Size depends mainly on soil fertility, seeding rate and length of growth time.

Finding the Ideal Tillage Radish® & Winter Wheat Ratio

WHEAT YIELDS INCREASE (MIXED WITH TILLAGE RADISH)

BAAR Scientific LLC, Phelps NY



Yield with Tillage Radish mixed
with winter wheat



ONGOING RESEARCH, IMPORTANT FINDINGS

Research (chart above) shows that mixing 2 lbs of Tillage Radish with winter wheat seeding can result in significant yield increases with beneficial results.

- The USDA is currently looking at this practice as part of risk management and cost share program eligibility.
- Third party research in replicated plots indicate a 5-7 bu/acre increase in cash grain winter wheat yield when 2-3 lbs of Tillage Radish was planted with the winter wheat.
- A \$6.90 investment in Tillage Radish (2 lbs/acre) is hard to pass up at \$7.00 per bushel of cash grain winter wheat.

Case Study: Winter Wheat with Tillage Radish - Tony Kodesh of Red Rock, OK

I planted 3 lbs of Tillage Radish into 400 acres of my winter wheat crop this past year to test it out. I had read about the benefit claims and considered it would be much like what my father did when he planted turnips with his wheat.

Unfortunately, this past year we had severe drought conditions that were comparable to that of the dust bowl period. The future of our crop looked grim and the Tillage Radish tubers only got to be the size of pencils when they were winterkilled. Being so dry we were looking at the real possibility of needing to make a crop insurance claim.

Fortunately, we were blessed with rain a few weeks prior to harvesting - it saved the crop.

When we went to harvest, we were surprised to see that the fields where Tillage Radish was planted showed yields of 9-15 bu more than any other of our wheat fields.

I am pleased with the results of using Tillage Radish and appreciated the support I received from the Tillage Radish team. I am looking forward to planting Tillage Radish this year. I agree that Tillage Radish is a cover crop that pays!

How it pays: Improves soil fertility

THE AMAZING TILLAGE RADISH® TAPROOT

Because of its unique plant characteristics, the Tillage Radish cover crop provides measurable benefits to the farmer, the soil, and the environment all while being easy to manage. Successful farmers find that Tillage Radish is the cover crop that pays with tangible benefits.

One of these unique traits is the taproot, which reaches depths of 30" and beyond! When it hits the compaction zone (around 290 PSI), the tuber stops and the taproot begins to bio-drill deep down into the subsoil.



(Top) Tillage Radish 8 days after seeding showing developing taproot system. Within a month, the roots will reach depths of 30 inches and beyond.

(Bottom) Taken along plot boundary lines, the spinach on far left (see arrow) had no Tillage Radish, while the spinach on far right was planted at the same time next to Tillage Radish (decaying root visible; see arrow) and middle spinach in between.



Planted at same time, no cover

Decaying Tillage Radish

How it pays: Reduces input

Tillage Radish[®] — the Nutrient Scavenger

TILLAGE RADISH CAPTURES MOST AVAILABLE (N)

University of Maryland research supports up to 150 lbs of (N) per acre taken up in the fall, stored over winter and released in the spring (April-June). This particularly applies in a situation where a fall application of manure is spread.

TAPROOT SCAVENGES HIGH LEVELS OF NUTRIENTS

Tillage Radish taproot will scavenge significant levels of nutrients (N), (P), (Ca), and many other yield-advancing nutrients with a wicking effect up to 6 feet deep, making it available for the next crop!

(N) IS AVAILABLE JUST WHEN CROPS NEEDS IT

Research shows the greatest amount of available (N) is in May-June which coincides with when cash crops need it!

RESIDUE DECOMPOSES QUICKLY, RELEASES (N) EARLY

Unlike cereal rye and other cereal cover crops whose residues decompose slowly and immobilize (N) in the spring, Tillage Radish residue decomposes rapidly and releases its (N) early.

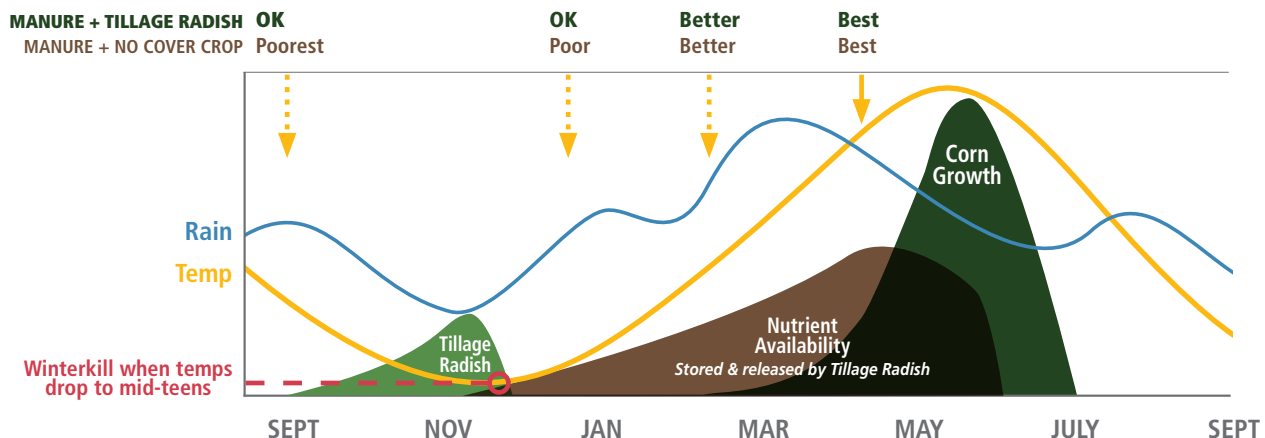
MINERALIZATION PEAKS IN MAY-JUNE

Tillage Radish recycles large amounts of (N) taken up from the soil profile in fall, reducing the need for (N) fertilizer. Spring-planted crops often show an early boost in growth and (N) uptake similar to that caused by a planting time (N) application.

Source: *Multiple Benefits from Brassicaceous Cover Crops & Cover Crop Mixtures: Making Cover Crops Pay in the Chesapeake Bay Region. Submitted to the Maryland Center for Agro-Ecology, August 2007. Performance period: 7/01/03 - 4/30/07. FRS#s 01-5-25031 & 01-5-25036. Principal Investigator: Ray Weil, Professor, Dept of Environmental Science & Technology, University of Maryland. Co-Investigator: Sandra Sardanelli*

TILLAGE RADISH & NUTRIENT APPLICATION

(N) or Manure Application



How it pays: Reduces compaction

TILLAGE RADISH® RIPPER VS STEEL

The Tillage Radish taproot does all the hard work so you don't have to. It acts as a Ripper or strip tiller, reaching subsoil without bringing up rocks, bringing up nutrients instead. It will work for you even when the soil is too wet to till. Which means not only less work for you, but less fuel consumption. Improved soil fertility is a result of Tillage Radish storing nutrients including (N), (P), (Ca), and more, then making them available for your next crop.



Breaks up soil with its long taproot

Dr. Weil explores the root growth in a soil pit. The tuber pushes soil up making it more mellow. As bottom photo shows, no need to till soil that looks like this!

“No piece of steel can benefit the soil like the roots of a good cover crop.”

— Steve Groff, farmer & cover crop innovator

COST OF V-RIPPER PER ACRE

LinderFarmNetwork.com

2011 Farm Custom Rates

\$25.00

WHAT THIS MEANS FOR YOUR BOTTOM LINE:

Tillage Radish gives you more than savings on the cost of using steel. The bio-drilling traits of this powerful taproot breaks up your compaction with long term benefits that add up!

- Vital nutrients held & released = higher crop yields
- Long taproot breaks up soil much deeper than a V-Ripper can
- Less work in field, less fuel used = reduced operating costs

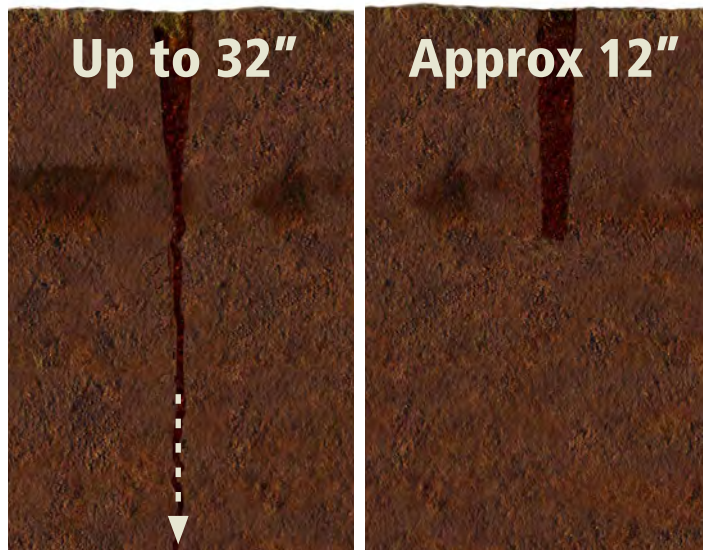
TILLAGE DEPTH COMPARISON

Tillage Radish

Ripper

Up to 32"

Approx 12"



Tillage Radish[®] Ripper vs Steel V-Ripper

Got steel... and think you still need to use it? Can't resist the "power urge"?



Cut down on time in the field - let Tillage Radish do the work.

Here's your remedy for the power urge!



How it pays: Weed control

LESS WEEDS, LESS HERBICIDES

Tillage Radish® has an amazing ability to out-compete winter annual weeds. Some farmers have eliminated a spring burndown herbicide application! This is not an allopathic effect but rather that they grow faster and shade out weeds that would otherwise germinate and grow. Here's what experts and farmers alike have to say...

"A good stand of early-planted Tillage Radish produces a dense canopy that all but eliminates weed emergence in the fall and winter. This will produce a virtually weed-free seedbed in early spring. To obtain this near-complete weed suppression, Tillage Radish should be planted at least 3 weeks before killing frosts with a stand of 5 to 8 plants per square foot."

"Several dairy farmers in Maryland and Pennsylvania have successfully no-till planted directly onto the virtually weed-free and almost completely decomposed Tillage Radish residue without any burndown herbicide."

Source: Weil, R., C. White and A. Kremen. 2009. Forage Radish: New Multi-Purpose Cover Crop for the Mid-Atlantic. Dept. of Agriculture, University of Maryland. Fact Sheet 824

"The Tillage Radish has done its bio-drilling and seems to leave a "film" over the top of the ground that inhibits the spring weed flush."

— **Furmano Foods**

Most winter annual weeds never see the light of day.

"There were no weeds in the Tillage Radish plot in the spring so we didn't need a burndown herbicide."

— *Brian Hearn, University of Delaware*



Tillage Radish in late February in Maryland. Notice weed suppression compared to no cover plot behind it (which went unweeded after late August tillage). Photo: Ray Weil

Compare the growth!

Corn is off to a faster start in Tillage Radish residue (rows on right) than in Cereal Rye residue (row on left) due to better (N) availability and warmer soil.



Planted into Cereal Rye

Planted into Tillage Radish

How it pays: Enhances seed bed

EARLIER PLANTING & GERMINATION

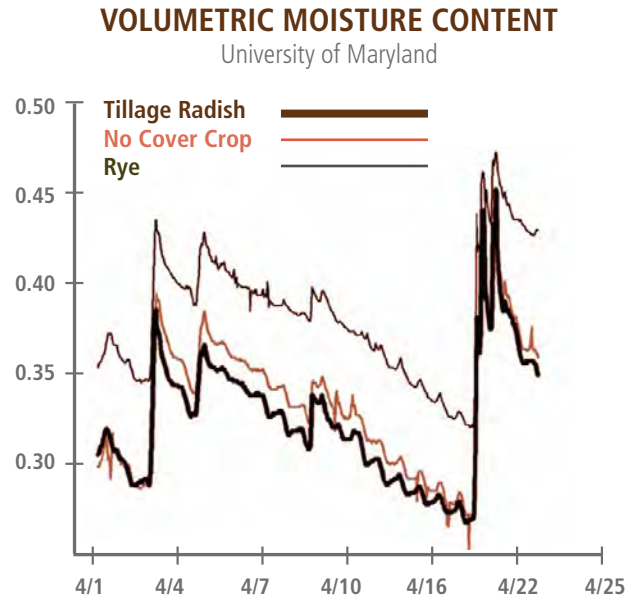
Unlike most other cover crops commonly used, Tillage Radish® won't complicate or delay spring field operations. Because it winterkills in most areas, it does not need to be killed or incorporated to prepare a spring seedbed. When conditions are favorable, the field will be ready for direct planting.

Because Tillage Radish leaves the soil surface weed free, punctured by large root holes, and covered by very thin and sparse residue, the seedbed soil warms up and dries out considerably faster in early spring than do soils covered by either winter weeds or a growing cover crop. The warmer, drier soil and the elimination of the need for tillage can allow for earlier spring planting.

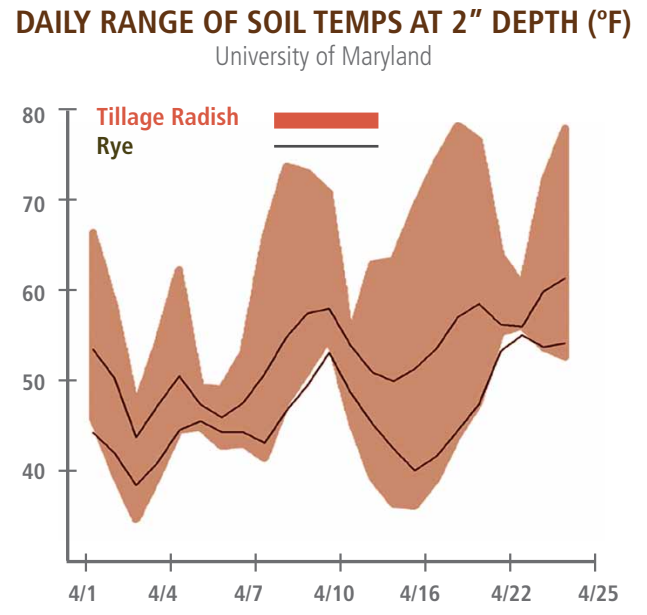


No-till planted Peas emerge in minimal spring residue of the Tillage Radish.

Tillage Radish soils are drier for earlier planting...



Tillage Radish soils are warmer for earlier germination...



How it pays: Nematode control



A natural benefit of Tillage Radish at work

At peak growth, Tillage Radish is working hard to suppress nematodes deep under the soil.



Tillage Radish seedling 1 week after planting. Earthworms seem to love them all the time, a key indicator of good soil health.

Tillage Radish® helps bring the good critters while keeping bad guys at bay, all without the use of pesticides!

Get this: earthworms love it, nematodes hate it. How? The deep Tillage Radish taproot fractures and loosens your soil, creating micro pores. The result is water and oxygen effectively infiltrating the soil which works to increase organic matter and microbial activity.

Tillage Radish is both a magnet to highly beneficial earthworms and a virtual shield to suppress pesky nematodes. It's a win-win!



More worms, less nematodes

(Top) There are over 30 worms in this Tillage Radish enriched soil.

(Bottom) A close look at how much earthworms love this radish. Look at 'em go!

Tillage Radish® Growth Stages



1
Rapid Germination:
 2-3 days with proper soil temperature and moisture



2
Weed Suppression:
 Thick foliage shades out available space



6
Seedbed Ready:
 Residue has decayed, nutrients are available, and soil health and seeding conditions are enhanced

Winterkill:
 Dies after 2-3 nights in the mid-teens, leaving a blanket of winter cover



5
Nutrient Silos:
 Enlarged tubers and thick foliage stockpile nutrients wicked up through the bio-drilling taproot

Bio-Drilling Taproot:
 Tuber narrows at compaction point, sending out the taproot, boring down into the subsoil up to 30" in depth



4

Tillage Radish® Genetics

Superior Genetics for Dependable, Consistent Results

The superior genetics of Tillage Radish are the secret weapons behind the dependable, consistent results that deliver a better bottom line.

EXTREMELY RAPID GERMINATION AND GROWTH

- Germinates in 2 to 3 days if adequate moisture is available
- Foliage spreads out to fill the given space and shade out weeds
- The tuber and thick foliage are the storehouse for nutrients
- Grows to a height of 12-24" depending on when it was planted

BIOACTIVE PLANT CHEMICALS (GLUCOSINOLATES)

- Studies show Tillage Radish increases the soil's bacteriovores who feed on nematodes and increases the (N) cycling process mineralizing available (N), (P), (Ca) and (S)
- Weed-suppressive effect that helps shade out competition
- High levels of the compound glucosinolate, when decomposed, produces isothiocyanate (ITC) which has fungicidal, nematicidal properties. Some studies say it can also help inhibit weed seed germination

LARGE, DEEPLY PENETRATING TAPROOT

- Pulls up nutrients, allows increased water infiltration, establishes a root trail for the next crop, stores water in the soil profile
- The Tillage Radish's bio-drilling taproot forms when soil compaction reaches around 290 psi, boring into the subsoil to wick up nutrients

- Taproot has been reported to go 30 inches and beyond

WINTERKILLS & QUICKLY DECOMPOSING RESIDUES

- Usually after three nights with temperatures in the mid-teens
- Residue is very sparse at planting time
- Low (C)/(N) ratio making for a fast mineralization
- Releases stored nutrients at the time the next crop needs it (April-June)

HIGH NUTRIENT (N, P, Ca, S, B) CONTENT

- A nutrient scavenger taking up nutrients throughout the soil profile
- A Calcium film is left on the soil surface as part of decomposition
- Sulfur is concentrated in the roots and gives off an odor when decomposing, just like the additive mercaptan that is added to natural gas. As a warning, you may want to inform neighbors to the possibility of this odor. You do not want the gas company digging up your fields
- Tillage Radish mineralizes available (N), (P), (Ca) and (S)
- Tillage Radish pulls up twice the amount of (Ca) than cereal rye

Source: Forage Radish Cover Crop Effects on Mycorrhizal Colonization & Phosphorus Soil Test. Charles Macaulay White, Master of Science, 2009.

Grazing Tillage Radish®

Many farmers with livestock have used Tillage Radish as part of their grazing program. It is preferred that a companion forage crop, such as TillageMax Dover™ (Tillage Radish + CCS Oats) or TillageMax Bristol™ (Tillage Radish + Tillage RootMax™ Deep Root Annual Ryegrass), be included to better balance the ration. It is important to understand the dynamics of the 2 main reasons for using Tillage Radish in a grazing situation: forage for cattle and compaction alleviation.

Careful management is needed to not allow the cattle to graze in very wet conditions as that will negate the compaction benefits Tillage Radish has to offer. Also, the cattle cannot be allowed to graze the Tillage Radish to the point where they can't express their genetic potential of deep rooting (if that aspect is desired).

Tillage Radish has been proven to bring up many nutrients from deep in the soil profile that can greatly benefit the cattle's diet.



PLANTING TIPS FOR GRAZING

- Always mix a grass species with Tillage Radish planted at 4 lbs/acre
- Provides a high protein diet into early winter
- Allow the cattle to only graze off the top one-third in order for adequate re-growth

PLANTING TIPS FOR ESTABLISHED PASTURES

Tillage Radish seed needs a chance to get started in pastures, and it's ideal to have the grass grazed low or cut low with adequate moisture prior to planting. Have the soil (N) content at least between 40-60 lbs.

Seeding rate is 4 lbs/acre drilled. Broadcasting will only work if there is adequate seed to soil contact - use 6 lbs/acre.

The radish is very digestible and provides many nutrients. Having other species established provides a balanced diet.

- Plant Tillage Radish at 4 lbs/acre when direct drilling into pastureland
- Plant Tillage Radish at 6 lbs/acre when broadcast seeding into pastureland
- Follow soil test recommendations
- Nitrogen available between 40-60 lbs
- Allow 3-4 weeks growth time before grazing
- Re-graze approximately on a monthly interval
- Graze no lower than 4" if you desire multiple grazing
- For best palatability, graze before it flowers

Planting Tips

You will have success with Tillage Radish® wherever agricultural crops are grown. pH range 5.5-7.5



TIPS FOR SUCCESSFUL TILLAGE RADISH® PLANTING

- For best results, plant in late summer to early fall, at least 3 weeks (typically 30-60 days) prior to the average first killing frost date.
- Green growth starts in less than 1 week in normal conditions. The size of the Tillage Radish depends on soil fertility, length of growth time, plant competition and available nutrients to scavenge.
- Tillage Radish will germinate rapidly and typically start appearing within days. If using a burndown herbicide to clean up existing weeds, wait no longer than 2 days after planting Tillage Radish.
- Tillage Radish begins to winterkill when temperatures fall to the mid-teens for 2 or 3 nights, similar to fall-planted spring oats.
- In most areas, Tillage Radish will decompose in time for spring planting, preparing the field for planting conditions and enhancing the availability of nutrients already in your soil.
- Tillage Radish is a broad leaf plant. Consider this when planning your herbicide program.
- Fertilizer input needs are significantly reduced; available leftover (N) has been held and herbicide is reduced due to Tillage Radish suppression of winter annuals.

NITROGEN

In order to grow to their fullest potential they will need 40-60 lbs of (N) – accumulated or residual. Most fields have enough (N) left over from the previous crop. Upon decomposition in the spring, Tillage Radish will give (N) back in time to utilize in the spring crop.

Applying manure or chicken litter is preferred before planting but can be done just prior to emergence. Liquid manure can only be spread after plant leaves are 4" in size. The practice may cause some burning of the leaves and will have plant damage along tire tracks.

The Tillage Radish tuber and foliage will take up to 150 lbs/acre of (N) from the manure, so it is a great benefit to store nutrients when there is a need to spread manure after crop harvesting in the fall.

PLANTING DEPTH

Plant 1/4 to 1/2 inch deep. Can be planted 1" in light soils if necessary to reach moisture

SEEDING RATES (Tillage Radish Planted Alone)

Precision Planter - 4 lbs/acre

- 15" rows using 60-cell small milo or small sugar beet plates with 4" in-row spacing
- Seed is selected for Precision Planting performance. Seeds per lb are located on seed bag label

Drill Seeder - 6 lbs/acre

- Using small grass box, use alfalfa setting as a guide to set seeding rate. A large seed box can be used but the setting is very low and somewhat difficult to establish. Use Alfalfa as comparable seed on drill charts, reducing by 10%. It's important to calibrate your drill to determine correct seeding rate

Broadcasting/Aerial Seeding - 8-10 lbs/acre

- Strive for good soil and moisture contact. If fields are moist, fly seeds on. If fields are dry, push seeds in
- Corn seeding indicator is when 1" patches of sunlight on soil surface are seen or approximately 4 weeks prior to anticipated harvest time
- Soybean seeding indicator is at leaf yellowing
- Cotton seeding indicator is right before defoliation
- Improve success rate by using drop tubes when seeding with a high clearance cover crop seeder

CONTROL

Tillage Radish winterkills with 3 nights in the mid-teens.

If Tillage Radish is planted very early as a cover crop, flowering can develop before they are winterkilled. This can be controlled with mowing, grazing or burndown of one quart of glyphosate along with one pint of 2,4-D equivalent at flowering.

Precision Planting

GET THE BEST PRECISION PLANTING PERFORMANCE

Save in seed cost... Precision Planting can reduce seeding rates of Tillage Radish® by half!

For precision planting, use a small sugar beet seed disk to plant Tillage Radish and set to plant 4" in-row spacing. Utilizing a precision planter set up for 15" rows is ideal and many farmers plant Tillage Radish in alternating rows with CCS Winter Pea. A standard soybean disk can be used at the same 4" in-row spacing on alternating rows using CCS Winter Pea.

Also, some farmers who have 30" planters will equip one side of the planter to plant Tillage Radish and the other side to plant CCS Winter Pea. They then double back and split the rows creating an alternating row effect.

With a precision planter set to plant at a 4" in-row spacing approximately 4 lbs/acre of Tillage Radish is the

resulting seeding rate in 15" rows. If alternating every other row with peas, the approximate seeding rate is 2 lbs/acre of Tillage Radish and 13 lbs/acre of CCS Winter Pea.

RECOMMENDED SEED DISCS

John Deere Pro or MaxEmerge Vacuum – A51712
(Increase speed by 35%)

Kinze Edge Vac – D17050

Kinze Brush Meter – GA5795

White – 854047

Case/IH 1200 series – 236027A2
(Old Milo Drums improve population)

Precision Planting (eSet disc) – 720220
(Run vacuum at 15")

Monosem – 6020

PRECISION PLANTING EXAMPLES



Precision Planted with wheat using a Kinze 60-cell Small Milo plate with 4" spacing in-row



Tillage Radish 2 lbs/acre Precision Planted with CCS Winter Pea (13 lbs/acre; 60-cell soybean plates) with a 15" White Planter using 60-cell sugar beet plates at 4" in-row spacing



Tillage RootMax™

Deep Root Annual Ryegrass

Tillage RootMax™ is a different kind of annual ryegrass. It's been developed and tested as a superior annual ryegrass (ARG) for cover crop and forage applications. Here are some of the differences you'll see with certified Tillage RootMax Deep Root Annual Ryegrass.

1 Certified uniformity



Tillage RootMax has outstanding uniformity at emergence and throughout growth and maturity, which makes it different than other annual ryegrass varieties. In the spring Tillage RootMax has significantly more top leaf tiller growth than other ARG varieties. Plant energy is designed to be directed to the roots, resulting in a much deeper root zone.

2 Easier control

Where some ARG varieties cause problems in the spring by irregular growth and early heading out, requiring more than one control treatment, Tillage RootMax is much more suited to farming practices where efficiency and productivity are critical. The easier control that Tillage RootMax provides is based on a combination of shorter and more desired dense leaf tillering, uniform growth, and preferred later maturity.

The common control is applying one quart of glyphosate before jointing in spring. Best burndown is achieved spraying on a warm day between 9 am - 4 pm with water adjusted to 5.5 ph.

3 Deeper root mass, better soil structure

The fine root mass of Tillage RootMax grow especially deep to build soil structure through the addition of organic matter, opening of macro pore spaces, introduction of air and water to deeper layers in the soil profile, enhanced soil biological activity, increased water infiltration and water holding capacity after control, and better soil particle aggregation. It all adds up to healthier soil that supports crop growth while reducing input requirements.

4 Later maturity – a certified advantage

- Compared to other ARG varieties, Tillage RootMax is easier to control in the spring.
- You have at least three more weeks of denser tiller leaf growth.

Visit our dedicated website: RootMax.com

The only certified annual ryegrass developed especially for cover crops and superior forage quality

- You have three more weeks to burn down Tillage RootMax than other varieties.
- The preferred late 'heading out' is a big help when fields are wet in the spring and conditions require greater flexibility for the herbicide application.

5 Excellent nitrogen (N) scavenging

This is why most farmers look to annual ryegrass (ARG) to plant over winter to keep the soil covered, help improve soil structure, and store significant amounts of nutrients in addition to N.

What makes Tillage RootMax different is its noticeably deeper roots. That means it grows deeper in to the soil to extract and hold nutrients. At termination before row crops are planted, these nutrients are plant available, helping reduce input requirements.

6 Reduced soil loss

Soil erosion conditions are minimized when fields are effectively planted with Tillage RootMax as a cover crop, eliminating exposed soil that would otherwise become crusted and "sealed" when rain drops cause surface compaction on bare soil. Tillage RootMax also encourages water to infiltrate the soil profile instead of washing downstream. This cover also prevents wind blown particles from forming dust clouds.

7 Water management

Tillage RootMax planted as a cover crop is a simple way to improve water infiltration as a potential hedge against drought. Its dense top growth protects the soil from rain drop compaction, the exceptionally deep roots provide channels for water to infiltrate deeper than ever, and when terminated, the loosened channels left in the soil by its roots let cash crop roots grow deeper to get that stored moisture. Think of RootMax as a deeper, denser, underground moisture reservoir.

8 Research is showing other benefits

Current research on Tillage RootMax shows a significant reduction in soybean cyst nematode populations. Other research includes forage trials and winter hardiness. Meanwhile, Tillage RootMax has already set new standards by providing the needed benefits when planted as a cover crop and added value to your cover crop blends.

KEY BENEFITS

- Certified genetic purity
- Uniform stand maturity for easier burndown
- Very deep soil-building roots
- Late heading out, longer spring window
- Winter hardy
- Unique morphology
- High vegetative tillering
- Outstanding nutritional value
- Breaks up hardpan & compaction
- Scavenges nutrients, esp. nitrogen
- Speeds up transition to continuous no-till
- Increases crop yields and profits

GENETIC
Certified
PURITY

Tillage RootMax™

**MORE TILLERS
DEEPER ROOTMASS**



Deep Root Technology: Now Available After 13 Years in Development

Tillage RootMax™ Deep Root Annual Ryegrass is the only variety certified for genetic purity for use as a cover crop and forage. The certified genetic purity assures maximum performance of unique properties of this new annual ryegrass, including:

- Uniform emergence leads to more even growth
- Even growth makes for easier control in the spring; one trip in most cases
- Roots go deeper than most other annual ryegrass varieties
- Improved soil structure goes deeper in the soil profile, providing enhanced growing conditions for following cash crops
- Outstanding nutritional value for forage
- Excellent for grazing or haylage production

PLANTING TIPS & SEEDING RATE

Planting: Plant 3-10 weeks prior to the first killing frost

Seeding Depth: 3/8 - 0.5"

Comparable seed on Drill chart is Tall Fescue (reduce by 20%), Crested Wheat Grass (reduce by 10%), Annual Ryegrass

Seeding Rate:

- **Cover Crop by Drill (7.5" rows):** 12 lbs/acre
- **Broadcast / Aerial Seeding:** 15-18 lbs/acre
- **Forage by Drill or Broadcast:** 18-30 lbs/acre
- **Precision Planting (15" with 1.5" in-row):** 10 lbs/acre
(Kinze Brush Meter with Backing Plate - 60 Cell Milo Plate)

Control: Applying one quart of glyphosate before jointing in spring. Best burndown is achieved by spraying on a warm day between 9 am - 4 pm with water adjusted to 5.5 ph.

Visit RootMax.com for more helpful control tips and information.



Scan code for additional planting information



TillageMax BLENDS

High Performance Cover Crop
Blends Featuring Tillage Radish®

KEY BENEFITS

- Increases yields and profits
- Improves soil health & fertility
- Scavenges nutrients, esp. nitrogen
- Reduces soil compaction
- Suppresses weed growth
- Enhances seed bed
- Reduces input
- Helps control nematodes



Scan code for additional planting information

The new TillageMax Blends is a line of high performance cover crop and forage blends only from Cover Crop Solutions. Each blend delivers the benefits of Tillage Radish® with the superior characteristics of Tillage RootMax™ Deep Root Annual Ryegrass, CCS Crimson Clover, and CCS Oats.



TillageMax Indy™ Blend

Tillage Radish® + Tillage RootMax™
+ CCS Crimson Clover

This 3-way blend provides a combination of deep soil tillage and yield improvements achieved by the Tillage Radish taproot and Tillage RootMax Deep Root Annual Ryegrass fibrous roots, along with the nitrogen fixing advantages of CCS Crimson Clover.

An excellent option for getting more out of your cover crop program, this high performance blend scavenges, produces and releases (N) when crops need it most while providing other soil health building benefits.



Tillage Radish

Tillage RootMax
Deep Root Annual Ryegrass

CCS Crimson Clover

Planting: Plant 3-10 weeks prior to first killing frost

Seeding Depth: 0.25 - 1"

Comparable seed on Drill chart is Tall Fescue (reduce by 25%), Crested Wheat Grass (reduce by 15%), Annual Ryegrass

Seeding Rate:

- **Drilling:** 15 lbs/acre

- **Broadcast / Aerial:** 17-20 lbs/acre

- **Precision Planting (15" with 2" in-row):** 12 lbs/acre

(Kinze Brush Meter with Backing Plate - 60 Cell Milo Plate)

Control: Tillage Radish winterkills with 3 nights in the mid-teens. Tillage RootMax and CCS Crimson Clover require a burndown of one quart of glyphosate with one pint of 2,4-D. Best control is achieved spraying on a warm day between 9 am - 4 pm with water adjusted to 5.5 ph. Visit RootMax.com for more control tips and information.



TillageMax Daytona™ Blend

Tillage Radish® + CCS Crimson Clover

Tillage Radish is the only proven yield-boosting cover crop radish, and absorbs soil nitrogen and other key nutrients with its unique taproot that grows 30" and deeper.

CCS Crimson Clover converts atmospheric nitrogen into plant available nitrogen, helping reduce fertilizer input while improving soil health by adding organic matter. Maximum nitrogen is achieved at first flower of CCS Crimson Clover. This is a high performance cover crop blend.

Tillage Radish



CCS Crimson Clover

Planting: Plant 3-10 weeks prior to first killing frost

Seeding Depth: 0.25 - 1"

Comparable seed on Drill chart is Alfalfa. Small seed box can be used

Seeding Rate:

- **Drilling:** 10 lbs/acre

- **Broadcast / Aerial:** 13-15 lbs/acre

- **Precision Planting (15" with 1.5" in-row):** 8 lbs/acre

(Kinze Brush Meter with Backing Plate - 60 Cell Milo Plate)

Control: Tillage Radish winterkills with 3 nights in the mid-teens. CCS Crimson Clover can be controlled by a spring burndown with one pint of 2,4-D type herbicide along with one quart glyphosate.



TillageMax INDY™ Blend



TillageMax DAYTONA™ Blend



TillageMax BRISTOL™ Blend



TillageMax DOVER™ Blend



TillageMax Bristol™ Blend

Tillage Radish® + Tillage RootMax™

Tillage Radish breaks up soil compaction with its aggressive taproot, creating thick channels 30" or deeper. This unique nitrogen storage tank holds N and other nutrients over winter and releases them as needed by following cash crops.

Tillage RootMax Deep Root Annual Ryegrass builds soil structure deeper than many other ARG varieties. In combination, this outstanding cover crop mixture provides added cover in the spring prior to burndown.

Tillage Radish



Tillage RootMax Deep Root Annual Ryegrass

Planting: Plant 3-10 weeks prior to first killing frost

Seeding Depth: 0.25 - 1"

Comparable seed on Drill chart is Tall Fescue (reduce by 25%), Crested Wheat Grass (reduce by 15%), Annual Ryegrass

Seeding Rate:

- **Drilling:** 12 lbs/acre

- **Broadcast / Aerial:** 15-17 lbs/acre

- **Precision Planting (15" with 1.75" in-row):** 10 lbs/acre

(Kinze Brush Meter with Backing Plate - 60 Cell Milo Plate)

Control: Tillage Radish winterkills with 3 nights in the mid-teens. If it does not winterkill, add one pint of 2,4-D type herbicide. Tillage RootMax requires a burndown of one quart of glyphosate. Best control is achieved spraying on a warm day between 9 am - 4 pm with water adjusted to 5.5 ph. Visit RootMax.com for more control tips and information.



TillageMax Dover™ Blend

Tillage Radish® + CCS Oats

Both excellent scavengers of N, this Tillage Radish and CCS Oats mix will grow rapidly in cool weather and is ideal for quick fall cover.

Tillage Radish breaks up soil, even in the compaction zone, with its long, singular taproot to create thick channels 30" or deeper. This blend enhances seedbeds, provides more ground cover in spring, helps control erosion, works to control harmful nematodes, and will winterkill for easy spring management.

Tillage Radish



CCS Oats

Planting: Plant 3-10 weeks prior to first killing frost

Seeding Depth: 0.5 - 1"

Comparable seed on Drill chart is Oats

Seeding Rate:

- **Drilling:** 25 lbs/acre

- **Broadcast / Aerial:** 30-45 lbs/acre

- **Precision Planting (15" with 5" in-row):** 20 lbs/acre

(Kinze Brush Meter with Backing Plate - 60 Cell Soybean Plate)

Control: Winterkills after 3 nights in the mid-teens. If Tillage Radish or CCS Oats does not winterkill, apply a combination of one pint of 2,4-D type herbicide along with one quart of glyphosate at flowering or heading.

Farmers say, “It pays to use Tillage Radish®”

“Tillage Radish is a bio sub-soiler. They are a good reason to park the steel!” — **Mike Phillips, Virginia**

“The ground where I’d planted Tillage Radish in the fall was the mellowest I had this spring. I am tickled-to-death with them.” — **Brian Melvin, Delaware**

“Real good stand last fall; this spring the field worked up just like it had been gone over with a rototiller. We disced twice and planted corn. The field looks lovely, even and green.” — **Mike Steevers, Gadshill, ON**

“So much better than Oilseed Radish!”
— **Rod Secord, Secord Farms, Thamesville, ON**

“Last fall I used 2 pounds of Tillage Radish when I planted the wheat. In the States, they are claiming a yield increase.”
— **Dave Van Raay, Charing Cross, ON**

“Tillage Radish worked really well and I want more seed for this year.” — **Dan Jantzi, Baden, ON**

“We absolutely loved what Tillage Radish did to our mostly clay soils. We won’t need to subsoil as much anymore – the radishes really do the trick! Our best looking corn is where Tillage Radish was planted.”

— **Lyle Tabb, West Virginia**

“Tillage Radish was everything I expected. You can literally see a difference in the soil... Unbelievable!”

— **Gary Sweet, Ohio**

“It looks like it did the job!”

— **Gardiner Farm Inc., Kirkton, ON**

“In one pass, with Tillage Radish at a reasonable cost, I got aeration, compaction reduction, erosion control, carbon addition, organic matter and a bio-stimulant. Corn on the field this year looks excellent.”

— **Dan Breen, Putnam, ON**

“We have been using Tillage Radish as a cover crop for the past 4 years. The radish has done its bio-drilling, and seems to leave a “film” over the top of the ground that inhibits the spring weed flush. The field looks as if you have run an AerWay over the ground from the decaying radish holes. We feel the radish does help to reduce the compaction because of the aggressive root growth. We have seen roots in excess of 3 feet on our farms. We plan to plant over 500 acres of Tillage Radish this year.”

— **Furmano Foods, Pennsylvania**

“It’s a keeper! We noticed right to the row the difference in how mellow the soil was where the plot of Tillage Radish was planted.” — **Eugene Lapp, Pennsylvania**

“We didn’t have to strip-till where Tillage Radish was planted. They really softened up our clay soil! Also, our pre-side-dress nitrate testing indicated we didn’t need as much nitrogen where Tillage Radish was planted.”

— **Patterson Farms, New York**

“I’ve planted Tillage Radish for the last four years. They are a great addition for a diversified cover crop mix.”

— **Ray Styer, North Carolina**

“There were no winter annual weeds or crusting where Tillage Radish was planted. We direct seeded our organic beets and had a great stand. For early spring planting there’s nothing like it!” — **One Straw Farm, Maryland**



“The ground was much easier to work where I planted Tillage Radish® last fall. They are really helping with some of the soil quality issues I have. The soil was so loose, I didn’t even have to work my ground before making raised beds for my vegetables.” — **Guy Moore, Maryland**

“We love the holes they leave in the soil in the spring for water infiltration. We stopped using the DMI where Tillage Radish is planted.” — **Steve Rainey, Virginia**

“We got increased yields in our cotton following Tillage Radish. I’m going to plant more this year.”

— **Tim Tucker, Alabama**

“Tillage Radish is awesome! It broke up my heavy clay soil and made it more mellow. I was able to plant earlier.”

— **George Van Wychen, Wisconsin**

“Last fall I planted 1/3 of the field with oats, 1/3 with oats and Tillage Radish and 1/3 with Tillage Radish alone. Where the radish was the field worked easier.”

— **Mark Brubacher, Wallenstein, ON**

“The Tillage Radish put on tremendous root growth in a short time in the fall and then decay rapidly in the spring. We’re putting them in all of our cover crop mixes now.”

— **Ken Miller, North Dakota**

“We were surprised at how clean the field was this spring. The ground was loose. Soybeans planted this spring in the radish field look great.”

— **Barry & Larry Richards, Chatham Kent Organic Epi-Centre Inc., Dresden, ON**

“Our crop came up very fast and produced a good root quickly. We planted a little too late and they were killed by cold at Thanksgiving. We are going to plant earlier this year and mix with other covers.” — **Richard Nottingham**

“Last summer we tilled a field and later disced in the Tillage Radish. Leaving it as late as we could in the fall, we then planted winter spelt. The field of spelt looks really good now. Tillage Radish sure opens up the ground.”

— **Brad Torrie, Torrie Farms, Chatsworth, ON**

“I was impressed with the size, depth, and germination of the Tillage Radish. By spring it was completely rotted away leaving lots of holes.” — **Barry Forsyth, Dresden, ON**

“We used Tillage Radish on 50 acres last year, the pumpkins preformed very well. The soils were much looser where Tillage Radish was used compared to just an oat cover crop.”

— **Tracy Lewis, Brian Campbell Farms, Pennsylvania**

“I planted half a field to Tillage Radish and could see right to the row the following spring that the corn was greener and healthier on the Tillage Radish side. It was unreal what they did to the soil and made me question why I was strip-tilling where the tillage radishes were planted.”

— **Dale Hollings, New York**

“Tillage Radish grew great and I was impressed how they compared to other covers we were testing. They definitely helped alleviate compaction in our sandy soil. There were no weeds in the Tillage Radish plot in the spring so we didn’t need a burndown herbicide.”

— **Brian Hearn, University of Delaware**

Tillage Radish[®] Research

FINDING NEW WAYS TILLAGE RADISH CAN PAY

Dr. Ray Weil of University of Maryland has dedicated countless hours and energy into the discovery of the genetically superior Tillage Radish and its ability to deliver dependable, consistent results.

Dr. Weil has worked in conjunction with other universities and their Grad students to continue researching and proving the benefits of this one-of-a-kind cover crop radish.

Dr. Weil's Grad Students have worked to collect data from replicated plots on Steve Groff's Cedar Meadow Farm and other farms in the Mid-Atlantic Region. Since 2001, Dr. Weil has led the charge in researching the effects Tillage Radish have in helping farmers to be better stewards of the soil they manage. He continues to pursue potential uses of Tillage Radish.

We currently have Tillage Radish being evaluated at these domestic universities, and globally at hundreds of farms.

- Auburn University
- Cornell University
- North Carolina State University
- NRCS Big Flats Materials Center, Corning NY
- Ohio State University
- Oklahoma State University
- Penn State University
- University of Arkansas
- University of Delaware
- University of Illinois
- University of Maryland
- USDA ARS, Beltsville MD
- Virginia Tech
- Western Illinois University
- West Virginia University





Get Started with Cover Crops

COVER CROPS THAT PAY

Our genetically superior Tillage Radish[®], certified Tillage RootMax™ Deep Root Annual Ryegrass, TillageMax Blends and other genetically pure cover crop seeds are the right way to start cover cropping and boost your bottom line. Our authorized dealer network is ready to assist in getting cover crops to benefit your operation.

When you work with Cover Crop Solutions to integrate Tillage Radish and our other high quality seed into your current farming system, you not only gain the many benefits of our products; you gain a partner in successful cover cropping.

CoverCropSolutions.com

LEADER IN COVER CROP SEEDS



Our focus and commitment is to:

- Develop and source superior cover crop genetics
- Fulfill comprehensive research on cover crop technology
- Educate farmers on cover crops
- Continue to be the leading national seed company dedicated exclusively to cover crops



U.S. TO METRIC CONVERSIONS

TEMPERATURE

Fahrenheit to Celsius

$$32^{\circ} \text{ F} = 0^{\circ} \text{ C}$$

$$15^{\circ} \text{ F} = -9.44^{\circ} \text{ C}$$

DEPTH & WIDTH

Inches to Centimeters

$$\frac{1}{4} \text{ in} = 0.64 \text{ cm}$$

$$\frac{1}{2} \text{ in} = 1.27 \text{ cm}$$

$$1 \text{ in} = 2.54 \text{ cm}$$

$$4 \text{ in} = 10.16 \text{ cm}$$

$$15 \text{ in} = 38.10 \text{ cm}$$

$$30 \text{ in} = 76.20 \text{ cm}$$

WEIGHT

Pounds to Kilograms

$$1 \text{ lb} = 0.45 \text{ kg}$$

$$2 \text{ lbs} = 0.91 \text{ kg}$$

$$4 \text{ lbs} = 1.81 \text{ kg}$$

$$10 \text{ lbs} = 4.54 \text{ kg}$$

$$12 \text{ lbs} = 5.44 \text{ kg}$$

$$20 \text{ lbs} = 9.07 \text{ kg}$$

$$40 \text{ lbs} = 18.14 \text{ kg}$$

$$50 \text{ lbs} = 22.68 \text{ kg}$$

VOLUME

Quarts to Liters

$$1 \text{ pt} = 0.47 \text{ l}$$

$$1 \text{ qt} = 0.95 \text{ l}$$

Bushels to Liters

$$1 \text{ bu} = 35.24 \text{ l}$$

AREA

Acres to Hectares

$$1 \text{ ac} = 0.40 \text{ ha}$$



Cover Crop Solutions (CCS) Seed Planting Guide

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Cover Crops That Pay![™]

Visit website for planting updates

Cover Crop Solutions
800-767-9441
 CoverCropSolutions.com



Scan code for detailed seeding information

	Planting Window Weeks before Avg. First Killing Frost	Seeding Depth Inches	Drilled (7.5" rows) Seeding Rate Lbs/Acre	Comparable Seed on Drill Chart	Can use small seed box?	Broadcast Seeding Rate Lbs/Acre	Precision Planting (PP) 4" in-row spacing. Refer to bag label for seeds per lb.	(PP) 15" rows 4" in-row Lbs/Acre*
Tillage Radish[®]	3 to 10	.25 to 1	6	Alfalfa (reduce by 10%)	Yes	8-10	Small Sugar Beet Plate	4
Tillage RootMax[™] Certified Annual Ryegrass	3 to 10	3/8 to .5	12	Tall Fescue (reduce by 20%), Crested Wheat Grass (reduce by 10%) or Annual Ryegrass	Yes	15	Kinze Brush Meter with Backing Plate (60 Cell Milo Plate)	10 (1.5" in-row)
Phacelia	March to May, Aug. to Sept.	.5	7	Alfalfa	Yes	9	Not Rec.	Not Rec.
CCS Winter Triticale	4 weeks prior to first killing frost to 6 weeks after	1 to 1.5	60	Wheat	No	70	Kinze Brush Meter- 60 cell Soybean Plate (2" in-row) White - Wheat Plate	50
Nitrogen Producing Cover Crop Legumes (specific inoculant required)								
CCS Winter Pea	3 to 10	1 to 1.5	40	Soybean	No	Not Rec.	Soybean Plate	26
CCS Crimson Clover	3 to 10	.25 to .5	12	Crimson Clover	Yes	15	Not Rec.	Not Rec.
CCS Lupin Sweet Blue Lupin	3 to 10	1 to 1.5	40	Soybean	No	Not Rec.	Soybean Plate	30
CCS Hairy Vetch	2 to 10	.5 to 1.5	15	Vetch or Sorghum	No	20	Small Sugar Beet Plate	7
CCS Sunn Hemp	Anytime after frost free date in Spring / 8 weeks prior to killing frost in Fall	.5 to 1	15	Wheat	No	Not Rec.	Small Sugar Beet Plate	9
Exclusive TillageMax Cover Crop Blends								
TillageMax INDY[™] Blend Tillage Radish [®] + Tillage RootMax [™] + CCS Crimson Clover	3 to 10	.25 to 1	15	Tall Fescue (reduce by 25%), Crested Wheat Grass (reduce by 15%), Annual Ryegrass	No	17	Kinze Brush Meter with Backing Plate (60 Cell Milo Plate)	12 (2" in-row)
TillageMax BRISTOL[™] Blend Tillage Radish [®] + Tillage RootMax [™]	3 to 10	.25 to 1	12	Tall Fescue (reduce by 25%), Crested Wheat Grass (reduce by 15%), Annual Ryegrass	No	15	Kinze Brush Meter with Backing Plate (60 Cell Milo Plate)	10 (1.75" in-row)
TillageMax DAYTONA[™] Blend Tillage Radish [®] + CCS Crimson Clover	3 to 10	.25 to 1	10	Alfalfa	Yes	13	Kinze Brush Meter with Backing Plate (60 Cell Milo Plate)	8 (1.5" in-row)
TillageMax DOVER[™] Blend Tillage Radish [®] + CCS Oats	3 to 10	.5 to 1	25	Oats	No	30	Kinze Brush Meter with Backing Plate (60 Cell Soybean Plate)	20 (5" in-row)

IMPORTANT: CHARTS ARE ONLY A GUIDE. RATES ARE AFFECTED BY SEED SIZE AND QUALITY, EQUIPMENT CALIBRATION, WHEEL SLIPPAGE, SOIL FERTILITY AND RAINFALL, ETC. Not Rec. = Not Recommended
 * Use the 15" rows as a reference for alternating rows

Kinze Brush Meter- 7878 Milo Plate, D7879 soybean plate

Small Sugar Beet Plate- John Deere Pro or MaxEmerge Vacuum-A51712 (Increase speed by 35%), Kinze Edge Vac-D17050, Kinze Brush Meter-GA5795, White-854047, Case/IH 1200 series-236027A2 (Old Milo Drums improve population), Monosem-6020, Precision Planting (eSet disc-720220 (run vacuum at 15"))

Guidelines to Aerial Seeding

If the fields are moist, fly seeds on.
 If fields are dry, push seeds in.

Seeding rate adjustments, based on drilling rate

- Broadcasting** - Increase seeding rate by 25%
- Aerial Seeding** - Increase seeding rate by 30%
- Forage Seeding** - Increase seeding rate by 30%
- Precision Planting** - Decrease rate 10% to 50%
- Late Planting** - Increase seeding rate 10-20%

For SEED BLENDS and MIXTURES

To calculate a setting for seed blends and mixtures, add index settings for quantity of each seed to be sown: Ex to sow 2 lbs. of Tillage Radish and 10lbs of Tillage RootMax Annual Ryegrass use the index setting for each seed and add them together to set shifter on the proper notch.
 Smaller seeds like CCS Crimson Clover require no adjustments.

Adjust calibration based on apparent seed weight.

- INCREASE** index setting for seed lighter than average seed.
 - DECREASE** index setting for seed heavier than average seed.
- Approximate guide for ideal seeding depth is 6 to 8 times the thickness of the seed.

Note- Please place this Seed Planting Guide next to your seed box charts.

For more information or to find a dealer, call or visit:

800-767-9441
CoverCropSolutions.com



509 West Penn Ave, Suite 10 • Robeson, PA 19551
 800-767-9441 • CoverCropSolutions.com

Tillage Radish is available through a network of authorized Tillage Radish distributors.

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