

ForGround
by Bayer

The Soil-Strengthening
Benefits of
COVER CROPS



FORGROUND
EBOOK SERIES

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Uses and Benefits of Cover Crops

By ForGround by Bayer



The use of cover crops in agriculture has many agronomic and economic benefits as well as challenges. In some agricultural areas, such as the Chesapeake Bay, cover crop use has been supported by funding to help **increase water quality and reduce nutrient runoff** and leaching during non-cropping months. According to the 2017 Census of Agriculture, cover crop acreage increased about 50% from 2012 (10 million acres) to 2017 (over 15 million acres).¹



Cover crops can help with

- Reduce wind and water erosion
- Mitigate soil compaction
- Improve water infiltration
- Keep residual fertilizer in the field
- Add organic matter and nutrients to the soil
- Absorb excess moisture
- Provide a food source for livestock and wildlife
- Provide sustenance for pollinators
- Control weeds



Cover crop challenges

- If seeding within a standing crop, cover crop seeds may not become established because the soil surface is too wet, too dry, or highly shaded.
- In no-till seedings, good seed-to-soil contact can be difficult because harvest residue may be pinched into the seed slot.
- Termination timing can be challenging for non-winter killed species because of termination (should occur at least two weeks before field crop planting) and the potential for re-growth if not killed.
- Cover crop seed selection may be limited by a previous herbicide application.
- Seeding window for cover crops after harvest of the primary crop may be too short to allow successful establishment before freezing temperatures.

Soil fertility benefits related to cover crops include **increased rates of infiltration, nutrient cycling and residue decomposition.**



¹ Census finds cover crop acreage increases 50% nationwide. 2019. FarmProgress. <https://www.farmprogress.com/>.

Desired Use

The desired use for a cover crop should be determined before choosing which cover crop to use because different cover crops can benefit for different reasons (**Table 1**). Grass species are more likely to hold soil in place from wind and water erosion; fast-growing grasses or Brassica species are a good choice for nutrient retention, and nitrogen (N)-fixing legume cover crops can potentially help reduce the amount of fertilizer N needed. Feed for animals through grazing or harvesting may best be accomplished with fall or winter grasses and legumes. Soil compaction is best addressed with cover crops with penetrating root systems, like radish and deep-rooted annual ryegrass.

Most cover crop species can be classified as warm-season or cool-season plants (**Table 2**). Warm-season plants perform best in warm weather and usually require warm soil temperatures for germination and plant establishment. Cool-season plants perform best in spring or fall, and some can overwinter.

Table 1

Common Cover Crop Characteristics and Recommendations²

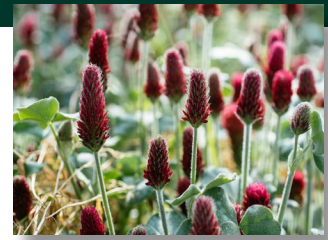
CROP	CHARACTERISTIC	NITROGEN FIXING	OVERWINTERS	DRILLING RATE (lb/acre)	BROADCAST RATE (lb/acre)	COMMENTS
Crimson Clover (Legume)	Winter Annual	Yes	Yes	12-15	20	Fast growing; spring blooms are good for pollinators
Hairy Vetch (Legume)	Winter Annual	Yes	Yes	15	20	Slow fall growth; fast spring growth; avoid planting before wheat
Cereal Rye	Annual Cereal	No	Yes	70-80	100-120	Cold hardy; excellent erosion control; fast spring growth; spring decay after termination may slow corn growth; can plant late in fall; very good at absorbing unused N but decomposition can tie N up
Triticale	Annual Cereal	No	Yes	60-70	80-100	Cross between wheat and cereal rye; good for erosion control and grazing
Oats	Annual Cereal	No	No	80-100	120-140	Good for early fall cover but winter kills; offers fall grazing
Oilseed and Forage Radishes (Brassica species)	Annual	No	No	5-6	8-10	Rapid fall growth; deep taproot for compaction relief; establishes easily; good at absorbing N
Forage Turnips (Brassica)	Annual	No	No	5-6	8-10	Very good for grazing; compaction relief
Annual Ryegrass	Annual	No	No	12-15	20-25	Good forage; good erosion control; requires spring termination; fast growing conducive to interseeding

² Myers, R., Ellis, C., Hoormann, R., Reinbott, T., Kitchen, N., and Reisner, J. 2015. Cover crops in Missouri: Putting them to work on your farm. G4161. The University of Missouri. <https://extension2.missouri.edu/>.

Table 2

Warm- and Cool-Season Cover Crops²

WARM SEASON	COOL SEASON	
Buckwheat	Annual Ryegrass	Crimson Clover
Cowpea	Austrain Winter Pea	Forage Turnips
Foxtail Millet	Balansa Clover	Hairy Vetch
Pearl Millet	Black Oats	Oats
Sorghum-Sudangrass	Brassicas, Other	Oilseed Radish
Sunflower	Canola and Rapeseed	Triticale
Sunn Hemp	Cereal Rye	Wheat



Soil Enhancement

Cover crops can help fields rebound from intensive farming and tillage practices that have led to compaction, erosion, and soil structure damage. Root growth of cash crops in soils with subsoil compaction can be improved by increasing the presence of active living roots. For example, soybean roots can grow into root channels created by deep-rooted annual ryegrass.³ Reducing erosion is one of the main goals of growing cover crops and is dependent on how much the cover crop reduces the forces of soil detachment and transport. Soils are susceptible to erosion when they lack cover from a crop canopy and residues. Above-ground biomass from cash crops may only last four months but cover crops can be used to supplement additional soil surface cover. Cover crop growth extends the period of biomass production and can build soil organic matter (SOM). Climate and vegetation are two of the most important factors influencing the amount of SOM near the soil surface. Increasing SOM creates larger, more stable soil aggregates near the soil surface, which helps decrease the potential for soil detachment and erosion.

Soil structure, soil fertility, and soil health are associated with SOM as are many physical and chemical characteristics of soils. No-till practices help preserve the SOM gained from cover crop growth. Conversely, tillage quickly breaks down SOM. An approximate 9% SOM increase in the top foot of soil was produced from rye and hairy vetch cover crops on a no-till corn and soybean field in Illinois.⁴ Agricultural top soils have SOM levels ranging from 1 to greater than 5% with the potential to release 10 lb of N/acre/year for each 1% of SOM.⁵

Additional soil fertility benefits related to cover crop use include increased rates of infiltration, nutrient cycling, and residue decomposition. Cover crops can reduce nutrient loss by improving soil water infiltration. By keeping precipitation in fields, sediment detachment and transport can be reduced, which is important for the retention of phosphorus (P). Phosphorus is attached to soil sediment, and P losses in runoff were reduced by 54 to 94% with various cover crops and different site years.⁴

² Myers, R., Ellis, C., Hoermann, R., Reinbott, T., Kitchen, N., and Reiser, J. 2015. Cover crops in Missouri: Putting them to work on your farm. G4161. The University of Missouri. <https://extension2.missouri.edu/>.

³ Bennett, D. 2013. Cover crop use growing as corn/soybeans acreage is on the upswing. Delta Farm Press. <https://www.farmprogress.com/>.

⁴ Kaspar, T.C. and Singer, J.W. 2011. The use of cover crops to manage soil. Soil Management Practices. American Society of Agronomy and Soil Science Society of America. Chapter 21

⁵ Mitchell, C.C. and Everest, J.W. 1995. Interpreting soil organic matter tests. Soil Testing & Plant Analysis. SERA-IEG-6'1. Auburn University. <http://aesl.ces.uga.edu/>.

Grazing* or Harvesting

Establishing cover crops for livestock feed provides a dual advantage – conservation and economic return through meat, milk, and manure. Residual herbicide labels should be read and followed as restrictions for livestock consumption may apply. Depending on the crop, grazing may occur in the fall, during the winter, or in the spring. For fall or early winter grazing, a fast-growing species should be used such as oats, rye, or Brassica species. However, rye should not be overgrazed in the fall because of lower overwinter plant survival and if in-spring grazing is desired. Brassica species should not be grazed alone because of their ability to take up excess N that may result in bloating of ruminants.



RADISH TAPROOT DOWN 8 INCHES ALONG WITH ANNUAL RYEGRASS ROOTS.

If spring grazing is desired, winter-hardy species such as winter rye, triticale, barley, or wheat are considered. If the cover crop is to be harvested for feed it should be cut by the boot stage for best forage quality and water preservation (water uptake increases during reproductive stages). Grazing helps keep some of the nutrients in the field while harvesting can remove nutrients but still provides soil health benefits. Crop insurance programs should be reviewed to determine any potential effect on insurance payments.

Weed Suppression

Cover crops are being used to help control weeds after harvest and into early spring before planting. A thick, robust, and healthy cover crop can help suppress weed growth by changing the soil dynamics and becoming established and growing quicker than weeds, and smothering weed seedlings

A lush cover crop can keep soils too cool for some weed seeds to germinate or for winter annuals to aggressively grow. Cover crops that winter-kill or are terminated with herbicides in the spring can provide a mat that helps keep weeds from germinating. Additionally, some cover crops produce chemicals that are toxic to certain germinating seeds (allelopathy).

Cover crops can help fields **rebound from intensive farming and tillage practices** that have led to compaction, erosion, and soil structure damage.



Cover Crop Termination

Controlling cover crops before spring planting can be a challenge under some circumstances. Planning and scouting are critical for a successful control program. Removal of cover crops is influenced by the species used (grasses, Brassica species, cereals, broadleaves) their growth stage, temperature, and the crop to be planted. Methods to control cover crops include winterkill, tilling, mowing, and herbicides. The geographical location can limit or be advantageous for cover crop winterkill.

*Grazing or harvesting cover crops is not permitted as part of the Bayer Carbon Program.

To minimize the potential for corn or soybean yield loss, cover crops should be terminated at least two weeks before planting the field crop. Termination four to eight weeks before spring planting may allow for faster soil warming, residue drying, and decomposition.⁵ However, delaying termination until two weeks prior helps maximize the benefits that cover crops provide. Should spring-time moisture be limited, consideration should be given to terminating the cover crop at six to eight inches tall.

While termination via tillage may accomplish the goal, it can reduce some of the benefits provided by the cover crop.⁶ Roller-crimpers can be used to kill tall-growing cover crops by breaking or crimping the stem of the flowering stage or later plants. Mowing can be an effective killing method for some species.

When selecting herbicides to control cover crops, consideration should be given to the cover crop species, the weed species present, the growth stage and plant height of each, weather conditions at application, and the nature of herbicide activity (systemic or contact), and the crop to be planted. Non-selective herbicides include contact herbicides (paraquat, glufosinate) and systemic herbicides (glyphosate). Systemic herbicides translocate (move within the plant) to the plant's site of action, but the rate of translocation is influenced by plant metabolism. Actively growing crops under warm temperatures have higher metabolism rates that move systemic herbicides to their site of action more quickly. Therefore, applications should be

made after 3-4 days of daytime temperatures in the high 50° to low 60° F range and nighttime temperatures greater than 40° F.⁷ When using herbicides, the product label must be read for application guidelines and re-cropping restrictions concerning the following crop.

To maintain farm program eligibility for federal crop insurance on spring-planted crops and other programs, check with your local Farm Service Agency (FSA) concerning specific cover crop termination dates for your area.⁸

Seeding Rates

Seeding rates vary depending on the seeding method and if a cover crop species is planted by itself or in a combination of two or more species. Aerial, drilled, and broadcast rates should be higher than if a row crop planter is used because seed-to-soil contact is much less. Smaller seeded species such as radish, turnip, flax, rapeseed, cereal rye, and barley are best suited for broadcast or aerial seeding. Larger seeded species such as peas and sunflowers should be drilled, or row crops.⁹ The mix ratio may vary based on the cover crop objective. A proportional rate for a two-way mix maybe 55 to 60% of the normal rate of a species by itself. A three-way mix maybe 35 to 40% of an individual species.²

1 Census finds cover crop acreage increases 50% nationwide. 2019. FarmProgress. <https://www.farmprogress.com/>.

2 Myers, R., Ellis, C., Hoermann, R., Reinbott, T., Kitchen, N., and Reisinger, J. 2015. Cover crops in Missouri: Putting them to work on your farm. G4161. The University of Missouri. <https://extension2.missouri.edu/>.

3 Bennett, D. 2013. Cover crop use growing as corn/soybeans acreage is on the upswing. Delta Farm Press. <https://www.farmprogress.com/>.

4 Kaspar, T.C. and Singer, J.W. 2011. The use of cover crops to manage soil. Soil Management Practices. American Society of Agronomy and Soil Science Society of America. Chapter 21

5 Mitchell, C.C. and Everest, J.W. 1995. Interpreting soil organic matter tests. Soil Testing & Plant Analysis. SERA-IEG-6¹. Auburn University. <http://aesl.ces.uga.edu/>.

6 Johnson, J. Termination time for cover crops. USDA. Natural Resources Conservation Service. Iowa. <https://www.nrcs.usda.gov/>.

7 Loux, M. 2007. Burndown herbicide activity—can we kill anything when it's this cold? C.O.R.N. Newsletter 2007-08. The Ohio State University. <http://corn.osu.edu/>.

8 NRCS cover crop termination guidelines. 2019. USDA.

9 DeJong-Hughes, J. 2018. Guide to planting cover crops in Minnesota. <https://extension.umn.edu/>.

Additional Sources:

• Benefits of cover crops. Managing Cover Crops Profitably, 3rd Edition. SARE. <https://www.sare.org/>.

• Cover crops. MSU Extension. Michigan State University. <https://www.canr.msu.edu/>.

• Filbert, M. Livestock & cover crops. Practical Farmers of Iowa. <https://practicalfarmers.org/>.

• Hartzler, B. and Anderson, M. Effect of residual herbicides on cover crop establishment. Integrated Crop Management. Iowa State University. <https://crops.extension.iastate.edu/>.

• Williams, S.M. and Weil, R.R. 2004. Crop cover root channels may alleviate soil compaction effects on soybean crops. Division S-6-Notes. Soil Science Society of America Journal 68:1403-1409. <https://www.enst.umd.edu/>.

Cover Crops Stealing or Conserving Water?

By Tyler Williams, ForGround by Bayer Sustainable Systems Agronomist



Ways cover crops alter the water balance and how you can use cover crops to consume or conserve water.



Water use and cover crops can be very simple and complex all at the same time. Cover crops, like all plants, need and use water; however, the complexity can come in the amount of water used, when it is used, and the potential water balance changes with surface evaporation alterations, soil physical and biological changes, snow “catching” ability, etc. It also can be further complicated by environmental conditions and management systems.

The “definition” of too much or too little water in agriculture often changes by crop, time of year, equipment, the forecast, and likely many more factors. Cover crops can be used to help manage the water to be “just right”, but it comes with challenges and risks.

In the typical corn and soybean rotation in the Midwest, an over-wintering cover crop that grows rapidly in the spring is quite common. This rapid spring growth coincides with cash crop planting and the need for enough moisture for germination, but not too much moisture to limit field work. Various strategies, results, and scenarios can take place and impact the water use and availability.

- A study by Basche et al. in central Iowa over a six-year period on a winter rye versus no cover crop in a corn-soy rotation found the cover crop increased the field capacity water content by 10-11% and the plant available water by 22-22%. Conversely, Martinez-Feria, et al. showed over a similar period and location that the cover crop rye transpiration ranged from 0.43 to 1.73 inches and showed in the dry years of 2012 & 2013, there were yield penalties and reductions in soil moisture.
- A study in a drier environment in far eastern New Mexico from 2018-2020 showed cover crops reduced soil water during the non-cash crop period but increased volumetric water content during the cash crop phase due to the residue cover. Chalise et al. (2018) found in a three-year study in South Dakota on soybeans grown after corn that the soil water infiltration was 80% higher compared to no cover crop comparison and had a soybean yield increase of 14%.
- A study in Akron, CO and Sidney, NE in 2012 and 2013 by Nielsen, et. al, showed cover crop water use averaged 1.78 times greater than evaporative water loss to the no-cover, fallow crop area. Interestingly, they also showed there was no difference in the water use of the single-species cover crop vs the multi-species cover crop mix.

These are just a few research examples of the immediate gains or losses that can result from cover crops using too much moisture or providing the necessary changes to store valuable moisture.

Many studies have found the extended length of time (often 10+ years) it takes to increase soil organic carbon (helps absorb moisture) and improve soil structure to increase plant available water and infiltration (Sindelar, et al. 2018). Basche and DeLonge (2017) found that continuous living cover for over 10 years were more likely to have a positive effect on soil water properties, such as porosity and water retained at field capacity. This is not to discourage taking on this challenge, but to illustrate the need for long-term commitment to see positive change.

The “definition” of too much or too little water in agriculture often changes by **crop, time of year, equipment, the forecast and additional factors.**

Cover crops will use soil moisture relative to growth stage, biomass and environmental conditions. Cover crops can have a more cumulative effect on soil water the longer they are used in the operation. Seasonal differences will be evident with residue and cover crop water use; however, changes in the soil that promote better infiltration and water holding capacity can provide valuable benefits to the cash crop, especially in drier environments. It is important to monitor in-season water use of the cover crops and determine the proper termination timing to mitigate cash crop impact, while maintaining a focus on the long-term goal.

References:

- Basche, A., and M. DeLonge. 2017. The impact of continuous living cover on soil hydrologic properties: A meta-analysis. *Soil Sci. Soc. Am. J.* 81:1179–1190. <https://doi.org/10.2136/sssaj2017.03.0077>
- Basche, A., Kaspar, T., Archontoulis, S., Jaynes, D., Sauer, T., Parkin, T., Miguez, F. 2016. Soil water improvements with the long-term use of a winter rye cover crop, *Agricultural Water Management*, Volume 172, 2016, Pages 40-50, ISSN 0378-3774, <https://doi.org/10.1016/j.agwat.2016.04.006>.
- Chalise, Kopila Subedi; Singh, Shikha; Wegner, Brianna R.; Kumar, Sandeep; Pérez-Gutiérrez, Juan D.; Osborne, Shannon L.; Nleya, Thandiwe; Guzman, Jose; and Rohila, Jai S., “Cover Crops and Returning Residue Impact on Soil Organic Carbon, Bulk Density, Penetration Resistance, Water Retention, Infiltration, and Soybean Yield” (2018). Publications from USDA-ARS / UNL Faculty. 2139. <https://digitalcommons.unl.edu/usdaarsfacpub/2139>
- Hubbard, R., Strickland, T., Phatak, S. 2013. Effects of cover crop systems on soil physical properties and carbon/nitrogen relationships in the coastal plain of southeastern USA, *Soil and Tillage Research*, Volume 126, 2013, Pages 276-283, ISSN 0167-1987, <https://doi.org/10.1016/j.still.2012.07.009>.
- Martinez-Feria, R., Dietzel, R., Liebman, M., Helmers, M., Archontoulis, S. (2016) Rye Cover Crop Effects on Maize: A System-Level Analysis. *Field Crops Research*, V. 196. Pg. 145-159. September 2016. Retrieved from: <https://www.sciencedirect.com/science/article/abs/pii/S0378429016302027>
- Nielsen, D., Lyon, D., Hergert, G., Higgins, R., Calderon, F., Vigil, M. (2015). Cover Crop Mixtures Do Not Use Water Differently than Single-Species Plantings. *Crop Economics, Production, and Management*. *Agronomy Journal*. Volume 107, Issue 3. <https://www.ars.usda.gov/ARSUserFiles/30100500/Publications%202010-2019/23PDF%20Cover%20Crop%20Water%20Use.pdf>
- Sindelar, M., Blanco, H., Jin, V., Ferguson, R. 2018. Cover Crop and Crop Residue Management: How Does it Affect Soil Water in the Short and Long Term? August 13, 2018. UNL CropWatch. Retrieved from: <https://cropwatch.unl.edu/2018/cover-crop-and-crop-residue-management-how-does-it-affect-soil-water-short-and-long-term>

How Do Cover Crops Affect My Crop Insurance?

By ForGround by Bayer



Cover crops can co-exist with crops that are insured in federal crop insurance programs. However, it is important that any **crop insurance policy be reviewed and studied** for information regarding cover crops use in conjunction with an insured crop.

Policy Review

Any crop insurance policy be reviewed and studied for information regarding cover crops use in conjunction with an insured crop. As such, a cover crop is defined as any crop generally recognized by agricultural experts as agronomically sound for erosion control or general soil improvement. **The Risk Management Agency (RMA) does not have an approved list of cover crops, but consultation with a local agronomist may be able to provide a recommendation of which species would be best for soil conservation on a particular field or farm.** The NRCS Field Office Technical Guide offers general recommendations and guidelines for cover crop types and uses.

Guidelines for Use of Cover Crops

The NRCS Cover Crop Termination Guidelines have been developed with the underlying principle that cover crops provide benefits and farmer flexibility while minimizing the risk to the primary insured crop. The guidelines provide additional information to the producer that may be unfamiliar with cover crops or are implementing innovative cover cropping systems and assurance that the crop is insured and cover cropping management decisions will be considered a good farming practice in accordance with the local NRCS office.

Refer to the **Good Farming Practice Determination Standards Handbook** for the Standards and Procedures for Administering Good Farming Practice Decisions and Determinations

The following options provide an additional assurance and program flexibility:

1. Use and follow the generalized zonal guidance provided in the **NRCS Field Office Technical Guide**.
2. Utilize materials from local extension service that are applicable for the crop and the area that support the cover crop management practice.
3. If either two of the options above do cover a specific cropping practice an exception can be requested by obtaining a written letter of support by an appropriate agricultural expert following the directions of the **Good Farming Practice Determination Standards Handbook**.

Keep in mind that if the guidelines are followed it will provide up-front assurance of coverage, BUT it is not required that they be followed to obtain crop insurance as per the changes in the 2018 Farm Bill.

However, if the claim is questioned by the insurance provider as to cover crop management, the insurance provider will complete research to adhere to procedure in order to make an initial decision if good farming practices were followed.

Termination Zones

Termination zones defined in the NRCS guidelines are divided into zones 1-4 in different areas of the country. Zonal guidance can help determine when cover crops should be terminated (before planting, at planting, or before emergence of the cash crop). Additionally, management factors should also play a role in cover crop termination.

Cover crops may be best terminated early in drier than normal conditions, or termination can be delayed in wetter than normal conditions or if no-till planting the cash crop.

For more information see the [**NRCS Cover Crop Termination Guidelines**](#). Consult with the local NRCS office for any local guidance.



Planting Into a Cover Crop

Once the cash crop is planted, insurance attaches to the crop. The grower must continue to follow all other provisions for that crop in order to remain in compliance. If two or more crops been planted in the acreage that does not permit separate production or harvest of the insured crop, the cash crop is not insurable. If two or more crops are planted in a manner that does permit separate agronomic maintenance or harvest of the insured crop, then the crop is insurable. As an example, if the cover is

seeded into a standing corn crop with a high clearance applicator and any resulting injury caused as a result, would not be covered.

Planting After a Covered Crop is Harvested

If a crop is planted and is harvested, either for grain or seed or forage, after the primary covered crop it is considered a second crop and not a cover crop. Therefore, all the rules for the first covered and second crop will apply.



We Support You Every Step of the Way

The agronomist team at ForGround by Bayer is here to help support you as you begin your journey into no-till and strip-till or look to modify your current practices to become more efficient with your inputs.

Resources:

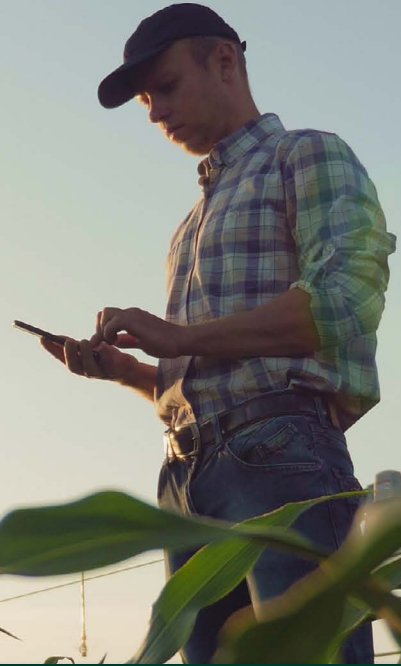
- Plant cover crops and insure your cash crops USDA.
<https://www.rma.usda.gov/-/media/RMA/Cover-Crops/202002-NRCSRMA-CoverCrop-Brochure-Letter.ashx?la=en>.
- Conservation practice standard cover crops USDA-NRCS.
https://efotg.sc.egov.usda.gov/api/CPSFile/1347/340_WI_CPS_Cover_Crop_2015_NRCS
- Cover crop termination guidelines USDA-NRCS.
https://efotg.sc.egov.usda.gov/api/CPSFile/1350/340_WI_GD_Cover_Crop_Termination_Guidelines_Guidelines_2019.

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