

Driven by nature. Backed by science.

TURF MANAGEMENT · ESTABLISHMENT

Establishment and Grow-in Foundation Program

Sprigging · Sodding · Seeding · Overseeding · Construction

Establishment is when a root zone is built. The Sigma Foundation Program puts fertility, organic acids and beneficial biology in the soil before planting, then feeds that biology with weekly liquids that ride with every grow-in spray.

- **Before planting:** Sigma 4-4-4 Bio at the high rate, 1,000 lb / acre, worked into the soil.
- **From planting day:** the Sigma Liquid Foundation at weekly rates, in the same tank as the planting-time fungicide or starter spray.
- **Through grow-in:** the interval stretches to 14 and then 21 days as the turf closes in.

Build your foundation today. Follow the science.

Stage by stage

Sigma Foundation Program for new turf

Each program starts with Sigma 4-4-4 Bio in the soil before planting, then the six-product Sigma Liquid Foundation rides with every grow-in spray. Liquid rates per acre (per 1,000 ft²): Bio, Molasses, Microalgae, Biochar 5m, Seaweed, K-Ferm.

Liquid rates. Bio + Molasses + Microalgae + Biochar 5m + Seaweed + K-Ferm. Seaweed and K-Ferm run at the low rate (22 oz / acre, 0.5 oz / 1,000 ft² per week) on weekly and 14-day sprays, and at the high rate (44 oz / acre per week) on 3-week intervals or in heat and drought stress. After grow-in, move to the Double Bio rotation: Sigma 0-2-13 Bio 2X every 45 days at 100–150 lb / acre.

Sprigging

Sod farms, golf and sports field grow-ins (bermudagrass, zoysiagrass). Biology and organic acids go into the soil before the sprigs do, then weekly liquids ride with every grow-in spray until the field closes in.

#	STAGE	SIGMA GRANULAR	SIGMA LIQUIDS	WITH YOUR PROGRAM
1	**Before planting** Field prepped, leveled and irrigated	Incorporate Sigma 4-4-4 Bio, high rate: 1,000 lb / acre (23 lb / 1,000 ft²) into the top 2–3 in.		Pre-plant weed control and soil test corrections per your program
2	**Planting day** Sprigs in the ground		Liquid Foundation, weekly rates: **Bio** 11 (0.25) **Molasses** 11 (0.25) **Microalgae** 22 (0.5) **Biochar 5m** 22 (0.5) **Seaweed** 22 (0.5) **K-Ferm** 22 (0.5) oz / acre (oz / 1,000 ft²)	Tank-mix with the planting-time fungicide or starter spray; water in within 36 hours
3	**Rooting** Weeks 1–6 after planting		Weekly, with each grow-in spray: **Bio** 11 (0.25) **Molasses** 11 (0.25) **Microalgae** 22 (0.5) **Biochar 5m** 22 (0.5) **Seaweed** 22 (0.5) **K-Ferm** 22 (0.5) oz / acre (oz / 1,000 ft²)	Prime early with short intervals while sprigs root
4	**Spread** Sprigs rooted and runners moving; first mowing	Then Sigma 12-2-6 Bio Bridge or 16-2-3 Bio Bridge: 250 lb / acre (5.7 lb / 1,000 ft²) every 45–60 days	Every 14 days: 2-week rates: **Bio** 22 (0.5) **Molasses** 22 (0.5) **Microalgae** 44 (1) **Biochar 5m** 44 (1) **Seaweed** 44 (1) **K-Ferm** 44 (1) oz / acre (oz / 1,000 ft²)	Rides with nutrient, fungicide and insecticide sprays
5	**Full cover** Field closed in	Maintenance: Sigma 4-4-4 Bio, low rate: 300 lb / acre (6.9 lb / 1,000 ft²) every 30–45 days with topdressing	Every 21 days: 21-day rates: **Bio** 33 **Molasses** 33 **Microalgae** 66 **Biochar 5m** 66 **Seaweed** 132 **K-Ferm** 132 oz / acre (oz / 1,000 ft²) Seaweed and K-Ferm at the high rate on 3-week intervals	Sod farms: harvest when tensile strength is on target, then follow the regeneration step

Measure: Days from planting to full cover; Rooting depth at fixed points; Runner density and stolon tensile strength; Fungicide applications during grow-in.

Sodding

New sod on golf, sports fields, lawns and landscapes. Prime the prepared soil under the sod, then get biology to the new roots while they knit down.

#	STAGE	SIGMA GRANULAR	SIGMA LIQUIDS	WITH YOUR PROGRAM
1	**Soil preparation** Before laying sod	Apply Sigma 4-4-4 Bio, high rate: 1,000 lb / acre (23 lb / 1,000 ft²) to the prepared soil		Soil test corrections per your program
2	**Installation** Day the sod goes down		Liquid Foundation, weekly rates: **Bio** 11 (0.25) **Molasses** 11 (0.25) **Microalgae** 22 (0.5) **Biochar 5m** 22 (0.5) **Seaweed** 22 (0.5) **K-Ferm** 22 (0.5) oz / acre (oz / 1,000 ft²)	Spray the installed sod and water in within 36 hours
3	**Knitting down** Weeks 1–4		Weekly: **Bio** 11 (0.25) **Molasses** 11 (0.25) **Microalgae** 22 (0.5) **Biochar 5m** 22 (0.5) **Seaweed** 22 (0.5) **K-Ferm** 22 (0.5) oz / acre (oz / 1,000 ft²)	Keep the sod and soil underneath moist
4	**Established** Sod rooted (cannot be lifted)	Maintenance: Sigma 4-4-4 Bio, low rate: 300 lb / acre (6.9 lb / 1,000 ft²) every 30–45 days	Every 14–21 days with scheduled sprays	Move into the regular calendar for that market

Measure: Days until sod cannot be lifted; Root depth into the native soil; Seam and edge recovery.

Seeding

New lawns, sports fields and renovations from seed. Put fertility and biology in the seedbed, then keep light liquid feedings going from germination through the first mowings.

#	STAGE	SIGMA GRANULAR	SIGMA LIQUIDS	WITH YOUR PROGRAM
1	**Seedbed preparation** Before seeding	Incorporate Sigma 4-4-4 Bio, high rate: 1,000 lb / acre (23 lb / 1,000 ft²) into the seedbed		Phosphorus rules: starter P is usually allowed at seeding; check your state
2	**Seeding** Seed down		Liquid Foundation, weekly rates: **Bio** 11 (0.25) **Molasses** 11 (0.25) **Microalgae** 22 (0.5) **Biochar 5m** 22 (0.5) **Seaweed** 22 (0.5) **K-Ferm** 22 (0.5) oz / acre (oz / 1,000 ft²)	Water in within 36 hours; keep the seedbed moist
3	**Germination to first mowing** Weeks 1–6		Weekly: **Bio** 11 (0.25) **Molasses** 11 (0.25) **Microalgae** 22 (0.5) **Biochar 5m** 22 (0.5) **Seaweed** 22 (0.5) **K-Ferm** 22 (0.5) oz / acre (oz / 1,000 ft²)	Light, frequent irrigation
4	**Young turf** After the first 2–3 mowings	Maintenance: Sigma 4-4-4 Bio, low rate: 300 lb / acre (6.9 lb / 1,000 ft²) every 30–45 days	Every 14 days: 2-week rates: **Bio** 22 (0.5) **Molasses** 22 (0.5) **Microalgae** 44 (1) **Biochar 5m** 44 (1) **Seaweed** 44 (1) **K-Ferm** 44 (1) oz / acre (oz / 1,000 ft²)	Move into the regular calendar

Measure: Days to germination; Plant density at 4 and 8 weeks; Days to first mowing.

Overseeding

Winter overseeding of bermudagrass greens, tees and fairways. Seed drop is an establishment event. Put biology down with the seed and add the liquids to every grow-in spray.

#	STAGE	SIGMA GRANULAR	SIGMA LIQUIDS	WITH YOUR PROGRAM
1	**Seed drop** Ryegrass or Poa trivialis going down	Sigma 4-4-4 Bio, low to medium rate: 300–545 lb / acre (6.9–12.5 lb / 1,000 ft²) with the seed		Topdress and drag in with the seed
2	**Germination** Weeks 1–3		Liquid Foundation, weekly rates: **Bio** 11 (0.25) **Molasses** 11 (0.25) **Microalgae** 22 (0.5) **Biochar 5m** 22 (0.5) **Seaweed** 22 (0.5) **K-Ferm** 22 (0.5) oz / acre (oz / 1,000 ft²)	Ride with the grow-in urea and iron sprays
3	**Grow-in** Ryegrass mowable		With each grow-in spray: weekly rate × weeks between sprays	Standard grow-in fertility per your program
4	**Winter** Overseed established	Per your winter fertility plan	Every 14–21 days with scheduled sprays	Follow the winter rows of your regional program

Measure: Days to playable surface; Overseed density; Spring transition quality.

Construction & renovation grow-in

New or rebuilt sand-based greens, tees and fields. A new sand root zone has little biology and little organic matter. Build both from day one.

#	STAGE	SIGMA GRANULAR	SIGMA LIQUIDS	WITH YOUR PROGRAM
1	**Root zone build** Root zone mixed and placed	Incorporate Sigma 4-4-4 Bio, high rate: 1,000 lb / acre (23 lb / 1,000 ft²) into the top 1–2 in. of the root zone		Sigma 4-3-2 Bio 2X (extra humate and the heavier 2X biology) is the alternative for sand root-zone rebuilding
2	**Planting** Seed, sprigs or sod		Liquid Foundation, weekly rates: **Bio** 11 (0.25) **Molasses** 11 (0.25) **Microalgae** 22 (0.5) **Biochar 5m** 22 (0.5) **Seaweed** 22 (0.5) **K-Ferm** 22 (0.5) oz / acre (oz / 1,000 ft²) Biochar 5m builds aggregation and water holding in sand	Water in within 36 hours
3	**Grow-in** Until full cover	Then Sigma 12-2-6 Bio Bridge or 16-2-3 Bio Bridge: 250 lb / acre (5.7 lb / 1,000 ft²) every 45–60 days	Weekly to every 14 days with grow-in sprays	On a nematicide program: apply Sigma 3 days after the nematicide
4	**Opening** Surface ready for play	Medium rate 545 lb / acre (12.5 lb / 1,000 ft²) at each aerification	Into the regular calendar for that surface	Move to the golf or sports turf calendar

Measure: Days to opening; Organic matter and root depth in the top 2 in.; Infiltration rate; Moisture uniformity.

Sigma Foundation Program products are not pesticides and do not replace fungicide, insecticide or nematicide programs; they ride in the same tank. Always jar test, confirm state registration, and read and follow label directions.