Seeding the World

For over 40 years, S&W Seed Company has provided the world’s farmers with the very best seed varieties and hybrids to maximize yields and profits. We are dedicated to breeding crops to withstand difficult growing conditions, including highly saline and drought-stricken regions of the world. With the world’s population continuing to increase and the availability of arable land decreasing, S&W Seed Company works with farmers and growers—and through both classical breeding and biotechnology initiatives—to offer the largest and most diverse platform of products and traits available today.

S&W provides expertise in agricultural breeding, production, and processing for the sorghum, alfalfa, and sunflower industries. Our companies include:

- Sorghum Partners®
- Alfalfa Partners®
- Sunflower Partners®

We are compelled to develop varieties that improve yields, not only on good soil conditions, but in some of the toughest soil regions in the world. We are committed to ensuring that our products are resistant to diseases and insects that pose farmers problems, while ensuring enhanced digestibility for livestock providers. And we are dedicated to developing crops that are resistant to certain herbicides allowing farmers to enhance their overall productivity.

We are S&W Seed Company.

Introducing New and Better Products Faster

Crop innovation begins with elite germplasm and over the past decade our expert team has been working diligently to expand our brands and offer new and innovative products.

In sorghum, we assembled a collection of more than 10,000 unique breeding lines, sourced from commercial, public, and wild collections, that now represents the most diverse collection of proprietary genetics in the industry. This unique germplasm was combined to create over 100,000 unique hybrid combinations, including industry leading hybrid grain, forage, food grade and sweet sorghum seed that is optimized for feed, food, and fuel markets. Our domestic testing program ranges from Texas to South Dakota and from California to the Carolinas. We combine that work with data collected from our international locations in Mexico, South America, Europe, Asia, Australia, and Africa to help us refine our new hybrid selections.

Our alfalfa breeders have developed the leading, university-verified, varieties available anywhere in the world. It takes many years to develop, test and produce alfalfa varieties, depending on the methodology or traits being developed. We stay abreast of current trends through innovative research and development. Since 2010, we have dramatically expanded both the acreage dedicated to alfalfa production and our R&D focus to include dormant and biotech varieties. Our state-of-the-art breeding facility at Nampa Idaho maintains performance trials in dormant growing areas all across North America. The vast majority of our alfalfa varieties have been approved through the National Alfalfa Variety Review Board of the Association of Official Seed Certifying Agencies (“AOSCA”), a requirement for certification and export to OECD countries.

S&W Seed Company has also expanded our sunflower program by advancing deployment on a global basis of a proprietary germplasm that exhibits high yield, high oil, disease resistance, and outstanding standability. The company has royalty-based sunflower licensing agreements with five global partners that are currently increasing commercial-scale production of the hybrid sunflower operations.

With our multiple nursery locations, molecular teams and world class greenhouses, we evaluate and advance new seed technologies year-round. This makes it possible for us to launch products rapidly in respond to industry needs.

Over the past few years, we have expanded our production and treatment capabilities and now export seed from multiple production facilities in the United States, Australia, South America, and Africa to over 40 countries around the world. We have the production capacity to ensure sufficient inventory to meet your needs. With these resources, S&W is uniquely positioned to respond to changes in the market and committed to deploying its facilities, capabilities, and team to deliver leading sorghum, alfalfa, and sunflower products to our industry.
Introducing Double Team® Technology

- DT™ Trait Sorghum Hybrids with non-GMO herbicide tolerant trait
- FirstAct® Herbicide for superior grass and weed control
- Most reliable and flexible solution with few rotational crop restrictions
- Two part technology enables superior yields and profitability

Part 1: DT Trait Sorghum Hybrids
Sorghum Partners’ Double Team hybrids come with S&W’s DT trait inside—a technology developed specifically to tolerate Quizalofop, the active ingredient in FirstAct herbicide. Our innovative, non-GMO, mutation-based lab techniques and rigorous testing programs have resulted in elite hybrids with the proven ability to undergo FirstAct applications, continue growing, and deliver unprecedented yields.

Part 2: FirstAct Herbicide
The FirstAct herbicide utilizes Adama’s proprietary formula for superior grass weed control. When applied to DT hybrids, growers get reliable, sorghum-safe, broad-spectrum control over Crabgrass, Volunteer Corn, Sanbar, Texas Millet, Panicum, Foxtail, Barnyard Grasses and a long list of others. Cleaner fields mean increased yields, and the kind of profits conventional methods just can’t match.

The Double Team Solution
Bringing these two powerhouse technologies together enables the Double Team Solution for improving sorghum profits in the U.S. This solution has few rotational crop restrictions while offering growers flexibility and crop selectivity. Double Team provides educational support and documentation from start to finish. We understand that each field is unique and promise ongoing technical support and services to address your individual needs.
DT Grain Sorghum

SP 24C20 DT
Very Early Maturity

SP 24C20 DT is a cream-grained, very early maturity hybrid with a high yield potential. This hybrid is ideally suited for environments with shorter growing seasons and for double crop following wheat or other early harvested crops.

- Tolerant to FirstAct™ Herbicide
- Over-the-top grass weed control
- High yield for maturity
- Good stalk quality
- Good drought tolerance
- Good option for late planting or double crop

SP 30A30 DT
Early Maturity

SP 30A30 DT is a bronze grain, early maturity hybrid with high yield potential. The hybrid is ideally suited for dryland acres in the Great Plains where higher soil pH maybe a problem. Can also be utilized as double crop in area with longer growing seasons.

- Tolerant to FirstAct™ Herbicide
- Over-the-top grass weed control
- High yield for maturity
- Excellent emergence
- Excellent for late planting or double crop
- Susceptible to growth regulator herbicides

SP 31C06 DT
Early Maturity

SP 31C06 DT is a cream-grained, early maturity hybrid with good drought tolerance and uniform appearance. Suitable for high pH soils, shorter growing seasons, and areas where double crop is planted following wheat or other early summer harvested crops.

- Tolerant to FirstAct™ herbicide
- Over-the-top grass weed control
- High yield for maturity
- Excellent drought tolerance
- Good for high pH soils
- Very uniform plant

SP 45A45 DT
Medium Early Maturity

SP 45A45 DT is a bronze grain, medium early maturity hybrid with high yield potential. This hybrid is ideally suited for dryland areas with higher rainfall or irrigated acres. Can also be utilized as a double crop in areas with longer growing seasons.

- Tolerant to FirstAct™ herbicide
- Over-the-top grass weed control
- High yield for maturity
- Excellent emergence
- Excellent standability
- Susceptible to growth regulator herbicides

SP 58M85 DT
Medium Maturity

SP 58M85 DT is a medium maturity hybrid with bronze grain and moderate SCA tolerance. This hybrid has high levels of Staygreen for improved stand-ability and excellent emergence in cool soils. An excellent choice throughout the Great Plains.

- Tolerant to FirstAct™ herbicide
- Over-the-top grass weed control
- High yield for maturity
- Moderately tolerant to SCA
- Staygreen for excellent standability
- Excellent emergence from cool soils

Left: A field of DT Sorghum
Right: Same field, days after the FirstAct application and the DT Sorghum is thriving
Industry Leading Grain Sorghum Traits

For our grain sorghum portfolio, we accessed elite germplasm from around the world to bring to market hybrids of superior field performance with key attributes such as maximum insect and disease resistance, grain quality, harvestability, and tolerances to extreme weather conditions such as drought. And we are committed to ongoing improvements.

Improved Standability

When sorghum experience drought or nitrogen stress during grain fill, the plant can respond by remobilizing stored carbohydrates from the stem to finish grain fill. This process can weaken the stalk and make the plant more susceptible to stalk rots. Our STIFF Stalk trait improves standability by increasing the thickness of the stalk rind, giving it more structural strength, which can be important if the plant is infested with a stalk rot. Our Staygreen trait allows the plant to maintain green leaves under stress so that the plant can continue to produce carbohydrates through photosynthesis and reduce remobilization of carbohydrates from the stem.

Protection from Sugarcane Aphids

Our industry-leading SCA Tolerant trait offers a range of protection from sugarcane aphids. Look for this SCA tolerance key on each hybrid:

White and yellow sugarcane aphids can be further managed by implementing a comprehensive Integrated Pest Management (IPM) program. An IPM program is a strategy that combines the use of multiple pest control tactics to maximize your operation’s economic returns. Contact us for details.
Grain Sorghum

SP 25C10
Very Early Maturity
SP 25C10 is an early hybrid with cream-colored grain on a purple plant. This hybrid is very well adapted to the Northern Plains and late planted double crop systems in the Great Plains. SP 25C10 is well suited for late disaster plantings following failed cotton acres as late as mid-July. Very good drought tolerance and intermediate Staygreen along with very good stalk quality, along with strong drought stress tolerance. Its very good drought tolerance, above average stalk quality, along with strong stalk establishment and seedling vigor provide a very consistent, stable performance. 

- Very good yield for early maturity
- Very good stalk quality
- Very good option for late double cropped cotton or disaster plantings
- Very good drought tolerance
- Recommended 15 inch row or narrower

SP 31A15
Early Maturity
SP 31A15 is a bronze early maturity grain sorghum with very good yield potential for maturity, strong emergence and seedling vigor. This hybrid adapts very well to shorter growing season environments, late plantings, and double crop scenarios. Its very good drought tolerance, above average stalk quality, along with strong stalk establishment and seedling vigor provide a very consistent, stable performance. 

- Very good yield for early maturity
- Very good drought tolerance and intermediate Staygreen
- Excellent option for double crop, late plantings, or shorter growing seasons
- Strong emergence and seedling vigor
- Sensitive to high yielding hybrids
- Consistent, stable performance

SP 3303
Early-Maturity
SP 3303 is a medium-early hybrid with cream colored good grade grain on a tan plant. This hybrid has high yield potential. It is very uniform, has excellent standability, threshability, and drought tolerance. This hybrid performs well in late-planted double crop systems and can produce grain with very little emergence and seedling vigor. 

- Excellent drought tolerance
- Copes with heat very well
- Excellent standability
- Excellent yield for maturity
- Good eye appeal and uniformity
- Cream colored, food grade

SP 43MB0
Medium-Early Maturity
SP 43MB0 is a medium-early maturity grain hybrid with high SCA tolerance and excellent appearance. Its semi-open head and light bronze grain result in stunning overall field appeal. SP 43MB0 has stiff stalk and staygreen to provide excellent standability and drought stress tolerance. This hybrid is well adapted for dryland fields in Great Plains with excellent yield potential. 

- Yield for Maturity
- High Sugar cane Aphid tolerance
- Excellent drought tolerance
- Excellent panicle exertion under drought
- Semi-Open head with great uniformity

SP 68M57
Medium-Full Maturity
SP 68M57 is a medium maturity hybrid with intermediate stay green and resistance to downy mildew pathotypes 1, 3, and 6. SP 68M57 has stiff stalk and Staygreen to provide excellent standability and drought stress tolerance. This hybrid is well adapted for dryland fields in Great Plains with excellent yield potential. 

- High yielding medium to medium-full hybrid
- Well-suited for South Texas through the Plains
- Bronze grain, excellent appearance
- Excellent anthracnose tolerance
- Resistant to downy mildew pathotypes 1, 3, and 6
- Widely adapted

SP 72M42
Medium-Full Maturity
SP 72M42 is a medium-full maturity hybrid with light bronze grain and a semi-compact head. High sugar cane aphid tolerance makes it an excellent hybrid for the higher yielding environments in the Great Plains. Stiff Stalk, excellent head exertion, and Staygreen mean excellent drought stress tolerance. 

- Highly tolerant to SCA
- Excellent standability
- Excellent drought stress tolerance
- Unique adapted to the Great Plains irrigated and favorable drought stress tolerant

SP 74M21
Medium-Full Maturity
SP 74M21 is a medium-full maturity hybrid with light bronze grain and a semi-compact head. High sugar cane aphid tolerance makes it an excellent hybrid for the higher yielding environments in the Great Plains. Stiff Stalk, excellent head exertion, and Staygreen mean excellent drought stress tolerance. 

- Very high yield potential
- Very good standability
- Excellent anthracnose tolerance
- Good general leaf disease resistance
- Very good threshability
- Resistant to greenbug biotype C & D
Forage Sorghum Silage

Silage Hybrids Decision Tree

**Brachytic Dwarf (BD) Trait**
- Shorter plant internodes
- Reduced plant height and lodging, while maintaining yield potential

**Brown Mid-Rib (BMR) Trait**
- BMR is a genetic trait that lowers lignin content in plants
- Lower lignin content increases plant digestibility
- Higher digestibility leads to higher higher feeding efficiency and less manure

<table>
<thead>
<tr>
<th>Variety</th>
<th>Relative Maturity</th>
<th>Seeds Per Pound</th>
<th>Relative Height</th>
<th>BMR</th>
<th>Silage Harvest Maturity</th>
<th>Yield (Tonnage)</th>
<th>Photo Sensitive (Headless)</th>
<th>Early Growth Rate</th>
<th>Leafiness</th>
<th>Standability</th>
<th>Drought Tolerance</th>
<th>stalk Sweetness</th>
<th>% of Grain in Forage</th>
<th>Anthracnose Tolerance</th>
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<tr>
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<td>8-9'</td>
<td>Yes</td>
<td>100</td>
<td>2 No 3 4 5 10-15%</td>
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<tr>
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<td>6'</td>
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<td>110-115</td>
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<td>NK300</td>
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<td>No</td>
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<td>3 No 2 3 3 5 15-20%</td>
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<td>Medium Fall</td>
<td>21,000</td>
<td>10-12'</td>
<td>No</td>
<td>115-120</td>
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<td>SS405</td>
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<td>8-10'</td>
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<td>85-105</td>
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<td>10-12'</td>
<td>No</td>
<td>125-130</td>
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</table>

**Notes:**
(1) Dough Stage from Emergence
(2) Numerical Rating: 1 to 9 (1=Excellent, 5=Average, 9=Poor)
(3) U=Undetermined, N/A=Not Applicable
(4) Seeds per pound may vary due to environmental influences during the production process.

Relative Maturity:
- Dough Stage from Emergence
- Numerical Rating: 1 to 9 (1=Excellent, 5=Average, 9=Poor)
- U=Undetermined, N/A=Not Applicable
- Seeds per pound may vary due to environmental influences during the production process.
Forage Sorghum Silage

**SP1727 BMR**
Medium Maturity

SP1727 BMR is a brown mid-rib forage hybrid with superior forage qualities and tonnage over other BMR products when properly managed. Its male sterile trait will keep more nutrients in the stalk by not setting seed, making it a great choice for grazing. This hybrid is an excellent fit for dairies and can be placed throughout the U.S.

- Brown mid-rib, brachytic dwarf
- Male sterile keeps nutrients in the stalk
- Superior digestibility
- Excellent grazing potential
- 110 to 120 days to silage
- Good drought tolerance

**SP2774 BMR**
Medium-Early Maturity

SP2774 is a brown mid-rib silage hybrid with good yields across several geographies, particularly in the Great Plains and Midwest. It matures in approximately 95-100 days. It is best positioned west of the Mississippi River, since susceptibility to grey leaf spot has been observed in the Southeast. It may be used causally in the East when considering anthracnose.

- Strong yields in the Great Plains and Midwest
- Best positioning west of the Mississippi River
- 100 days to maturity
- Brown mid-rib (BMR) trait
- 7-8' tall at maturity

**SP3904 BD BMR**
Full Maturity

SP3904 BD BMR is a brown mid-rib, brachytic dwarf forage hybrid (BMR) selected for producing high quality silage. SP3904 BD BMR will reach soft dough in approximately 110 days and will produce high levels of starch, which contributes to silage digestibility and energy levels. The brachytic dwarf trait reduces plant height and improves standability while maintaining leafiness. This hybrid is an excellent fit for dairies and can be placed throughout the U.S.

- Brown mid-rib, brachytic dwarf
- Harvest in 85-95 days after emergence
- Excellent for silage
- Double crop silage option
- Earliest Brachytic Dwarf on the market
- Works well North of I-70
- Good drought tolerance

**SP3905 BD BMR**
Early Maturity

SP3905 BD BMR is an early maturing brown mid-rib, brachytic dwarf forage hybrid that will produce excellent silage because of its low lignin content and high grain content. It is the earliest BMR-Brachytic Dwarf Hybrid on the market and works best north of 100. It handles humidity and anthracnose very well. It produces more tillers than most hybrids, which will increase yields and cover the ground quickly.

- Brown mid-rib, brachytic dwarf
- Harvest in 85-95 days after emergence
- Excellent for silage
- Double crop silage option
- Low lignin content; excellent palatability
- Works well North of I-70
- Good drought tolerance

**SP3906 BD BMR**
Medium-Early Maturity

SP3906 BD BMR is an early maturing brown mid-rib, brachytic dwarf forage hybrid that will produce excellent silage because of its low lignin content and high grain content. It is the earliest BMR-Brachytic Dwarf Hybrid on the market and works best north of 100. It handles humidity and anthracnose very well. It produces more tillers than most hybrids, which will increase yields and cover the ground quickly.

- Brown mid-rib, brachytic dwarf
- Harvest in 85-95 days after emergence
- Excellent for silage
- Double crop silage option
- Low lignin content; excellent palatability
- Works well North of I-70
- Good drought tolerance

**SP3907 BD BMR**
Early Maturity

SP3907 BD BMR is an early maturing brown mid-rib, brachytic dwarf forage hybrid that will produce excellent silage because of its low lignin content and high grain content. It is the earliest BMR-Brachytic Dwarf Hybrid on the market and works best north of 100. It handles humidity and anthracnose very well. It produces more tillers than most hybrids, which will increase yields and cover the ground quickly.

- Brown mid-rib, brachytic dwarf
- Harvest in 85-95 days after emergence
- Excellent for silage
- Double crop silage option
- Low lignin content; excellent palatability
- Works well North of I-70
- Good drought tolerance

**SP3908 BD BMR**
Medium-Early Maturity

SP3908 BD BMR is a brown mid-rib, brachytic dwarf forage hybrid that will produce excellent silage because of its low lignin content and high grain content. It is the earliest BMR-Brachytic Dwarf Hybrid on the market and works best north of 100. It handles humidity and anthracnose very well. It produces more tillers than most hybrids, which will increase yields and cover the ground quickly.

- Brown mid-rib, brachytic dwarf
- Harvest in 85-95 days after emergence
- Excellent for silage
- Double crop silage option
- Low lignin content; excellent palatability
- Works well North of I-70
- Good drought tolerance

**SP3909 BD BMR**
Early Maturity

SP3909 BD BMR is an early maturing brown mid-rib, brachytic dwarf forage hybrid that will produce excellent silage because of its low lignin content and high grain content. It is the earliest BMR-Brachytic Dwarf Hybrid on the market and works best north of 100. It handles humidity and anthracnose very well. It produces more tillers than most hybrids, which will increase yields and cover the ground quickly.

- Brown mid-rib, brachytic dwarf
- Harvest in 85-95 days after emergence
- Excellent for silage
- Double crop silage option
- Low lignin content; excellent palatability
- Works well North of I-70
- Good drought tolerance

**SP4000 BD BMR**
Full Maturity

SP4000 BD BMR is a medium late maturing hybrid with good yields across several geographies, particularly in the Great Plains and Midwest. It matures in approximately 110 to 115 days. It is best positioned east of I-70, and can be placed throughout the U.S. and can be placed throughout the U.S.

- Strong yields in the Great Plains and Midwest
- Best positioning east of I-70, and can be placed throughout the U.S.
- Medium Maturity
- Work well South of I-70
- Good drought tolerance

**SP4001 BD BMR**
Early Maturity

SP4001 BD BMR is a medium late maturing hybrid with good yields across several geographies, particularly in the Great Plains and Midwest. It matures in approximately 110 to 115 days. It is best positioned east of I-70, and can be placed throughout the U.S. and can be placed throughout the U.S.

- Strong yields in the Great Plains and Midwest
- Best positioning east of I-70, and can be placed throughout the U.S.
- Medium Maturity
- Work well South of I-70
- Good drought tolerance

**SP4002 BD BMR**
Medium-Early Maturity

SP4002 BD BMR is a medium late maturing hybrid with good yields across several geographies, particularly in the Great Plains and Midwest. It matures in approximately 110 to 115 days. It is best positioned east of I-70, and can be placed throughout the U.S. and can be placed throughout the U.S.

- Strong yields in the Great Plains and Midwest
- Best positioning east of I-70, and can be placed throughout the U.S.
- Medium Maturity
- Work well South of I-70
- Good drought tolerance

**SS174 BMR**
Medium Maturity

SS174 BMR is a medium late maturing hybrid with good yields across several geographies, particularly in the Great Plains and Midwest. It matures in approximately 110 to 115 days. It is best positioned east of I-70, and can be placed throughout the U.S. and can be placed throughout the U.S.

- Strong yields in the Great Plains and Midwest
- Best positioning east of I-70, and can be placed throughout the U.S.
- Medium Maturity
- Work well South of I-70
- Good drought tolerance

**SS204 BMR**
Medium-Early Maturity

SS204 BMR is a medium late maturing hybrid with good yields across several geographies, particularly in the Great Plains and Midwest. It matures in approximately 110 to 115 days. It is best positioned east of I-70, and can be placed throughout the U.S. and can be placed throughout the U.S.

- Strong yields in the Great Plains and Midwest
- Best positioning east of I-70, and can be placed throughout the U.S.
- Medium Maturity
- Work well South of I-70
- Good drought tolerance

**SS304 BMR**
Medium-Full Maturity

SS304 is a medium maturing, tall silage hybrid with high tonnage yield performance. Due to a high sugar content, stalks are very sweet and juicy. It is adapted for all but the shorter, cooler growing seasons in the Northern Great Plains and at higher elevations. In its northern area of use, it may not produce a head. Plant height reaches 10 to over 12 feet with very good standability. The stalk is very well adapted for bio-mass ethanol production.

- High Anthracnose tolerance
- High tonnage
- Sweet, juicy stalks
- High sugar content
- 10-12 tall
- Good standability
- Good drought tolerance

**SS405**
Late Maturing, Tall Silage

SS405 is a late maturing, tall silage hybrid with high tonnage yield performance. Due to a high sugar content, stalks are very sweet and juicy. It is adapted for all but the shorter, cooler growing seasons in the Northern Great Plains and at higher elevations. In its northern area of use, it may not produce a head. Plant height reaches 10 to over 12 feet with very good standability. The stalk is very well adapted for bio-mass ethanol production.

- High tonnage
- Sweet, juicy stalks
- High sugar content
- 10-12 tall
- Good standability
- Good drought tolerance
Forage Sorghum Hay & Grazing Hybrids Decision Tree

Brown Mid-Rib (BMR) Trait
- BMR is a genetic trait that lowers lignin content in plants
- Lower lignin content increases plant digestibility
- Higher digestibility leads to higher higher feeding efficiency and less manure

Brown Mid-Rib (BMR) Trait
- BMR is a genetic trait that lowers lignin content in plants
- Lower lignin content increases plant digestibility
- Higher digestibility leads to higher feeding efficiency and less manure

Sorghum X Sudan
- Sordan 79
- Sordan Headless
- SP4105
- SP4555
- SP7106

Sudangrass
- Trudan 8
- Trudan Headless
- SP7106
- SP4555
- Sordan Headless
- Sordan 79

BMR
- N/A
- N/A
- N/A
- N/A
- N/A

CONVENTIONAL
- N/A
- N/A
- N/A
- N/A
- N/A

Forage Sorghum Hay & Grazing Product Ratings

Seeds per pound may vary due to environmental influences during the production process.
Ratings and descriptions are based on research and field observations collected from multiple locations over multiple years. They represent comparisons with Company products only.

Dough Stage from Emergence Numerical Rating: 1 to 9 (1=Excellent, 5=Average, 9=Poor)
U=Undetermined, N/A=Not Applicable

Deviation from normal planting dates, cultural practiced and growing conditions may affect performance and cause variation in these characteristics.

Forage Sorghum Hay & Grazing Product Ratings

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Seeds per Pound</th>
<th>Relative Maturity</th>
<th>Relative Height</th>
<th>BMR</th>
<th>Silage Harvest Maturity</th>
<th>Yield (Tonnage)</th>
<th>Photo Sensitive</th>
<th>Early Growth Rate</th>
<th>Leafiness</th>
<th>Standability</th>
<th>Drought Tolerance</th>
<th>Stalk Sweetness</th>
<th>% of Grain in Forage</th>
<th>Anthracnose Tolerance</th>
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</table>

(1) Dough Stage from Emergence
(2) Numerical Rating: 1 to 9 (1=Excellent, 5=Average, 9=Poor)
(3) U=Undetermined, N/A=Not Applicable
(4) Seeds per pound may vary due to environmental influences during the production process.

Forage Sorghum Hay & Grazing Product Ratings

Seeds per pound may vary due to environmental influences during the production process.
Ratings and descriptions are based on research and field observations collected from multiple locations over multiple years. They represent comparisons with Company products only.

Dough Stage from Emergence Numerical Rating: 1 to 9 (1=Excellent, 5=Average, 9=Poor)
U=Undetermined, N/A=Not Applicable

Deviation from normal planting dates, cultural practiced and growing conditions may affect performance and cause variation in these characteristics.

Forage Sorghum Hay & Grazing Product Ratings

<table>
<thead>
<tr>
<th>Hybrid</th>
<th>Seeds per Pound</th>
<th>Relative Maturity</th>
<th>Relative Height</th>
<th>BMR</th>
<th>Silage Harvest Maturity</th>
<th>Yield (Tonnage)</th>
<th>Photo Sensitive</th>
<th>Early Growth Rate</th>
<th>Leafiness</th>
<th>Standability</th>
<th>Drought Tolerance</th>
<th>Stalk Sweetness</th>
<th>% of Grain in Forage</th>
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Forage Sorghum Hay & Grazing

SP4105 BMR
Sorg x Sudangrass PPS

SP4105 will not head under most conditions. It contains the highest value in the leaves and stem until it is chopped or grazed thus extending the harvest time frame. SP4105 is a versatile sorg x sudangrass meeting most summer forage needs and produces high quality forage for fast weight gain and/or increased milk production. It has a good leaf-to-stem ratio and is best used for hay, haylage and green chop.

- Photoperiod sensitive (headless)
- Good late summer plant
- Can be grazed
- Good yield potential (dry hay, haylage, and pasture)
- High leaf to stem ratio
- Excellent quality summer forage
- apt tolerant
- Dual purpose: silage or hay

SP4555 BMR
Sorg x Sudangrass

This versatile brown mid-rib, sorg x sudangrass can meet most summer forage needs. It is well suited for use as an emergency feed. SP4555 is best used for hay, haylage and greenchop. Other uses include grazing and ground cover. SP4555 has a good leaf-to-stem ratio that helps provide good quality with proper management.

- Photoperiod sensitive (headless) and BMR
- Dual purpose: silage or hay
- Extended harvest window
- Best for hay, haylage, green chop
- Good leaf-to-stem ratio
- Provides good forage quality
- Excellent regrowth after harvest or grazing

Sordan 79
Sorg x Sudangrass

Sordan 79 is a versatile hybrid sorg x sudangrass that can meet most summer forage needs. It is well suited for use as an emergency feed. This hybrid is best used for hay, haylage and greenchop. Other uses include grazing and ground cover. Sordan 79 has a good leaf-to-stem ratio that helps provide good quality with proper management.

- Dependable summer forage with BMR
- Can be grazed
- Good for late summer planting
- Good for hay, haylage, and greenchop
- Good forage quality
- Can be used in rotation to reduce nematode populations

Sordan Headless
Sorg x Sudangrass

Sordan Headless can expand the window for usage because it will not head under most conditions. Sordan Headless continues to grow and maintain its nutrient value in the leaves and stem until it is chopped or grazed. It is well suited for use as an emergency feed. This hybrid has very fine stems and a high leaf-to-stem ratio and produces high quality hay or haylage.

- Photoperiod sensitive (headless) BMR
- Dual purpose: silage or hay
- High leaf to stem ratio
- Excellent quality summer forage
- Good for late summer plant
- Can be grazed
- Good leaf-to-stem ratio
- Good for alkaline soils (salt tolerant)
- Can be used in rotation to reduce nematode populations

SP7106 BMR
Sudangrass

SP7106 is a widely adapted BMR sudangrass hybrid. Because it is Photoperiod sensitive it will not head under most conditions providing great harvest flexibility. SP 7106 can tolerate high cutting frequencies as well as being well adapted to intensive grazing. This hybrid has very fine stems and a high leaf-to-stem ratio and produces high quality hay or haylage.

- Photoperiod sensitive (headless) BMR
- Dual purpose: silage or hay
- High leaf to stem ratio
- Quick regrowth for multiple cuts
- Suitable for grazing, haylage, or dry hay

Trudan 8
Sudangrass

Trudan 8 is an exceptional hybrid for most summer forage needs. It is best for hay, haylage and grazing, greenchop and cover. Very leafy and stunted. Fast regrowth after cutting or grazing. It adapts well and tolerates high cutting frequencies and intensive grazing with proper management. Produces exceptional forage quality, that is high in protein and TDN (total digestible nutrients). Prussic acid potential is low.

- Photoperiod sensitive (headless)
- Dual purpose: silage or hay
- Very high leaf to stem ratio
- Excellent summer forage
- Good for hay, haylage, and greenchop
- Extended harvest window
- Best for hay, haylage, and grazing
- Tolerates high cutting frequencies
- Adapts well to intensive grazing

Millex 32
Pearl Millet

Millex 32 is a hybrid pearl millet that produces high quality forage that is lush and can be used for hay and greenchop. It adapts well to intensive grazing and can also be used for hay and greenchop. Millex 32 is a great horse feed as a result of its commonly low prussic acid content.

Forages:Sorghum Hay & Grazing
Our future alfalfa varieties will soon include IQA™, a reduced lignin alfalfa quality trait, achieved through gene editing. It’s integrated into elite alfalfa germplasm for both yield and improved forage quality performance.

Growers may have the flexibility to harvest later on without the typical rate of reduction in forage quality that occurs with conventional varieties, or they can cut on their normal schedule to potentially capture higher RFQ and lower lignin alfalfa. This can offer an extended harvest window with improved forage quality. Please consult with Alfalfa Partners for availability in your region and whether your specific growing environment may be sensitive to a gene-edited trait.

Our Germplasm Improvement Program Delivers
• Outstanding root rot tolerance for areas with variable soils
• High yielding varieties with emphasis on disease and pest resistance
• Increased emphasis on forage quality improvement
• Salt tolerant varieties spanning FD4 through 9 with proven performance
• A strong brand with proven performance in both saline and non-saline soils
• Dormant and non-dormant breeding programs with a lifetime of germplasm improvement
• Dedicated seed production locations in the US and Australia

Our dormant alfalfa breeding program involves screening, crossing, and classification for each new variety. In each phase, teams in Nampa, Idaho and Keith, South Australia are busy year-round in the field or greenhouse settings. A typical variety can take 5 to 18 years to produce, depending on the methodology or traits being developed.

We conduct extensive testing across numerous environments for yield, forage quality, yield stability across environments, dormancy, tolerance to lodging, and regrowth from cutting. We also test up to 18 types of pest resistance, such as Phytophthora root rot, Aphanomyces root rot, and Stem nematode. Each of our commercial varieties has been developed through this same process of germplasm improvement, characterization for agronomic and pest ratings, yield, and winter hardiness—for the highest productivity in your fields.

Our Team is Focused Solely on Alfalfa
Our team is comprised of seasoned alfalfa experts with decades of experience. We are dedicated to your success and available to help in any way we can. We continue to stay abreast of important trends, helping farmers combat today’s farming challenges and supplying superior seed for alfalfa hay, the “queen of forages,” all the while keeping an eye on sustainable solutions for tomorrow. As a customer, you will have access to experts who can answer questions on our products, crop management, agronomy, sales, and service.

S&W’s Alfalfa Partners

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• Outstanding root rot tolerance for areas with variable soils
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• Increased emphasis on forage quality improvement
• Salt tolerant varieties spanning FD4 through 9 with proven performance
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We are S&W’s Alfalfa Partners

Alfalfa Partners® Since 1980 S&W Seed Company has bred alfalfa seed of the highest quality with superior genetic traits. With the unique ability to grow in challenging soil conditions and generate outstanding crop yield, S&W quickly becoming an industry leader. Our specialty is high-yield alfalfa varieties focused on maximizing profit per acre for the farmer, regardless of soil and water salinity. Starting in 2010, we dramatically expanded the acreage dedicated to alfalfa production and our R&D focus to include dormant and biotech varieties. Our breeding and product development emphasizes high yield, forage quality improvement, persistence, and disease and pest resistance.

In 2012, S&W acquired Imperial Valley Seed to expand production in this rich California growing region and in 2013, Seed Genetics International (SGI) was acquired, further expanding production capabilities into Australia.

In late 2014, we acquired Pioneer’s alfalfa breeding program and conventional alfalfa germplasm—providing a strong germplasm base that goes all the way back to 1958.

All along our mission has been to help cattle and dairymen produce the best alfalfa hay for their herds. So, in 2019 we branded our product line as Alfalfa Partners, to embody the essence of our mission and our accomplishments over the last 40 years.

Our Germplasm Improvement Program Delivers
• Outstanding root rot tolerance for areas with variable soils
• High yielding varieties with emphasis on disease and pest resistance
• Increased emphasis on forage quality improvement
• Salt tolerant varieties spanning FD4 through 9 with proven performance
• A strong brand with proven performance in both saline and non-saline soils
• Dormant and non-dormant breeding programs with a lifetime of germplasm improvement
• Dedicated seed production locations in the US and Australia

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We are S&W’s Alfalfa Partners

IQA™, the Next Innovation
Our future alfalfa varieties will soon include IQA™, a reduced lignin alfalfa quality trait, achieved through gene editing. It’s integrated into elite alfalfa germplasm for both yield and improved forage quality performance. Growers may have the flexibility to harvest later on without the typical rate of reduction in forage quality that occurs with conventional varieties, or they can cut on their normal schedule to potentially capture higher RFQ and lower lignin alfalfa. This can offer an extended harvest window with improved forage quality. Please consult with Alfalfa Partners for availability in your region and whether your specific growing environment may be sensitive to a gene-edited trait.
## Dormant Alfalfa Pest and Disease Resistance

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<th>Fall Dormancy</th>
<th>Yield</th>
<th>Winter Survival</th>
<th>Pest &amp; Disease Resistance</th>
<th>Pasture &amp; Disease Resistance</th>
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<td>Light Winter Hardy</td>
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### Rugged Rancher

**Fall Dormancy 3**

Rugged Rancher alfalfa has excellent persistence under a wide range of growing conditions and environments. It is a great choice for rotational grazing or hay production due to its dependable yield and relative feed quality.

- Excellent persistence under a wide range of growing conditions and environments
- Great choice for rotational grazing or hay production
- Dependable yield and relative feed quality
- Includes branch-rotting alfalfa for its ability to persist
- Extremely winter hardy
- Resistant to many major pests and diseases
- Good overall choice for fields with variable soils

### SW3407

**Fall Dormancy 3**

This high yielding FD3 produces excellent quality forage. Good standability and an excellent disease rating index (DRI). SW3407 parents were selected based on half-sib yield performance evaluations to determine breeding value. Half-sib clones were evaluated for forage quality and persistence over a period of years following inoculation with main alfalfa disease organisms.

- Suitable for wet soils because of its exceptional resistance to both races of Aphanomyces root rot
- Consistent top yields of dairy quality hay
- Excellent forage quality combined with good lodging tolerance for overall yield, cutability, and quality
- Water tolerant FD3 variety with consistent high yield often near the top of yield trials with later dormancy four varieties

### SW4107

**Fall Dormancy 4**

This new lodging resistant variety has strong agronomic character and excellent disease resistance. This high forage quality variety produces consistently high yields. Lodging resistance can make harvest much easier and help maintain harvestable yield.

- Lodging resistant characteristic can reduce or avoid lodging from high wind and rain, manure application, and delayed harvest
- Above average forage quality suitable for dairy quality hay and haylage
- Strong disease resistance to all major pathogens
- Very winter hardy — great all-round variety wherever a medium full dormancy is desired
- Yield advantage when lodging occurs can be 1½-3½ tons/acres.

### SW4425

**Fall Dormancy 4**

This new lodging resistant variety has strong agronomic character and excellent disease resistance. This high forage quality variety produces consistently high yields. Lodging resistance can make harvest much easier and helps maintain harvestable yield.

- Extremely winter hardy
- Highly resistant against stem nematode, important in irrigated production when the water source can be a concern
- Resistant to seven major pests
- Excellent forage quality
- Top group placement in many university yield trials
- Highly resistant to 7 major pests
- Well suited to fields with variable drainage where root rot resistance is needed
- Consistently performs above average to produce good quality forage
- Good choice where medium full dormancy is desired along with good winter hardiness
- Bred using traditional plant breeding methods
- Varieties are medium fast recovery type that can be highly resistant to most major diseases and well suited throughout US growing areas where F43 is desired
**Non-Dormant Alfalfa**

**Dormant Alfalfa**

**SW5213**

Fall Dormancy 5

SW5213 is a high-yielding variety, with consistent performance and can be adapted to every region due to a FD8 variety needed for consistent high yield. SW5213 is a highly resistant rating against nine major alfalfa pests and diseases.

- Broadly adapted late fall dormancy helps maintain late summer yield
- Highly resistant to nine major pests and diseases
- High resistance to stem nematodes – can be important in irrigated situations where water source includes tail waters from infested upstream fields
- Well suited for soils with variable drainage due to listening root rot resistance to Phytophthora and multi-race Aphanomyces
- Excellent overall root rot resistance contributes to persistence
- High yield potential to rival elite conventional varieties
- Works well for organic production
- Excellent pest resistance for most North American environments
- Highly suitable to all areas where leekhoppers can be a significant pest
- Excellent winter hardiness
- Very suitable for 3-5 high yield soils of quality hay production
- Highly suitable to heavy soils where root rots are a concern
- Best overall control of potato leekhoppers in alfalfa
- For grower who don't wish to consistently scout for leekhoppers or apply timed pesticides for control

**SW525LH™ Brand**

Fall Dormancy 5

**SW525LH™ Brand** is a leekhopper resistant, high yield variety with excellent pest resistance: high resistance to potato leekhopper, Phytophthora, and multi-race Aphanomyces. An excellent choice for the Midwest, Plains and North-east where leekhoppers can be a pernicious pest on a yearly basis.

- **SW515** is highly resistant to nine major alfalfa pests and diseases
- **SW9813S** is our new salt tolerant non-dormant variety with high yield potential in both saline and non-saline soil conditions. This variety’s high resistance to aphids contributes to its strong forage production abilities.

**SW5615 new**

Fall Dormancy 5

SW5615 is a very high yield, fall dormancy 5 variety with a strong performance record in research trials across a wide area. The combination of excellent winter survival index and strong disease resistance gives SW5615 a leg up on stand persistence.

- **SW515** is highly resistant to nine major alfalfa pests and diseases
- **SW5615** is an excellent replacement for Pioneer 5510 with increased yield potential, forage quality and stand persistence
- **SW9813S** is our new salt tolerant non-dormant variety with high yield potential in both saline and non-saline soil conditions. This variety’s high resistance to aphids contributes to its strong forage production abilities.

**SW8421S**

Fall Dormancy 8

SW8421S is a non-dormant FD8 variety that produces high yields of high quality hay. Bred under very saline conditions, it has the ability to maintain much of its high yield potential even in saline production situations. It is a strong choice for fields with saline build-up.

- **SW8421S** is a non-dormant FD8 variety that produces high yields of high quality hay. Bred under very saline conditions, it has the ability to maintain much of its high yield potential even in saline production situations. It is a strong choice for fields with saline build-up.

**SW9720**

Fall Dormancy 9

This FD9 variety has a very wide area of adaptation with above average forage quality and is tolerant to salinity irrigation waters and saline soils.

- **SW9720** is a new variety that produces high yields of high quality hay in a wide range of environments.
- **SW9720** is our new salt tolerant non-dormant variety with high yield potential in both saline and non-saline soil conditions. This variety’s high resistance to aphids contributes to its strong forage production abilities.

**SW9813S**

Fall Dormancy 9

SW9813S is our new salt tolerant non-dormant variety with high yield potential in both saline and non-saline soil conditions. This variety’s high resistance to aphids contributes to its strong forage production abilities.

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**Pest and Disease Resistance**

- **Non-Dormant Alfalfa**
  - **SW5213**
    - Pest and Disease Resistance
  - **SW5615 new**
    - Pest and Disease Resistance
  - **SW8421S**
    - Pest and Disease Resistance
  - **SW9720**
    - Pest and Disease Resistance
  - **SW9813S**
    - Pest and Disease Resistance

**8 R HR HR R HR R R ST**

**9 9 R MR R HR HR R MR HR ST**

**9 R R R HR R HR R**

**10 9 R MR R HR HR HR R**

**Yield**

- **SW5213**
  - 1-855-767-4486 ALFALFAPARTNERS.COM
- **SW8421S**
  - 1-855-767-4486 ALFALFAPARTNERS.COM

**Fall Dormancy 5**

1-855-767-4486 ALFALFAPARTNERS.COM

**Fall Dormancy 8**

1-855-767-4486 ALFALFAPARTNERS.COM

**Fall Dormancy 9**

1-855-767-4486 ALFALFAPARTNERS.COM
**Sunflower Partners**

S&W Seed Company acquired the operations of SV Genetics’ (‘SVG’) sunflower program in May 2016 with a goal of expanding global access to unique proprietary germplasm that exhibits high yield, high oil content, disease resistance, and outstanding standability.

We are developing elite sunflower hybrids focused on maximum yield potential, exceptional disease and herbicide tolerance, and specific oil profiles to fit multiple market needs.

Our current commercial portfolio of hybrids is designed to fit specific environments and markets around the world. Growers count on us for premium hybrids that meet a variety of needs:

- Early to full season maturity hybrids that maximize yield across environments
- Excellent resistance to major sunflower diseases including Downy Mildew, Rust, and Alternaria
- Exceptional stalk strength and Standability
- Clearfield® and Clearfield Plus® herbicide tolerance for use with Beyond® herbicide
- Semi-pendulous heads reducing sunburn, head rot, and bird feeding

**Meeting Future Needs**

S&W’s global sunflower breeding and development teams are rapidly bringing new hybrids to commercial status. Improvements in yield, oil percentage and fatty acid profiles, and overall agronomic performance are providing commercial products that are competing well with the best hybrids in the industry. Our breeding lines include the latest genetic tolerance to all strains of Downy Mildew. Herbicide tolerance is included for all new hybrid releases including the Clearfield and Clearfield Plus Production Systems and Sulfonylurea herbicide tolerance. Our global breeding program is providing hybrids for testing in the US—local trialing in key sunflower geographies to identify the best performing hybrids for our North America markets.

**Our Team is Focused Solely on Sunflowers**

Our team of sunflower experts are dedicated to helping our growers prosper. We offer the highest quality, highest performing sunflower hybrids for the oil crush, birdseed, and wildlife food markets—providing expert support to help growers maximize hybrid potential in these sectors.

We are S&W’s Sunflower Partners

- Well suited for central and northern North Dakota growing areas and Double Crop
- Shorter plant height
- Excellent stalk and root strength
- Good late season plant health
- DMR
- Herbicide trait: Clearfield®, Beyond® herbicide applications

**SF110 HO/CL**

**High Oleic Oil**

SF110 HO/CL has excellent stalk and root strength with a shorter plant height and only 61 days to mid-bloom. It is best suited for central and northern North Dakota growing regions and for double cropping.

- Excellent stalk and root strength
- Very high consistent yield potential
- Excellent disease tolerance including DMR

- Herbicide trait: Clearfield®, Beyond® herbicide applications

**SF360 HO/CL**

**High Oleic Oil**

SF360 HO/CL is an early medium maturity hybrid that has very high and consistent yield potential. It is strong stalks and roots along with very high disease tolerance makes it a great fit for growers from North Central North Dakota to Texas.

- Excellent stalk and root strength
- Very high consistent yield potential
- Excellent disease tolerance including DMR
- Herbicide trait: Clearfield®, Beyond® herbicide applications

- Clearfield® and Clearfield Plus® herbicide tolerance for use with Beyond® herbicide

**SF440 HO/CL**

**High Oleic Oil**

SF440 HO/CL has excellent stalk strength and yield potential. It is best suited for South Dakota, High Plains and southern North Dakota growing regions.

- Best suited for South Dakota, High Plains and southern North Dakota growing regions
- Excellent stalk strength, average root rating
- Strong drought tolerance
- Excellent standability
- Excellent yield potential
- DMR
- Herbicide trait: Clearfield®, Beyond® herbicide applications

**Game Bird Delight**

**Wildlife**

SW1020CL is a medium/early hybrid designed for the Clearfield® production system. This hybrid is drought tolerant with excellent yield potential and standability.

- Herbicide trait: Clearfield®

- Beyond® herbicide applications
- Strong drought tolerance
- Excellent standability
- Very high Sol-Comatability

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- Very high consistent yield potential
- Excellent disease tolerance including DMR
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- Clearfield® and Clearfield Plus® herbicide tolerance for use with Beyond® herbicide

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