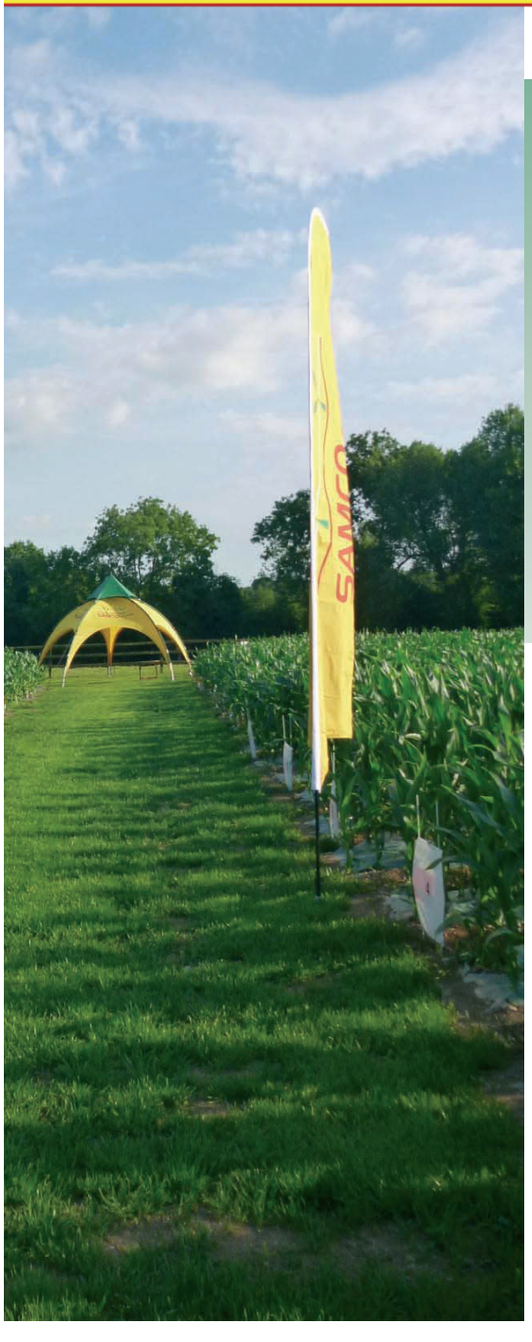
SAMCO SYSTEM

SAMCO Brochure

Summary



SAMCO: Our Philosophy

In 1996 I invented and patented the SAMCO 3 in 1 machine to guarantee local farmers a successful crop of maize corn each year. Now, farmers in more than 20 countries use the SAMCO machine and SAMCO film.

The innovative SAMCO 3 in 1 machine is still designed and manufactured in our facility in Ireland employing 35 people. We control all steps of production to assuring our product is of the highest quality.

We guarantee a high level of customer service to help you use the Samco System to the best of its potential. Our teams of agronomists and engineers are available to help you to fit the SAMCO System to your needs and your expectations.

Samuel J. Shine.

Managing Director

SAMCO around the world

Availability

Service

Quality

SAMCO System

Increase your performance

SAMCO System; What is it ?

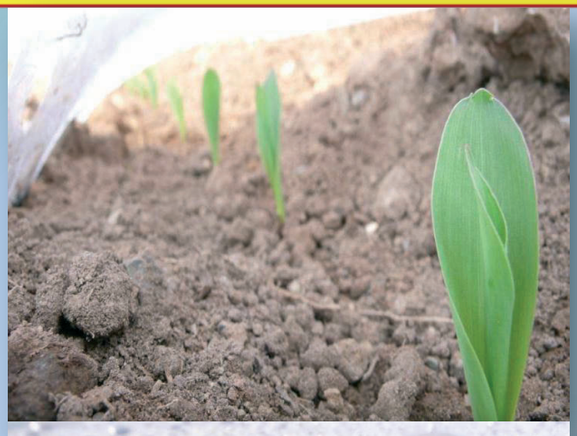
The SAMCO System is a complete and simple solution based on five key elements:

- The SAMCO Machine
- Efficient weed control
- The SAMCO Oxo-Bio degradable film
- Variety choice
- Agronomy

The machine sows the seed under a degradable film, creating a green house effect. It keeps the young seedlings in a warm, humid environment for up to 4 - 6 weeks. The plants **are protected from cold temperatures** and **the risk of soil capping** during the first month.

All SAMCO films have ventilation systems. It limits high temperatures under the film during warm spring days.

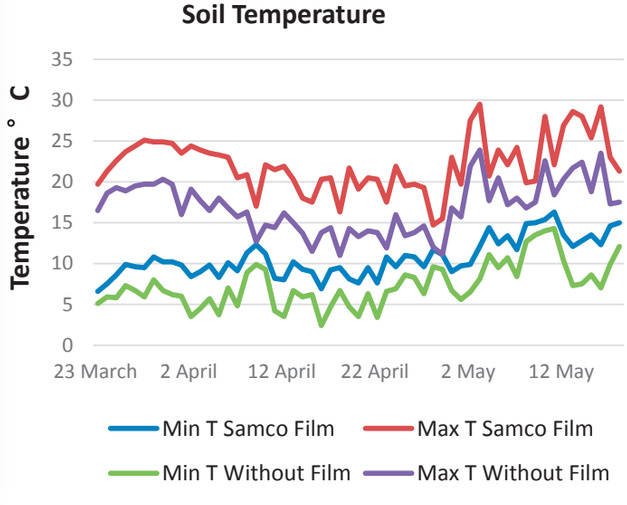
The SAMCO film degrades with UV energy and temperature to allow the film to be broken down and eaten by the micro organisms in the soils. When the maize plant is developed, it comes through the film and continues growing. During the stage of plant growth where the plant touches the film, the root system is developing more rapidly and deeper to sustain the plant in the later growth stage.

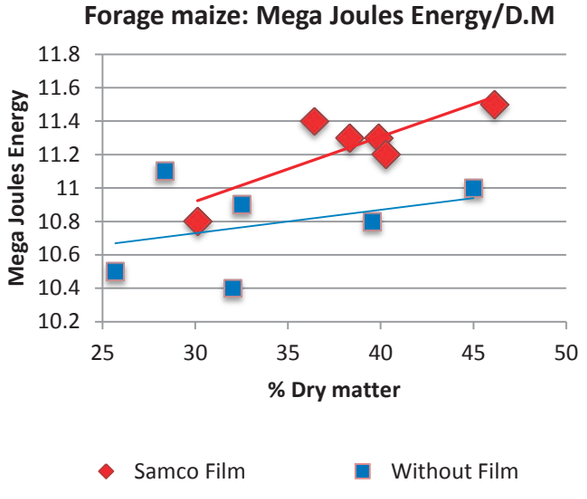


Through this process, earlier planting is possible. There is no need to wait until the optimum soil temperature is reached. As soon as the soil is dry, you can start to prepare the seed bed.

The SAMCO System makes it possible to grow maize corn in areas where the crop cannot be grown traditionally. In warmer areas, varieties with more genetic potential can be chosen to increase yield at harvest time.

'Increase your heat units, your performance and energy value''





At the end of the season, the SAMCO film has degraded, allowing clear soil for the next crop.

SAMCO System

Assured of a quality crop

SAMCO Machine

The machines are **designed** and **manufactured by SAMCO** in our factory in Ireland. It allows one pass for several operations:

- Forming the seed channel
- Sowing the seed
- Applying the herbicide
- Laying the degradable film

The machines have been developed with the user in mind. All functions of the machine are designed to provide ease of use for the operators.

SAMCO films

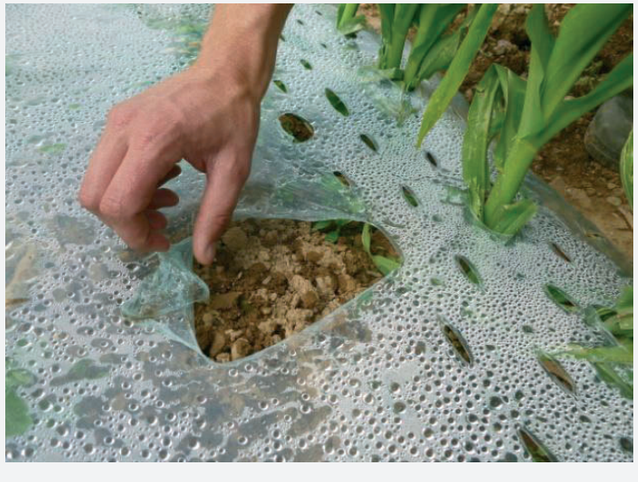
Developed and manufactured by SAMCO, the films are especially made to fit on SAMCO machines. The film is designed to be strong enough to be pulled through the machine, but also weak enough to allow the plants to break through at the correct growth stage. In addition to the greenhouse effect for accumulating extra heat units, the film also helps conserve water that would normally evaporate from the soil.

Weed control

The use of a pre emergence herbicide with the SAMCO System is necessary. The herbicide is applied by the SAMCO machine under the film and also between the rows of film.

SAMCO carry out many trials each year to determine the most effective herbicide programs for the system.

Good weed control is necessary to obtain the best results from the SAMCO System.



Ease of use

Automation

Versatility

Films easy to lay

Excellent degradation

Good film placement

Advantages and Benefits of The SAMCO System

- Single pass of machine (seed, herbicide, film)
- Earlier seed germination
- Protection of young plants from late frosts
- Moisture retention under film
- Better development of the root system of the plant
- Increased ear / plant yield
- Earlier to harvest
- **Up to 25% increase in performance**
- Higher quality forage maize (**increased energy value**)
- Preservation of soil structure in the field
- Reduced risk of crop failure

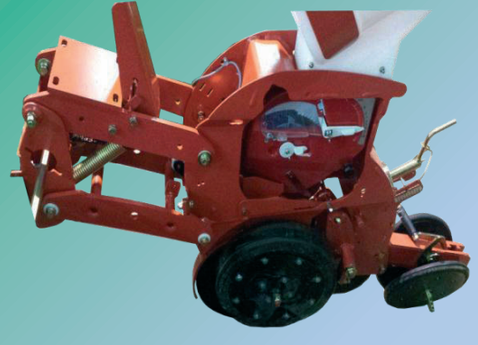
Up to 300 Heat Units increase using the SAMCO System

Seed Unit; Shoe or Disc Type?

Regularity

SAMCO have developed its machine to include pneumatic seed units. These units provide a consistent quality of seedlings even in difficult conditions, regardless of seed size or shape.

Depending on the model, SAMCO machines can be equipped with shoe coulter units or disc units.



The depth of the seed placement is individually adjustable. This adjustment is made easily and quickly by adjusting the wheel position.

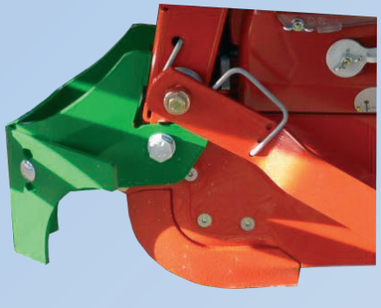
Shoe Unit

Disc Unit

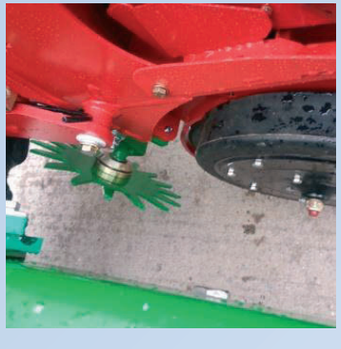
“ Drain seed units quickly and effortlessly ”

Seed units are equipped with a drain trap. This allows the user to empty or clean the units effectively.

Seed Units are all equipped with a system developed by SAMCO, enabling a channel to be made in the line of the seed row. This has a major role in the SAMCO System. It allows the plant to benefit fully from the greenhouse effect under the SAMCO film.



Shoe Unit

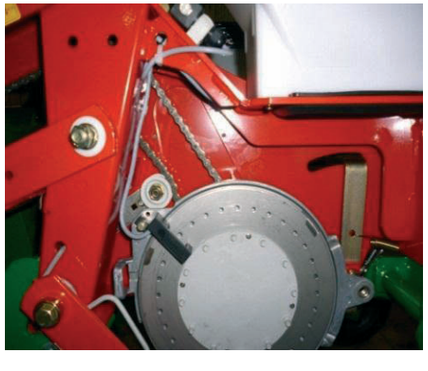


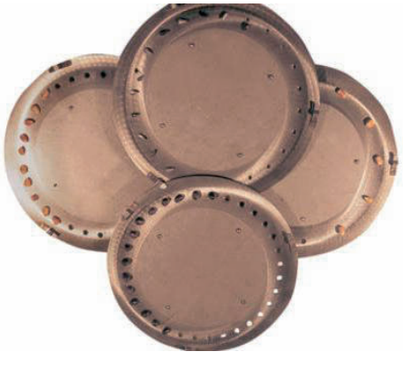
Disc Unit

‘’ Accuracy and Versatility: Gauge Profitability ‘’

The principle of the pnuematic seed unit is that it gives accurate seed spacing and delivery. It involves using a vacuum to suck the seeds onto a perforated disc. Two mechanical selectors can be adjusted to reduce doubling of smaller seeds on the seed disc and allow larger seeds to be sown without any changes to the seed unit.

A quick-opening system is used to change the seed disc if required to sow other crops besides maize corn.





The cab mounted seed computer, monitors the number of seeds being sown on each unit which is displayed to the operator via the display. Sensors fitted to each seed unit of the machine allow the operator to know when a unit is empty or blocked by sounding an alarm. The unit also measures the hectares sown.

Spray system

Profitability

'' Good weed control=
Potential for maximum performance ''

All machines are equipped with a SAMCO spray system for applying herbicide at planting.

Spraying of the herbicide is managed by a control unit located in the cab. It automatically takes into account the forward speed to regulate spray volume per hectare which is set in the program.

Front tank

All 4 row and 6 row mounted machines are equipped with a 1,200 litre tank to give a sowing range of 5 Hectares. It is positioned on the front of the tractor.

All 6 and 8 row Pull Type machines are equipped with a 2,000 litre tank.

To help the operator, and for safety reasons, the machine is equipped with a mixing pot for adding the herbicide to the tank. A self filling unit is fitted to allow the operator to fill the tank from a reservoir.

To meet the new standards a rinsing tank of 10% of the main tank is also fitted.

The little extra equipment on all tanks makes the difference:

- Road lighting kit.
- 10 liter tank to rinse hands.
- Bottom weight tray for extra weight placement.

PT model only

Management

The entire spray system is managed electronically, to reduce the work load of the operator. The spray system uses a diaphragm type pump to reduce wear and damage to the pump system.

Sprayer

Several spray sections are fitted on the drill in certain key areas to ensure a uniform spray under film and between rows of film. This is to ensure that the entire surface is sprayed.

To avoid any risk of blocking the nozzles, two filters are fitted on the spray system. They must be cleaned regularly to maintain a good spray pattern.

Different types of nozzles are fitted on the drills. At the rear of the drill, drift reduction nozzles are fitted for an even spray between films in windy weather.

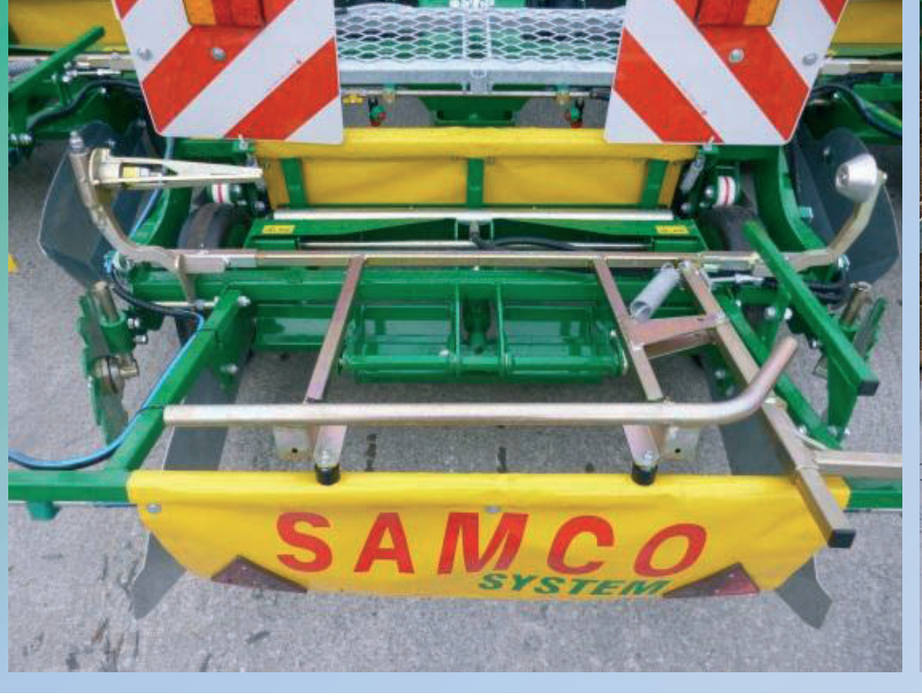
Film Metering unit

Finesse and Speed

Change rolls of film effortlessly and in record time…

….with the “Easy Roll Loading System’’

The film metering units on the SAMCO machine are designed to lay the film on the soil and to cover the edges securely. This prevents wind damage to the film, even while travelling at high speeds, to maintain daily output. Each roll of film covers two rows of maize corn. With the “Easy Roll Loading System,” it allows the operator to change the rolls of film with ease. Spring loaded roll holder units place the new roll in the correct position. Spring tensioned wheels allow the film to be fed into position and to maintain this position while working, eliminating the need of the operator to re-adjust the roll during operation.



“The machine to fit your type of soil”

Key to productivity

The placement of film on the soil is done with different elements of the machine, all of which are adjustable to suit all soil conditions.

Adjustable channel opening discs open a channel in the ground 10cm deep. Six depth positions can be used to allow the operator to achieve the required depth even on different soil types.

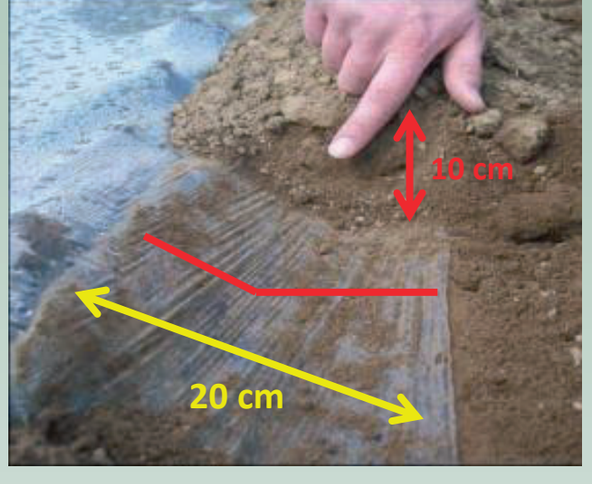
Once the channel is opened the operator lowers the film metering unit. This in turn operates the cut & bury plate to cover the film at the start of the row. This same cut & bury plate covers the film at the end of each row to avoid any wind damage to the film. The film is fed from the roll around the tyre on the film metering unit into the channel. A disc at the rear covers the edges of the film behind the wheel anchoring it to the soil. The covering disc is fully adjustable to work in different soil types.

Galvanized plates, which are also adjustable, prevent soil from flowing too far onto the film.

The correct burial of the film left and right is essential to secure the film against wind damage and to hold the film while the plant breaks through it at a later stage.

“Good coverage of the film, ….
….one of the keys to the system”

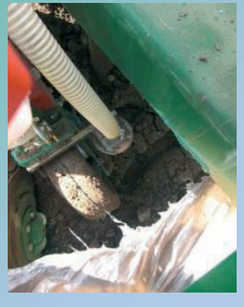
For correct coverage of the film, 20 cm on each side and 10 cm deep is recommended to keep the film anchored in the soil. The film must be positioned in the following ways;



Liquid Fertilizer Distributor

This system allows you to have liquid fertilizer near the seed row. Compound distributed by the system may be incorporated into the soil and/or deposited on the surface of the seed row.

Micro-Granular Distributor



This system allows the placing of micro-granules near the seed row. Compounds distributed by the unit may be incorporated into the soil and/or deposited on the surface of the seed row.

This system may be used for slug pellets, fertilizers etc.

Seed Row Clutch

Equip your planter with the seed row clutch system and save some seed. This system allows each seed unit to disengage to avoid double planting the seed rows. Available on certain models.

Technical Specification*

Type of machine	22 TR	4800	40HD	7100	60 HD	60 PT	80 PT
Working width (metres)	1.5	3.3	3.3	4.5	4.5	4.5	6.2
Transport width (metres)	1.5	3.2	3.2	3.2	4.7	5	6.5
Length (metres)	2.4	2.9	3.2	3.4	3.7	8	8
Height (metres)	1.4	1.5	1.5	2.6	1.5	2.5	2.5
Weight (kg)	800	2,100	2,400	3,500	3,100	5,500	7,500
Total rows	2	4	4	6	6	6	8
Row Spacing (cm) Under film / between film	70/80	70/90	70/90	70/80	70/80	70/80	70/80 (90cm between film rows 4 and 5)
Type of seed unit	Shoe Type	Shoe Type	Disc Type	Shoe Type	Disc Type	Disc Type	Disc Type
Working speed (km/h)	5 - 7	5 - 7	5 - 7	5 - 7	5 - 7	5 - 7	5 - 7
Herbicide tank volume (L)	200	1,200	1,200	1,200	1,200	2,000	2 000
Seed computer	Option	Standard	Standard	Standard	Standard	Standard	Standard
Spraying computer	-	Standard	Standard	Standard	Standard	Standard	Standard
Spare Film roll carrying capacity Front Tank + Machine	0+2	12+4	12+4	12+4	12+4	0+24	0+24
Power necessary (HP)	50-60	100-120	100-120	150-170	150-170	120-150	160-180
No. of double acting hydraulic valves required	1	3	3	3	3	3	3
Front linkage necesseray	No	Yes	Yes	Yes	Yes	No	No
PTO speed (rev/min)	540	540	540	540	540/1000 option	1,000	1,000
Sprayer Pump Output (l/min)	26	99	99	139	139	200	200
Options:							
Micro granulator distributor	o	○	○	○	○	○	○
Liquide fertilizer distributor	-	○	○	○	○	○	○
Seed row clutch	-	-	○	-	○	○	○

*Due to a continuing policy of product improvement, Samco Agricultural Manufacturing reserve the right to alter specifications without notice.

SAMCO Degradable Films

SAMCO: World Leader

SAMCO has developed different types of Oxo-Bio degradable and Bio-degradable films to meet the needs best suited for different markets. Today there is over ten different commercially available films from SAMCO.

Each film is developed and tested in our laboratories and in the field before being marketed commercially.

All SAMCO rolls have the SAMCO Patented Green Insert that ensure optimum positioning on the machine. This allows the film to be laid correctly and at the correct tension to optimise results.

SAMCO is today, and has been for nearly 15 years, a specialist in degradable film. We control all stages of production, allowing us year after year to develop films for today and the future.

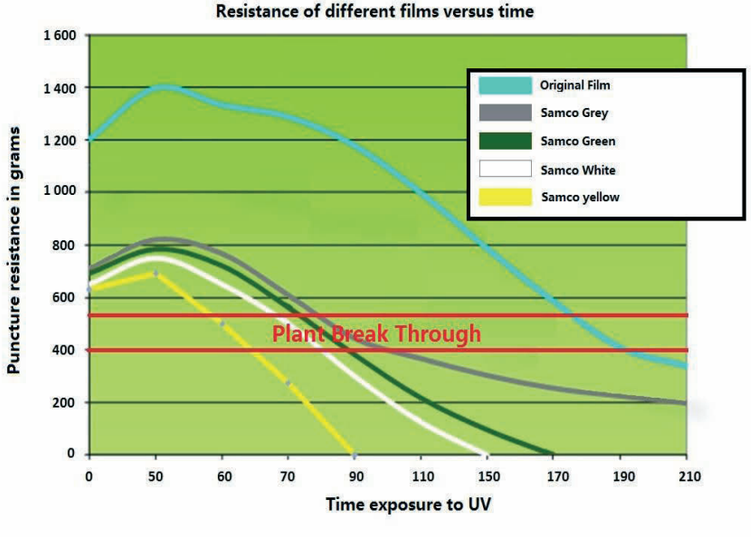
The SAMCO films are designed to match perfectly with the climate, region and type of crop being planted. The experience that SAMCO has gained is unparalleled in the market. The make-up of the SAMCO film allows the controlled rate of degradation. It is possible to have more than 90% film degradation before harvest.

Each SAMCO Film has unique characteristics. Several criteria are used to select the film that will provide the best from the system:

- Variety of seed: The varieties of seed do not all have the same ability to ultilise the extra heat units accumulated by the film. It is also important to have a variety that can break through the film at the correct stage of growth. Samco carry out many trials every year to identify the best varieties suitable to the system.

- **Climate:** The SAMCO films degrade due to a combination of different factors. Temperature, soil humidity and UV are some of these factors. The climatic conditions of the first weeks after laying of the film effect its degradation speed and therefore the date on which the plant will break through the film.

- Perforation type: The SAMCO film is designed and patented with different perforations which include Pinhole, TD Slots and MD Slots. These are used for different regions and sowing systems so that the system achieves the maximum performance desired.



All SAMCO Film is colour coded for identification purposes.

The SAMCO Yellow film is used for rapid degradation and was designed to warm the soil and the plant for a short time.
This film is designed to be used for planting various crops such as sunflower, soya and peas.

SAMCO Films White, Green and Grey are designed for maize corn. Their compositions give them each different rates of degradation speed. The goal is to optimize the greenhouse effect and nurture the maize corn seedling in a warm and humid atmosphere.

The SAMCO Black film is an organically degradable film designed for the needs of organic farming. It allows heat to pass to the ground and allows the light only to the seed rows. This limits the growth of weeds and allows the plant to grow strong enough ahead of weed competition.

Films

A combination of conditions = a suitable SAMCO film

To avoid overheating of the young plant under the film, SAMCO has developed and patented three aeration systems. These are placed on the crop rows reducing the risk of extreme temperatures under the film, and also helping the plants to break through the film.

Pin Hole :

This is a pin perforation of the film just above the rows of maize. This system traps the maximum amount of heat under the film. It is suitable for early sowing in all the geographical areas where the outside temperatures do not exceed 25°C during the firsts weeks after sowing. The pin hole is the type of ventilation that keeps the plant under the film longer but it depends on the type of film used.

MD Slots:

Aeration is ensured by many small slots, 2cm in size above the planted maize. The slots allow more air circulation around the plant at the early stages. It is suitable for all seedlings in the geographical areas where the outside temperatures do not exceed 30°C during the first weeks after sowing.

TD Slots:

Aeration is provided by slots 9 cm in length above the planted rows. Sustained ventilation around the plant is assured due to the large movement of air. It is suitable for all late planting where the risk of frost is minimal. The plant breaks through the TD type film much easier than MD and Pin Hole. The greenhouse effect can reduce evaporation and maintain a higher temperature in the soil.

Some selected films are produced with the 'Patented Grip Hole' pattern allowing a better grip of film in the soil.

Film Colour	Type of Aeration	Thickness (microns)	Roll Weight (Kg)	Roll Length (metres)	Coverage *	
					Ha	Acre
Yellow	Pin Hole 28	7	31	3,100	0.5	1.25
White	Pin Hole 20	7	31	3,100	0.5	1.25
	TD Slots	10	31	2,480	0.4	1.0
Green	Pin Hole 28	7	31	3,100	0.5	1.25
	30 MD	7	31	3,100	0.5	1.25
Grey	Pin Hole 20	7	31	3,100	0.5	1.25
	30 MD	7	31	3,100	0.5	1.25
Black	TD Slots	15	31	1,030	3 rolls cover 0.5 Ha	3 rolls cover 1.25 Acre

* The area covered by a roll of film may vary on outdoor temperature and machine settings.

SAMCO SYSTEM

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