

# How to grow your crops using paper mulch

## Advantages of mulching with AgroPaper®



**AgroPaper®** is a 100% sustainable, biodegradable and compostable mulch.

By using it, you improve the organic matter content and fertility of your soil, as well as its biological activity. Thereby, reducing the risk of soil-associated and fungal diseases in your crops.

You protect the soil against erosion, preserving and improving soil structure, preventing its degradation and compaction, ensuring that crop roots can grow properly. Also ensuring efficient water infiltration and storage.

**AgroPaper®** helps to conserve soil biodiversity and the full range of its biological functions, optimising the use of inputs. It contributes in ensuring the availability and flow of appropriate nutrients to maintain or improve soil fertility.

All this can happen without introducing plastics or other associated pollutants to the soil or the environment.

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# How to choose the paper that best suits your farm

There is a type of **AgroPaper®** for each management, climatic condition and crop group, as well as the installation system you are going to use. It can be purchased in its **natural brown colour** or **tinted black** with natural biodegradable dyes on one or both sides.

It is especially **advantageous in warm climates** and **during the summer period**. In addition, it is **able to control adventitious plants such as sedge**. In the table below you can find the general specifications for each type of **AgroPaper®** currently available:

TYPE OF PAPER	PLACE	INSTALLATION	CROP	CYCLE	IMPACT OF WEED GROWTH	CLIMATE	TYPE OF IRRIGATION
<b>SX70</b>	GREENHOUSE	MANUAL	Various crops	Short- Medium	Poor- medium	Dry	Sprinklers, Drip, None
<b>SX70 BLACK</b>	GREENHOUSE	MANUAL	Various crops	Short- Medium	High	Normal	Sprinklers, Drip, None
<b>SX90</b>	OUTDOOR	MECHANICAL	Various crops	Short- Medium	Poor- medium	Normal	Sprinklers, Drip, None
<b>SX90 T+B</b>	OUTDOOR	MECHANICAL	Various crops	Medium- Long	High	Normal & Extreme	Sprinklers, Drip, None
<b>SXWS90</b>	OUTDOOR	MECHANICAL	Various crops	Medium- Long	Poor- medium	Normal & Extreme	Sprinklers, Drip, None
<b>SXWS90 T+B</b>	OUTDOOR	MECHANICAL	Various crops	Medium- Long	High	Extreme	Sprinklers, Drip, None
<b>SX70+PLA</b>	OUTDOOR	MECHANICAL	Various crops	Medium- Long	High	Extreme	Sprinklers, Drip, None

## Installation instructions

Paper mulch is ideal and doesn't imply more management difficulties than plastic mulch when used in **greenhouses** or **areas with little exposure to wind**.

For outdoor use, **AgroPaper®** mulch **shouldn't be installed on rainy or windy days**, the less stony the soil is, the better the installation and maintenance. It should also be ensured that **no more than one week elapses between the installation of the mulch and the planting**.

If the **AgroPaper®** mulch is going to be installed mechanically, **some changes in the installation tools, normally used for plastic mulch, should be made**. The main difference is that **paper mulch requires less tension and is more sensitive to the pressure** that may be exerted on the sides during installation. If paper mulch is being used for the first time, **the speed should be moderated** until the optimum velocity for its installation is found.

**Before perforating the AgroPaper®** for planting, **an initial watering should be carried out** to settle the paper on the soil. And once it has dried, it can be perforated.

During the crop's development, **the paper should not be stepped on**, as the strength of **AgroPaper®** decreases when wet.

**After harvest, the paper mulch can be incorporated into the soil by tilling or using a rotovator**. Once mixed into the soil, if kept buried, **AgroPaper®** will decompose within 8 to 10 weeks. If it is not completely buried, it will take longer to decompose, but will still act as a carbon reserve in the soil.

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## Recommended tools for the installation of AgroPaper®

One of the best implements for working with paper mulch is the **Garcerán Chirlaque model** (manufactured in Balsicas, Murcia). It is a trailed implement, in which all the weight is on the outer wheels, which do not come into contact with the **AgroPaper®** mulch and do not tear it. The centre wheels are idle wheels that keep the paper taut with only their weight (not the weight of the whole machine).

It is recommended working at a **slightly lower speed** than when installing the plastic mulch **to avoid tearing**.



### Pneumatic installation tool

**This is the most commonly used system due to its low cost.** In this case, it is necessary to **use the third support point** to ensure that the reel remains suspended instead of being dragged.

In this mulching implement, it can be seen how the wheels pull the mulch taut. This is because all the weight is placed equally on both wheels. The problem with using paper mulch is that too much tension can tear the paper.



In this image you can see **an example of the effects that excessive tension applied by pneumatic installation tools can have on paper mulch.** As soon as a tear like this appears, it is essential to stop working and readjust the tool, otherwise it will spread all over the roll.



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### Disc injection installation tool

The main problem, when using this mulching tool, is that **the reel sits on the discs** and, as all the weight falls on a very small surface (contact area with the discs), the reel can unravel unevenly and become loose.



The STF mulching machine was created and adapted by FORIGO ROTER ITALIA specifically for the application of AgroPaper® mulch, either on one and two furrows simultaneously.

During the development of the LIFE **AgroPaper®** Project (developed with financial support of the LIFE European Union programme, reference: LIFE 19 ENV/ES/000404) an agreement was made with the agricultural machinery company, FORIGO ROTER ITALIA, for the adaptation of a mulching machine for the application of **AgroPaper®** and the necessary tests were carried out to verify the correct operation of the machine in the fields.



Once the crop has been harvested, **the rest of the paper mulch can be incorporated into the soil with a rotovator.**

## Where to find AGROPAPER® and advice

You can find more information about the advantages of using **AgroPaper®** at <https://www.lifeagropaper.eu/>

If you want to purchase **AgroPaper®** or need advice from technical experts, please do not hesitate to contact us at: <https://www.smurfitkappa.com/es/products-and-services/paper-and-board/agropaper>

By using **AgroPaper®** mulch you contribute to increasing the carbon and organic matter content of the soil, improve its fertility and biological activity and do not incorporate plastics or microplastics into the soil or the environment.

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