

ANNEX 1

MUZZLES FOR SILVOPASTURING OF SHEEP AND GOATS IN FRUIT TREES

The KI muzzles are used in both sheep and goats so that the animals can graze in different fruit crops without causing damage to them. This way, the use of herbicides such as GLYPHOSATE is substituted by the action of these animals, as well as partially the use of mineral fertilizers, since their excretions serve to fertilize the crops. Additionally, labor costs and expenses on inputs such as fuel are substantially reduced.

The mask and its fastening harness are specially developed so that while the animal has its head raised, it prevents it from eating the buds and fruits of the crops, and when it lowers its head, it allows it to graze normally, as well as drink water and consume any type of supplementation given to them.



BENEFITS FOR SHEEP AND GOATS

The animals benefit from the protection provided by the fruit trees, with shade in the summer and shelter in the winter, as well as being able to feed on fresh and high-quality pastures, since most fruit crops have irrigation.

With the use of KI muzzles, the grass generated by summer humidity is utilized instead of wasted. Additionally, being under fruit trees, they are protected from aerial predators such as hawks and vultures, as these cannot descend to grab them.

The muzzles were developed and tested for over a year to obtain the most suitable configuration, making it easy to use for the producer and comfortable with animal welfare in mind.



BENEFITS FOR PRODUCERS

THE KI MUZZLES ENABLE PRODUCERS

Replacing **chemical herbicides and fertilizers** with grazing between crops.

Generating **additional income** by integrating livestock into agricultural properties.

Diversifying income and products.

Reducing labor costs.

Reducing costs on inputs such as fuel, tools, implements wear and tear, among others.



With KI, it is possible to **replace the use of herbicides** such as GLYPHOSATE with the action of these animals, as well as partially the use of mineral fertilizers, since their excretions serve to fertilize the crops.

In many cases, depending on the labor available on the property, sheep/goat production can be a significant additional income. This is because you can work with a high stocking rate of sheep per hectare for better pasture utilization and thus obtain better soil fertilization.

If parceling or divisions are made and one or two daily changes are made per parcel, the animal stocking rate per hectare can be very high, and thus **the income from livestock production can be greater than that from fruit growing.**

AVOID DAMAGES

Thanks to the use of KI muzzles, ***silvopasturing in fruit trees can be carried out throughout the fruit tree's productive cycle without causing major damage to production.***

Without the muzzles, animals could not remain in the crop once the plants start to sprout because they eat the buds and leaves, causing different damages depending on the type of fruit tree.

For the correct use of KI muzzles, the fruit trees must have their branches above the height of the animal's head and the trees must have a structure that prevents the animals from twisting them. ***Ki muzzles do not protect branches below that height.***



TECHNICAL SPECIFICATIONS



Like standard muzzles used in the agricultural sector, it is composed of:

A "mask" made of high-density polyethylene, resistant to impacts and the effects of UV rays. It is designed in such a way that it allows animals to graze in fruit trees without causing damage to them. Its frontal structure prevents entanglements in fruit trees and also prevents the animals' snout from approaching the branches.

A harness constructed with synthetic straps, pressure hooks, and high-resistance metal rings.



Dimensions of the assembled mask and harness for shipping:

14cm x 16 cm x 22cm



Weight of the harness and mask kit:

250gr



Recommended packaging

Box of 20 units

30cm x 44cm x 31cm

Box of 48 units

40cm x 59cm x 40cm



ADAPTS TO DIFFERENT BREEDS AND SIZES

Through the 4 metal hooks of the harness, the tension and dimensions of the muzzle are adjusted, allowing it to be adapted to the majority of different sizes and breeds of sheep. Its recommended use starts when the animals are weaned from their mothers since the muzzle prevents suckling. Depending on the breed (greater or lesser corpulence), it can be placed **from 3 months onwards**. It should be verified that the size of the snout is sufficient so that the strap passing under the jaw does not come off. Generally, it should be observed when the lambs begin to try to eat the crops, and that is the time to start placing the muzzles.



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USAGE RECOMMENDATIONS

FOR **PROPER DEVICE OPERATION** AND THE BEST PROTECTION OF ANIMALS AND CROPS, IT IS IMPORTANT TO CONSIDER THE FOLLOWING **RECOMMENDATIONS**.

The harness must be correctly placed and adjusted to the animal following the placement sequence indicated in the "user manual" document.

After a day of being placed, it is recommended to make an adjustment pass of the harness to correct any that has shifted or loosened.



While the device can operate correctly without the placement of a counterweight in the front, its use **is recommended to reduce the chances of damage to the fruit trees**. The counterweight is placed in the perforation of the front flap, and a through screw with washers and nuts should be used in sufficient quantity to reach the necessary weight.

The amount of weight to add depends on the breed and body condition of the animals. It also depends on whether they are more "skilled" and find a way to eat from the fruit trees; thus, by adding more weight, the animals are discouraged from browsing.

It is recommended to observe the animals daily during the first week and with some frequency after the first week to ensure that the muzzles are properly placed and to detect if any animal needs to add more counterweight due to its tendency to persist in attempting to browse.

In the tests carried out, it has been observed that with **up to 150g of counterweight**, the behavior of the animals changes, and the habit of browsing mostly is discouraged.

During the usage tests, **no relevant injuries were recorded**, only in some cases subcutaneous injuries and in some breeds the formation of a callus on the snout due to prolonged use, which does not generate any disturbance in the behavior of the animals. This point should be chequered with some frequency to avoid injuries.

