Planting density with greater distance between furrows and less between plants (2.5 metres x 0.8 metres)

Planting density is defined as the number of plants per unit of land area, and has an influence on production through its link to the competition that can be generated between plants (water, nutrients, light, space, etc.). Traditionally in Central America, separations of 2 x 1, 2 x 1.25 and 2.25 x 1.25 are used; however, in view of the different effects of the variability of the climate, the need has arisen to establish new spatial arrangements which allow for better production. One of these arrangements is to increase the distance between furrows and decrease the distance between plants, so far the most appropriate is 2.5 x 0.8. With this we intend to improve air circulation, improve the exposure of the plant to capture light, facilitate handling, mechanisation and provide more space to establish cover crops (e.g. *Brachiaria ruziziensis*).

Climatic conditions that warrant the establishment of cover crops

Threats

Temperature increase

Irregular rains

Changes in rain patterns

Abrupt changes in temperature

Negative impacts

Pests and diseases

Increased need for input

Decrease in productivity

Less water availability

Promising spacing distances

Spacing distance between plants - 0.8

Spacing distance between furrows - 2.5

Plot with spacing and cover

Implementation step by step

- With the help of an "A" level, prepare the contour lines with the spacing distance of 2.5 x 0.8.
- Hole digging must be done trying to make holes of at least 40 x 40 cms. but this may vary according to the type of soil
- Depending on the climatic threats, with this system it is possible to incorporate most of the ground cover and temporary shading. It is important to consider the location of the shade to facilitate the work of handling the coffee

The comparisons of plots established with wide spacing distances show the existence of a better development of the coffee plant, especially with much better developed laterals towards the furrows. It also allows the incorporation of cover which generates other benefits for the system.

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