

The fence as a peasant family agricultural production space in Santiago del Estero, Argentina

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ABSTRACT

The peasant in Santiago del Estero, has been conceptualized in several texts under different looks. For example, they are defined as an agrarian social actor with ways of acting and producing not typically capitalist and depending on the type of agricultural exploitation that occupies (predominantly without de ned limits). This social actor is characterized by cultivating in diverse productive units called “fences”, with heterogeneous characteristics in the different regions, typical of the different socioeconomic and agroecological realities of the wide provincial geography. These characteristics constitute the main strategies of social reproduction. The “fence” is an agroecosystem of polyculture, adopted in an ancestral way and carried out in a traditional way by the peasant families, surrounded by natural vegetation characteristic of the semiarid Chaco and with low or no external application systems. It is a habitual productive practice within the peasant life system, which associates several crops (polyculture) and is carried out in small surface areas generally, in dry conditions; closed perimetally, and is what gives rise to its name. In order to generate information on the productive practice of the “fence” within the peasant way of life, forty-one random semi-structured surveys were conducted for peasant families in the departments of Capital, Río Hondo and Guasayán in the province of Santiago Of the Estero. “Fences” are traditional polycultures, which occupy the majority of the family members. These combinations maximize land use, although on some occasions they do not produce surpluses, they ensure self-consumption that is their main objective. They are made in low areas of rainfed areas, including mainly corn and cucurbitaceae, are planted using specially “criollas” seeds adapted to their agroecological environment, during the period of maximum rainfall.

Keywords: peasant, polyculture, rainfed.

INTRODUCTION

Characteristics of peasant farms in Santiago del Estero

The northwestern region of Argentina (NOA) has 57,483 farming operations, from which 42.67% are farms without nest limits, strongly associated with the figure of the occupying peasant or Creole stall holder (Paz, 2008). In the province of Santiago del Estero there are approximately 14,000 small farmers (70% of the total of the FOs of the province). This is one of the provinces of Argentina with the highest number of small farmers (CNA, 2002).

The small farmers subsist with their family unit of production and consumption. This production is conducted under any form of land tenure for self-supply and to sell in the local market or in the area. In these tasks family work predominates. The fence is a usual productive practice within the peasant life system, which associates several crops (polyculture). It is usually conducted in smallholdings, under rainfed conditions, and in a closed perimeter, which is the root of its name.

The family of small farmers has a great ability to adapt to unfavorable conditions, which was demonstrated over time.

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This capacity for resistance is explained by the fact that the members of the farmer family knows how to combine different activities and roles, and conduct different survival practices that allowed them to manage the field. These practices enable that they may trust their own capacities, resources, and knowledge, and in this way they can build their way of life (Periódico Acción, 2008).

Tasso (2001) defines the typical peasant family as with farming and small-scale rearing activities. This activity is subject, even more than in other regions, to strong seasonal migratory pressure. Although adult males rests are in charge of maintaining the fences for the crops and maintain the small flocks of goats and sheep (and, eventually, some cattle) they work during the summer as harvesters in different regions of the Pampas. During this time, therefore, these activities are shared with younger and older men, and with women.

The main production models are agriculture and forestry, combined in different ways. In agriculture, they work with small fences in an area between 0.5 and five hectares, where corn, squash, cotton and alfalfa are grown. Raising goats is the most widespread livestock activity, and it has been so for the last decades. The productive model of many families -espe-

cially in the districts of Atamisqui, Loreto and San Martín - also includes the traditional hand-woven production of weaving conducted by women. In turn, beekeeping is among the new adopted activities (Ledesma and Tasso, 2011).

The productive structure of the small farmer family of Santiago del Estero

1. Livestock production

It is mostly composed by cattle and goats, but the number of animals is minimal and destined for self-consumption. Livestock diversification is a constant in these farms. There are on average eight species of animals per farm: goats, sheep, pigs, chickens, horses, cows, and turkeys. There is a strong positive correlation between the cultivated area and the number of animals, where there is a significant increase in cattle, especially. The smaller animals (chickens, turkeys, pigs) are reared near the house, do not have any type of special infrastructure and are generally fed with the grains from the corn crop and with alfalfa.

The farms without defined boundaries do not have perimeter fencing, which is very common among farmers who only maintain a fence of branches for agricultural activity and graze their animals in the forest (Paz, 2006). Both goats, sheep and cattle are raised in the open forest. This implies a total absence control referred to both the animal load and its basic health care.

Ninety-five percent of livestock production is destined to cover the alimentary requirements of the family. Only a small proportion is oriented to a totally informal market, which allows the small farmer family to incorporate another source of income.

The development of the livestock system over agriculture is due to the confluence of several factors:

a. Use of marginal manpower: to maintain or develop a livestock system does not require the attention of the head of the family or children of working age.

Generally the animals are cared for by small children, the elderly and the women of the home.

b. Low levels of investment: rearing, as already stated, does not require basic infrastructure such as feeding. The animals are raised near the house and in the open forest, and the food supply usually comes from the forest (collected by the animals themselves or by the children), the leftovers and waste of the family's daily food and, to a lesser extent, from the agricultural system.

c. Marginality of the agroecosystem: the agricultural system demands more favorable agro ecological conditions for its development, while the livestock systems, especially those composed of rustic animals, has a greater flexibility within this context of strong conditioning factors (Paz, 1995).

2. Agricultural production: polyculture fence

The rainfed peasant agricultural production in Santiago del Estero is conducted in low areas (natural lowlands), in lands selected for their capacity to store moisture in the soil's profile, where traditional polycultures that include corn, various cucurbits, and alfalfa are implanted. They are called fences. Their surfaces that range on average between 0.25 and 5 hectares, they are cleaned of the native forest and preserved of animals with fences of branches and plants, preferably local thorny bushes. The native forest surrounds the planting surface, and these extensions depend on the agroecological characteristics of the provincial zone where they are implanted (Helman and Jorge, 2013).

Like the livestock activity, agriculture is done by allocating the production to the family and their animals' consumption. This is defined by a testimony: "In my house I have approximately one and a half hectares of fence, which is where we grow corn, then pumpkins, water squash, squash for consumption and, besides, some water squash for sale (...)". Interview 2 in the Hoyon,

Atamisqui, S. del E., 6-5-2010 (Desalvo, 2011).

The fence is an ancestral polyculture agroecosystem, traditionally carried out by peasant families, surrounded by natural vegetation characteristic of the semi-arid Chaco and with low or no external input application.

The polycultures systems are based on the maximum increase in the use of land where farmers have small farms. Due to their low socioeconomic conditions, the production of the different crops is subject to the amount of land they can manually clean, prepare, weed and harvest in a limited time (Gutiérrez-Martínez et al., 2007).

In polyculture systems, two or more plant species are sown in the same area near enough to result in a complementation between species or interspecific competition.

At present, in Santiago del Estero there are no data describing the fence, nor quantifying its socio-productive aspects.

From the knowledge of these traditional sowing systems, technologies that improve their productions can be generated and adapted, since they provide for the self-consumption of the peasant families and thus contribute to their development.

Therefore, the objective of this work was to generate information that allows characterizing the productive practice of the fence within the small farmer way of life, in a rainfed area of Santiago del Este. This information is intended to be used as a basis for the development of future strategies of development, preferably towards this sector of society that has a logic of life with sustainable production systems that do not generate greenhouse gases and that contribute to the conservation of biodiversity (Leisa, 2010).

MATERIALS AND METHODS

Forty-one random semi-structured surveys were conducted between July and August 2013 with small farmer families included in the ProHuerta Program of INTA. These families were located in the following places: site La Estancia in the department Capital; sites Villa Río Hondo, Patillo, Pozo Huascho, and Tres Flores in the department Río Hondo; and sites Alta Gracia, Blanca Flor, Las Juntas, and Puestito in the department Guasayán, in the province of Santiago del Estero,

In the surveys, people was enquired on the following aspects: presence of the fences in farms, time from the implementation of the fence, usual crops and tasks performed, size of the fences, destiny of the production, origin of the workforce, and others aspects (Helman and Jorge, 2013). The selected surveyed members of each family were older adults, without discriminating gender. The surveys were conducted by the authors.

The information on precipitations in the departments Choya, Guasayán, and Río Hondo - where the surveys were ca-

ried out on peasant families - were obtained from the agrometeorological information of INTA Santiago del Estero.

RESULTS

The representatives of the surveyed families were 17 women and 24 men.

Fence

Of the 41 surveyed families, 93% had at that moment a fence and only 7% of the surveyed families do not have fences (but they did previously) for various reasons related to land ownership problems. This shows that sowing in fences is a widespread practice in the area of the surveyed families, a situation that is different in other areas of the province (Desalvo, 2011).

Time from the implementation of the fences

Ninety-five percent of the surveyed families have the fence for over 5 years. Within this group, a high percentage (54%) expresses the greatest antiquity with a recurring phrase: "I have always had it". Only 5% have fences of less than 5 years.

Motivation

The alternatives in the survey to inquire about this aspect were: a) it does so because it is beneficial or b) it does so because its ancestors did it.

A hundred percent of the people say that they do the fence "because it is beneficial" for their family, arguing that what is produced using this system is destined for self-consumption, discarding other reasons such as tradition.

Number of fences

A high percentage (63%) of the respondents have a fence. Twenty-seven percent has two fences, and the remaining 10% corresponds to those who have three fences. There are a total of 60 fences currently worked by 41 families in the surveyed area.

Beginning of planting

In the western area of the province, which includes the departments Río Hondo, Choya and Guasayán, 80% of respondents start the plantings in the time interval between the first half of November and the second half of December, with a higher percentage (27%) on this last.

End of planting

Eighty-six percent of the surveyed people state that the end of the sowing period extends from the first half of Ja-

nuary to the second half of February. Within this period, the highest percentage (37%) of the respondents sows until the first half of January.

Source of system water

Ninety-eight percent of the water used for the polycultures in the fences comes from the summer rains. Only one (1) of the surveyed (2%) producers has his fence on the shores of the lake Termas de Río Hondo, and therefore he sows on the mud using the humidity that remains when the lake retires. He also has the contribution of rainfall.

Topography of the area where the fence is located

In 95% of the cases fences are constructed in natural lowlands (95%), which allows to store the rainwater. Only two surveyed people (5%) answered in the "other" category, which correspond to mountain areas, where farmers plant in the lowlands and in some of the higher surrounding areas.

Fencing of the sowing plot

All the surveyed people fenced the sowing area. Thirty-four percent of them creates the fence using branches and/or thorny plants and/or with a perimeter ditching. A smaller percentage (22%) has a complete wire fence with wooden rods. But the most used (44%) is the combination of the two previous types, possibly due to lack of resources to use wire for the complete perimeter. Usually, they start fencing traditionally with forest resources, and as they have money to buy wire they replace it.

Sown species

Most of the surveyed participants (78%) plant polycultures combining maize with various species of cucurbits. Twenty percent of them add to these polycultures other species such as alfalfa or sorghum. Only one (1) producer (2%) planted a monoculture of cucurbits and recognized that it is not a usual practice for him and that only occurred in one campaign.

Source of the maize seed

Fifty-four percent of the producers who grow corn (40), sow their own seed, obtained from previous harvests, 23%

Fences	F	%
Yes	38	93
No	3	7
Total	41	100

Table 1. Number (F) and percentage (%) of families using fences. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

Age (years)	F	%
Less than or equal to 5	2	5%
Above 5	39	95%
Total	41	100%

Table2 . Number (F) and percentage (%) of the construction of fences among the surveyed families. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

buy the seed and another 23% uses seeds provided by some provincial or national state program.

Farmers state that the seed obtained from their own crops in previous campaigns (criolla) were selected from the larger maize ears, with the largest and healthiest grains. They also explain that the flavor of the seeds when cooked is another criterion to select the seeds. Another common practice associated with the seed is the exchange of samples with neighboring families.

Source of the cucurbitaceae seed

All the surveyed producers sow Cucurbitaceae, although they are not usually one specie, but they sow a mixture of species, namely: pumpkins, squashes, ancós, anquitos, watermelon, melon, and others. (Ledesma and Tasso, 2011). The usual practice is the sowing of the own seed (83%) (criolla) that comes from selections of previous harvests. Only 7% buys seeds and the remaining 10% uses seeds provided by provincial or national programs. The own seeds used in the sowing come from the tastiest fruits. They are separates, cleaned, and once dried they are stored until the beginning of the following campaign. It is also common to exchange part of the seeds with their neighboring families.

Spatial arrangement and types of sowings

The surveyed farmers use two types of spatial arrangements: in strips and interleaves (Gliessman, 2002). In any of these arrangements, sowings can be broadcast or in lines. These alternatives result, in the field, in four combinations.

The interviewed producers show a marked preference to sow in lines whether they sow in strips or interleaved, which is explained because they sow in the groove the 'mance-ra' plow creates (traditional plow of a single animal furrow). They also prefer to sow in lines because it is easier to take care afterwards of the polycultures. Broadcast sowing is usually done when the sowing bed is prepared with a harrow pulled by the tractor. When the harrow goes through the soil, the sower sitting on the tractor throws the seed while the disks cover them.

98% of the interviewed farmers stated that using fences is part of the family tradition.

MOTIVATION	F	%
Benefit	41	100%
Tradition	0	0%
Others	0	0%
Total	41	100%

Table 3. Number (F) and percentage (%) of answers concerning the motivation for building fences of the families surveyed. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

NUMBER OF FENCES	F	%	TOTAL NUMBER OF FENCES
One	26	63%	26
Two	11	27%	22
Three	4	10%	12
Total	41	100%	60

Table 4. Number (F) and percentage (%) of answers concerning the motivation for building fences of the families surveyed. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

BEGINNING OF SOWING	F	%
2 nd fortnight of September	2	5%
2 nd fortnight of October	2	5%
1 st fortnight of November	10	24%
2 nd fortnight of November	2	5%
1 st fortnight of December	10	24%
2 nd fortnight of December	11	27%
1 st fortnight of January	4	10%
Total	41	100%

Table 5. Number (F) and percentage (%) of answers on the moment of the beginning of sowing among the surveyed families. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

Age of the fence use in their area

A high percentage (85%) of respondents say that in their area fences have always been present, a very used expression that refers to remembering fences from childhood with his grandparents. There is a smaller percentage that remembers fences for more than 5 years (10%), and a minimal amount remembers it as a recent practice (5%).

Origin of the labor that works in the fence

The fence is a family activity, since almost all its members collaborate in these tasks (99%). Only in special cases ex-

BEGINNING OF SOWING	F	%
2 nd fortnight of October	1	2%
2 nd fortnight of December	4	10%
1 st fortnight of January	15	37%
2 nd fortnight of January	4	10%
1 st fortnight of February	5	12%
2 nd fortnight of February	11	27%
2 nd fortnight of April	1	2%
Total	41	100%

Table 6. Values and percentages of the end of sowing periods in fences among the surveyed families. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

WATER ORIGIN	F	%
Rain	40	98%
Flushing	0	0%
Others	1	2%
Total	41	100%

Table 7. Values and percentages of farmers who use water for their crops, and its source. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

TOPOGRAPHY OF THE AREA	F	%
High	0	0%
Low	39	95%
Others	2	5%
Total	41	100%

Tabla 8. Valores y porcentajes de los terrenos habituales elegidos para la siembra de los cercos entre las familias encuestadas. Dptos. Choya, Guasayán y Río Hondo, Santiago del Estero.

TYPE OF FENCE	F	%
Wiring	9	22%
Natural resources of the region	14	34%
Combination	18	44%
Total	41	100%

Table 9. Number (F) and percentage (%) of the construction types of fences in the surveyed families. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

ternal labour is included. Only one of the surveyed farmers hires someone to help him. This is the case of an old man who lives alone and can no longer perform the heavier tasks,

but who continues with his crops by hiring an outsider and pays him with the salary received after his retirement.

People in charge of the tasks, ages and types of tasks

In fences, 56% of the labour corresponds to adults, who conduct all the tasks. However, 8% only does the heavier tasks related to the preparation of fences and soil before going to the seasonal work circuits in other areas of the country (Tasso, 2001; Ledesma and Tasso, 2011), so that the fence is prepared to receive the rains for subsequent plantings. In contrast, only 3% perform the lighter tasks.

Young people represent 22% of the workforce in fences. Of them, 65% perform various tasks, 29% perform only those that require less effort and the remaining 6% perform heavy tasks.

In fences, the third most important work force is children (13%), 100% of whom perform light tasks such as sowing, carpings and harvesting. Their input is also important in the farm, as they collaborate in the general tasks of the farm and learn the know-how, an ancestral knowledge that transmits generation to generation.

The elderly represent 8% of the workforce in the fence, of which 80% perform only the activities that require less effort and the remaining 20% perform the heavy tasks. One percent of the cases employ labor from outside the family to perform all the tasks. The 41 families surveyed have a total of 60 fences and 117.3 ha. A total of 132 people work in this area, 41 of which are women (30%).

Destination of the production of fences

Ninety percent of the production is used for family and animal consumption. Only 10% of the respondents occasionally sells the surplus that is not consumed. This usually happens when the environmental conditions of the period satisfy the crops' requirements and therefore abundant productions are obtained.

Adversities of the fence

According to the surveyed farmers, the most important problems are droughts (81%) and insects (73%). In contrast,

SOWN SPECIES	F	%
Corn + Cucurbitaceae	32	78%
Corn + Cucurbitaceae + Others	8	20%
Other	0	0%
Cucurbitaceae	1	2%
Total	41	100%

Table 10. Number (F) and percentage (%) of the species usually sown in the polycultures of the fences of the families surveyed. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

CORN SEEDS	F	%
Purchased	9	23%
Provided by a state program	9	23%
Own harvest	22	54%
Total	40	100%

Table 11. Values and percentages of the origin of the corn seeds commonly used in the sowing of polycultures in the fences of the families surveyed. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

CUCURBITACEAE SEEDS	F	%
Purchased	3	7%
Provided by a state program	4	10%
Own harvest	34	83%
Does not sow	0	0%
Total	41	100%

Table 12. Values and percentages of the origin of the Cucurbitaceae seeds commonly used in the sowing of polycultures in the fences of the families surveyed. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

problems considered as minor are the animals (24%), the non-viable or bad seed (15%) and weeds (12%). The damage caused by animals refers to them trampling and foraging the crop. For the farmer, the expression bad seed encompasses any type of emergence problems, for example low germinative energy, low germinative power, and attacks by pests (insects, pathogens), among others. No problems (0%) such as the lack of manpower to work the fence were mentioned, nor problems of soil fertility (nutritional and structural).

DISCUSSION

Tables 1, 2, 14 and 16 refer to the number of families, the age of the fences used by producers, the age of this practice in the area and the participation of children, respectively, within the studied area. This shows that the production of associated crops under the above described modality is a generalized practice (93%). In the province of Santiago del Estero, studies have been reported from different rainfed areas, which show that the fence is a crop production system disseminated among peasant families (Tasso, 2001; Desalvo, 2011; Paz et al., 2008).

However, the number of producers using fences is not similar in all rainfed areas, as in the case of the Villa Atamisqui area, where a large part of the family labor is dedicated to seasonal extra-family labor and seasonal migrant labor, and, to a lesser extent, to the use of fences in crops. On the one hand, the labor force from outside the study area is smaller, which is used in agricultural and livestock farms in the area. Some of the family members work at the local

SOWING COMBINATIONS		F	%
Broadcast strips	Contiguous or next-to-each-other sectors, where seeds of the different species do not mix, but are sown broadcast.	2	5%
Stripes in lines	Contiguous or next-to-each-other sectors, where seeds of the different species do not mix, but are planted in lines.	12	29%
Interleaved broadcast	The species included in the polyculture are planted together broadcast.	9	22%
Interspersed in lines	The species included in the polyculture are planted together in lines. In addition they can be together "in the line" or "interleaved lines" (here it was counted without discriminating these combinations).	18	44%

Table 13. Number (F) and percentage (%) of the types of sowing of the polycultures in the fences of the surveyed families. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

DO YOU REMEMBER SINCE WHEN FENCES ARE IMPLEMENTED IN YOUR AREA?	F	%
Less than or equal to 5	2	5%
Over 5	4	10%
"Since always"	35	85%
Total	41	100%

Table 14. Values and percentages of the age of the practice of the fence in the areas of the families surveyed. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

ORIGIN OF THE LABOUR WORKING IN FENCES	F	%
Family	40	98%
From outside the family or employee	1	2%
Total	41	100%

Tabla 15. Valores y porcentajes del origen de la mano de obra que trabaja en los cercos de las familias encuestadas. Dptos. Choya, Guasayán y Río Hondo, Santiago del Estero.

Municipal Commission, and work daily on their crops and fences when they return from work (Rueda C., pers. com, November 28, 2009).

On the other hand, the results show that is is an ancestral practice (95%), which coincides with Tasso (2001), with current validity and with knowledge that is transmitted to children through participation in the daily activities of the system, agreeing with what was mentioned by Ledesma and Tasso (2011).

The total number of members of the surveyed families working in the fences is 131. If we consider the CNA 2002 (INDEC, 2002), which states that the average number of members of a typical rural family in Santiago del Estero is

5, we can say that the fence consumes 64% of the family workforce. This indicates that the fence occupies in total the majority of the members of the peasant family at different times and with different roles and degrees of participation (Table 16).

All the fences of the surveyed peasant families are protected by a perimeter fence to avoid damage caused by the entry of reared and wild animals. This perimeter fence is built using different materials that can be summarized as: from resources of the surrounding forest, wire and wooden rods, or different percentages of the combination of the previous two (table 9).

Families have between 1 and 3 fences, with the highest percentage corresponding to families that have one fence (Fig. 1). Of the families that have 1 fence, 46% builds the perimeter fence with a combination of wiring and branches or other elements extracted from the forest, 35% makes the entire fence using spiny branches and other resources of the mountain, and 19% builds it with wire and rods (Fig. 2).

The families that have 2 fences use 45% of the mountain resources, 36% use wire and 18% combine these two resources. Finally, families that have 3 fences use resources from the mountain and wiring in different proportions (Fig. 2). In the latter case we can infer that their level of capitalization is higher, so that the fence is always present in the construction of the perimeter fence to the extent that their income allows, and is completed with resources from the mountain.

On the one hand, the most used and traditional combinations are those that include corn and cucurbits. This is because of the use to which are destined: human self-consumption and the animal feeding (cows, goats, pigs, chickens and others) (Table 17). On the other hand, they use local varieties, which are adapted to the semi-arid agro-ecological environment, which allows them to minimize the risks of crop losses (Tables 11 and 12), corroborating the results obtained by Ledesma and Tasso (2011).

During the rainy season water begins to accumulate in the soil profile from the first fortnight of October and ends in March, so there are no winter crops in the fences. When

AGE GROUPS	F	%	TASKS PERFORMED AT THE FENCE	F	%
5-12 years: children	17	13	Heavy tasks (maintenance of the fence, preparation of the soil)	0	0
			Light tasks (sowing, harvesting, harvesting)	13	100
			All tasks	0	0
13-21: young people	29	22	Heavy tasks (maintenance of the fence, preparation of the soil)	1	6
			Light tasks (sowing, harvesting, harvesting)	5	29
			All tasks	11	65
22-60: adults	75	56	Heavy tasks (maintenance of the fence, preparation of the soil)	3	8
			Light tasks (sowing, harvesting, harvesting)	1	3
			All tasks	34	90
Over 60: elderly	10	8	Heavy tasks (maintenance of the fence, preparation of the soil)	2	20
			Light tasks (sowing, harvesting, harvesting)	8	80
			All tasks	0	0
From outside the family	1	1	Heavy tasks (maintenance of the fence, preparation of the soil)	0	0
			Light tasks (sowing, harvesting, harvesting)	0	0
			All tasks	1	100
Total number of people working in 41 families, in 60 fences.		132			

Table 16. Values and percentages of the tasks performed by people working in the fences, discriminated by age group and source of the labor that works in the fences of the families surveyed. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

DESTINATION OF PRODUCTION	F	%
Autoconsumo familiar	0	0%
Family self-consumption	0	0%
Animal self-consumption	37	90%
Self-consumption F + A	4	10%
Self-consumption + sale	0	0%
Only sale = 4	41	100%

Table 17. Values and percentages of the main destinations of the products produced in the fences in the families surveyed. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

the sowing period is integrated with the historical distributions of rainfall in the area (Fig. 3), it is evident that most of the surveyed farmers (90%) plant from the first fortnight of November until the second fortnight of February, a period which coincides with the most abundant rainfall in the area.

When the farmers state that the problem of insects is solvable, they do not refer to the fact that they perform a direct intervention to control them, but rather they say: "Insects go away" as if nature controlled the pests. Possibly they see insects on the crops, and see their damage, but, nevertheless, they can still harvest their food to a greater or lesser extent in response to their needs. A few farmers state they can cure pests using "the word".

Only 15% of respondents report problems concerning non-viable seed or emergence problems of seedlings. This

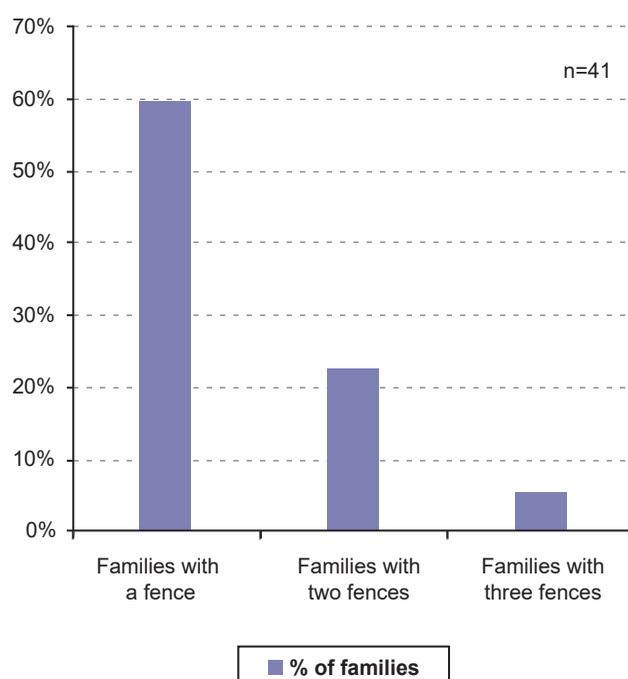


Figure 1. Percentage of peasant families that have 1, 2, or 3 fences. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

is because they usually use seeds selected from their own crops (criolla), which ensures adaptation to the agroecological conditions of the area and their needs.

ADVERSITIES	MANIFESTED AS A PROBLEM (%)	MANIFESTED AS SOLUTIONS (%)	MANIFESTED AS UNSOLVABLE (%)	DO NOT MANIFEST (%)
Bugs (insects)	73	68	5	27
Weeds	12	78	22	0
Animals	24	20	2	78
Seed not viable	15	12	2	85
Lack of labor	0	0	0	100
Drought	81	0	81	20
Poor land	0	0	0	100

Table 18. Number (F) and percentage (%) of the main adversities manifested by the surveyed peasants. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

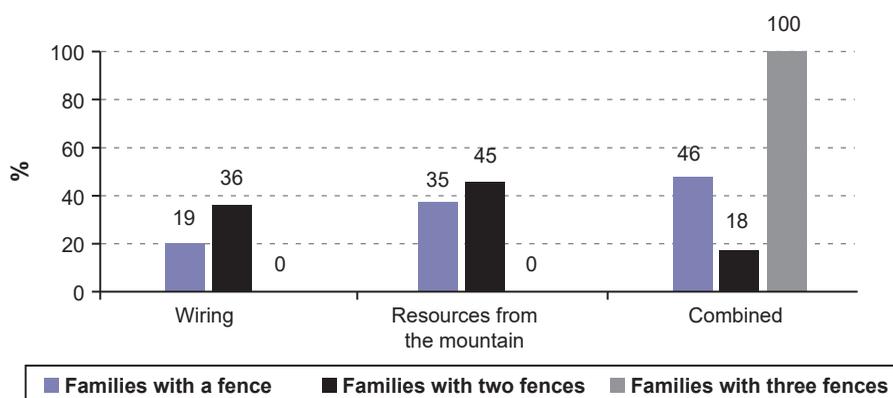


Figure 2. Percentages of fences with different types of perimetral fences according to the total fences per family. Dept. Choya, Guasayán and Río Hondo. Santiago del Estero.

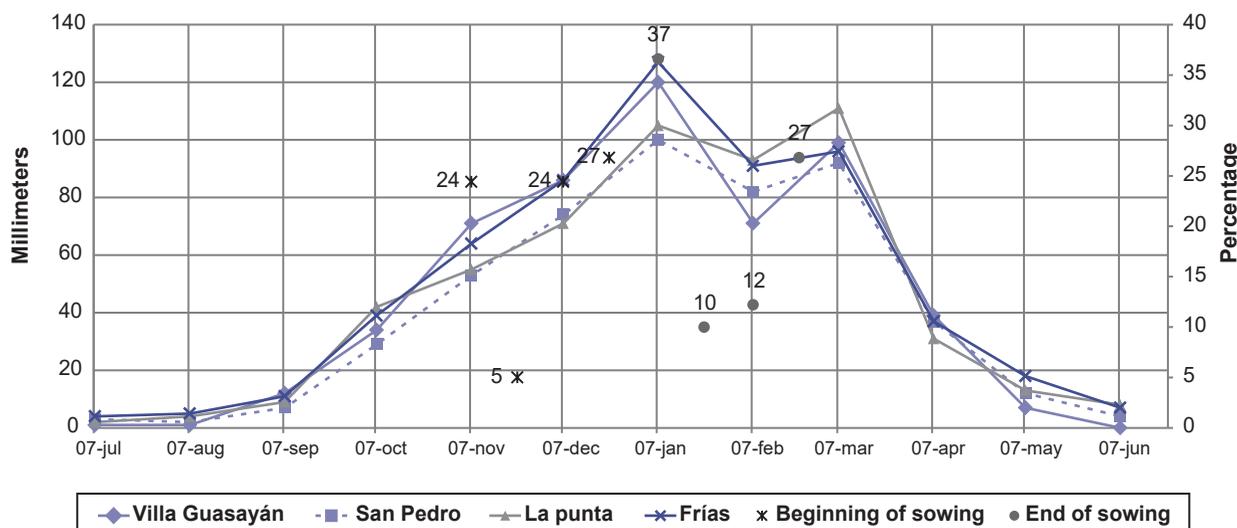


Figure 3. Historical distributions of rainfall (mm) in four locations of the surveyed area and the main dates of Beginning and End of sowing in the fences of the surveyed families. Dept. Choya, Guasayán and Río Hondo, Santiago del Estero.

CONCLUSIONS

The fence is a polyculture system disseminated among peasant families in the rainfed areas of the province of Santiago del Estero,, although with different magnitude according to the area. Its cultivation occupies the majority of the members of the peasant family, who know how to manage it and how to do it, since knowledge is transmitted through generations in an ancestral way.

Lowlands are always chosen to build fences as the receive rainwater from neighboring land and ensure maximum uptake. The system has a perimeter fence that delimits it, where the combinations of resources of the mountain - such as plants and spiny branches - with sections of conventional wiring prevail.

The crops planted in the fences include predominantly corn and cucurbits, sown in polycultures that can vary between plantings in strips or interspersed lines.

The use of variety seeds, especially criollas and in polyculture arrangements, is adapted to the local semiarid conditions and thus ensure stable production values. The sowing period coincides with the most abundant rainfall in the area.

In short, the peasant family uses the fence for the production of self-consumption as part of their integral strategy of reproducing their way of life (Periódico Acción, 2011), thus contributing to the persistence in their places of origin.

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