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A PROPOSAL FAMILY RABBIT-BREEDING IN AGRICULTURAL POPULATIONS WITH LOW ECONOMIC RESOURCES FOR LATINOAMERICA.

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Abstract.

The purpose of this paper is firstly to promote and arise interest in rabbit-breeding for family self-availability of animal proteins (agricultural family programme) and secondly, to promote the surpluses sale and the growth and economic development of the activity (agricultural small-company programme).

In most Latin American countries the following problems are observed (4):
Diet: high child malnutrition, lack of animal proteins in the daily diet.
Land holding: high smallholding ratio, high leasing level.
Population: high unemployment ratio, youth migration to big urban centres, high incidence of informal labour market.
Economy: high competence and low profitability in traditional productions (subsistence economy), high indebtedness rate.
A great number of development programmes have been tried on these countries. Most of them failed for various reasons -lack of training in the handling (appearance of diseases and death), lack of resources for their maintenance (they die or they are eaten), not very productive animals, lack of technical advice.
The exploitation and breeding of rabbits, even in these countries with little or no tradition in this, can solve these problems by means of family group´s work, training and credit lines.

Advantages of rabbits over other species. (3)

* Low land and capital requirement.
* High quality products and byproducts diversity.
* Rustic, precocious and very prolific species.
* Short production cycles and quick return of the invested capital.
* It does not compete with man as regards food consumables.

Social actions.

Agricultural family programme (AFP).

Economic technical-practice teaching and training “in situ” at three levels with programmes developed for this model.

Schooling level: to arise interest and guide the student in classes and/or meetings in agricultural schools; promote the creation of rabbit-breeding hobby clubs by schools or promotion centres, to develop exhibitions with rabbit-breeding contests.

Community level: to train parents, housewives and other people interested in production and breeding techniques and in the different ways of preparing meals with rabbit meat through community centres, promotion centres, cooperatives or other forms of associaton.
To promote the creation of associative forms.

Teaching level: to have professionals and programme technicians train advisers (new professionals and students of agricultural courses of studies) and social workers for technical support and diffusion of the working plan.

Agricultural small company programme (ASCP). (2)

Training in agricultural business administration techniques, marketing and commercialization at two levels.

Community level: to train the interested people who have joined the programme in accountancy and agricultural company administration techniques, commercialization channels and sales.

Teaching level: to have professionals and technicians train the advisers and the people in charge of the formulation of rabbit-breeding projects, company administration and management, marketing and rabbit commercialization in areas, regions or productive corridors.

Resources.

Technical.

Official organisms professionals and technicians and NGO.

Responsibilities:
Planning, launching and direction of the programme.
Selection and training of advisers and social workers.
Assessment of regional projects and social workers and advisers´ reports.

Advisers and social workers.

Responsibilities:
Training and technical advice at the community and school level.
Formulation and assessment of single projects.
Coordination of consumables purchase and group surpluses sale.
Creation and coordination of community groups and associative forms.

Preparation and raising to the programme direction of the development report of the productive agent´s programme.

Economic: The programme will have to foresee the financing of the first (AFP) and the second (ASCP) stages per productive unit depending on its objective and characteristics.

Total: enough for the implementation, launching and purchase of infrastructure and consumables during the first six months of the project.

Period: being a cyclical activity a minimum period of 36 months with 12 months of grace for the AFP and 60 months with 12 of grace for the ASCP will be necessary.

Tax: depends on the zone, region or productive agent but in all cases it is subsidized by the State.

Commission: 3% on effective loan used for financing of the training and technical advice programme.

Programme duration.

Agricultural family programme:

*School and community level: 10 to 40 hours of theoretical-practical classes.
*Community level: 12 months of technical advise and monitoring of the programme, with adviser and social worker´s weekly visits and a monthly group meeting to field.
*Teachers´ level: 60 hours of theoretical-practical classes with 6 annual training days.

Agricultural small company programme:

*Community level: 40 to 60 hours of theoretical-practical classes with 24 months of technical advice and monitoring of the programme including the adviser´s fortnightly visit and a bimonthly group meeting to field.
*Teachers´ level: 60 hours of theoretical-practical classes and a bimonthly training day.

Installations: Construction of a roof protecting from direct sunrays and rain, made of a base of vegetal materials and/or fibrocement sheets, metallic sheets, pressed cardboard, zinc sheets, etc; with reed, plastic, straw bales protection on one or both sides in the event of dominant and cold winds. The whole will be protected with a metallic mesh against predators.

The covered zone will be of 6m x 4m (24m2) with 3 m minimum height and a 20% slope. Capacity for 20 cages of 0.50m x 0.80m (0.40m2) displayed on a single floor, in double row (2 rows of 10 cages), built with wood and metallic rhomboidal mesh, with top opening. (1) (5)

Breeders: 10 females and 2 males of adapted breeds for each zone. (1)

Handling: Groups of 4 females will be formed to be presented to the males on that same day. One male service per female is to be expected.
To improve the receptivity of the female and ensure the viability of the breeding (less mortality), food support will be given to the females. A handful of fresh green fodder (alfalfa) will be given to each female especially from delivery to covering, and during the three days before leaping. There will be controlled suckling (biostimuli); for that purpose, from the 24 hours after the delivery, until day 9, the access of the female to the nest will be controlled, once a day, 30 minutes maximum in the morning. On day 10 after delivery, it will not be permitted for the female to suckle the young rabbits; on day 11 after the suckling, the female will be presented to the male for the service.

For each 4 female group (bands), 3 positive palpations will be made and practically 3 deliveries. Every 14 days, a covering group will be presented, as in each group there remains an empty female, it will be covered in the subsequent group. The palpations of each group are made previously to the covering of the corresponding group, and nest locating will be made on the same day for the corresponding group.

The females will deliver an average of 7 rabbits, and it is possible to adopt to equal the breeding number per female. 20% mortality is foreseen from birth to wean, weaning 17 rabbits per band. The weaning will be belated to secure life after the weaning.

From weaning to death a 12% mortality is foreseen, resulting in 15 rabbits. The fattening period will be of 8 weeks maximum, depending on the length of feeding, sanitary state and animal genetics. (1)

Feeding: The females will be given a good fodder, alfalfa for example, from nesting to delivery. From this moment to the 18 subsequent days, concentrated balanced food , rich in proteins and energy will be given; in case of not having balanced food, from the day 8 of gestation until delivery, green fodder, hay and grains will be administered. Balanced food and dry fodder will be given to the fattening animals, avoiding green fodder.
The diet is completed with clean fresh water permanently available for all the animals. (1) (2)

Rechanging of breeders: the rechanging of breeders will avoid consanguinity and guarantee productivity. The female breeding of prolific females that are not fearful and construct good nests will be separated. From these separated females, there will be a selection of the heaviest females with good body development during suckling period, and those who after 30 days of birth have a daily gain of weight over 32 grams. These can be the future breeders. The males will be always acquired outside the premises. (1)

Sanity: Cleaning of cages, nests, drinking and eating vessels with water and detergents, and its subsequent disinfecting.
Vinegar will be administered at a rate of 10 ml per litre of water and fibrous hay, to avoid digestion problems.
Auricular mange will be treated with mite products or sulfur and oil.
The bed of the nest will be made of hay, shaving, straw, paper, rice peel, always sprinkled with sulfur, to control ringworm.
2 or 3 days before labour the females will be induced to laxative action with food that is

rich in non digestible fibre.
Breeders will have a nematode parasite checking twice a year; 4 times a year against coccidiosis; with permanent veterinarian control. (1) (2)

Registers: There will be an individual file for each breeder, with the following minimum data: date of service, No of male, palpation, labour date, No of animals born alive and total born, date and weaning quantity. (5)

Number of cages

10 females	10 cages
2 males	2 cages
64 young rabbits	8 cages

Handling

Service	11 days after labour
Palpation	14 days after service
Nesting	28 days after service
Denesting	25 days after labour
Weaning	35 - 40 days after labour

Productive parameters

Born alive/ labour/ average	7 young rabbits
Mortality at suckling period	20%
Mortality at fattening period	12%
Fattening period	6 - 8 weeks
Receptivity	75 - 80%
Final weight	2.000 - 2.300 kg
Average daily gain while suckling	More than 32 gr.

It has been agreed to elaborate a programme with a double objective: social and productive.
The social programme benefits from the advantages of the rabbit and intends to obtain animal protein among the populations with lack of or low economic resources through a series of actions directed to the training of different society levels: schools, families and teachers. All this to secure implantations with technical criteria that guarantees the viability and attainment of results.

The productive programme intends to adopt the steps towards a rational and modern management aiming at productive security and regularity and even to progressive growth.
The present exposition is aimed at the development of rabbit-breeding in zones or countries with little tradition in breeding and exploitation of rabbits for meat directed to a profitable practice for any economy, be what its future orientation were, though the starting point or common factor should consist in the acceptance of rabbit meat as an appreciated product in family meals.
Therefore, it will be advantageous to know and promote how rabbit meat is cooked and what its dietary characteristics are.

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