A.I. IN RABBIT BREEDING: NOTE N° 1: A.I. SERVICE FOR MEAT RABBIT BREEDINGS

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Introduction

. Many works deseribe in details the A.I. on rabbit, but only a few speak

about the A.I. in field application (Schlolaut, 1985 Sinkovics, 1983) in

commercial meat rabbit breedings.

Schlolaut (1985) stresses the numerous advantages of the A.I. and hopes that

this technique could be done by a "mobile team" together with technical as-

sistence.

Sinkovics too refers that in the meat (1983) and Angora (1985) rabbit A.I.

is personally done with good results.

In some italian regions at intensive rabbit breeding there are many full-ti

me farms whioh adopted the weekly-cycled production that is perfect for the

A.I. (Facchin et al.,1987).

Basing on the suggestion found in the references and on the italian produc-

tive reality we are stimulated to promote a "meat rabbit breeding A.I. ser-

vice". The Service has been planned according to the following characteri-

stics and aims:

- it is applied only in meat production and the insemination has no genetic

  targets.

- it should be realized and done by a private Center with payment by the

  breeder: and this to allow the evaluation of technical-economical effi-

  ciency of the service.

- it should be divided in two different phases, both under veterinary con-

  trol: a) production and control of the semen in a specialized center b)in

semination at every breeding's address.

We choose this because:-the production of a unique center can better guarantee the standardization in evaluating bucks and their ejaculates (see Note N° 2,1988) - the insemination under veterinary control gives a better standardization of the method and assures a better technical assistence (see Note N° 3,1988).

According to our suggestions rised and started to operate an A.I. center in Verona province.

Materials and Methods

On February 1986 the A.I. service started to work with the following programm:

- In the Center: production, evaluation, dilution and storage of semen according to Paufler's technique (1985).

    Bucks for semen production are selected on the basis of their sanitary conditions. Ejaculates from each buck are collected. Only those with good characteristics are diluted 1:8 in a tris buffered solution + egg yolk + antibiotics and individually stored in a sterile bottle at + 5°C.

    Each buck and his ejaculate is evaluated according to the following parametres: libido; collection rythm; quantity, colour, density and motility of semen; N° of inseminated does; N° of pregnancies; N° of deliveries; N° of born-alive/delivery. (see Note N° 3,1988).

- In each breeding: the ejaculates of different bucks, after a max. storage of 24-36 hours, are used at 0.5 ml dose by Practicioniers. The Veterinarians work together with the breeder that chooses and keeps the does to be inseminated. The does with sanitary problems are not inseminated. A sterile pipette is used for each doe. The ovulation is induced by GnRH i.m. at the insemination, at the dose of 20 microg/head. The Practicioners fill a card with all insemination data (see fac-simile):

BREEDING...........................ADDRESS................................

D.V.M...................DATE...........REPETITION OF SERVICE...............

HORMONE GnRH....YES....NO....OTHER HORMONE.....YES....NO....WHICH?.........

TREATMENTS BY THE BREEDER.........YES....NO....WHICH?......................

BREED OF ANIMAL.............................FEEDING.......................

NOTE..

Progr. N°	Doe N°	Buck Breed N°	Delivery A.I. days	Days from-mating	Pregn. + or -	Deliv. Date	N° born alive	N° of weaned	Weight mean weaned
1									
2									
3									

In an elaboration Center: with data collected in each breeding a classifi-
cation of bucks is done.

Bucks with estimated fertility lower than 60% and prolificity lower than
6 born-alive/delivery are discarted from semen collection.

During 1986 we inseminated 9,152 does in 15 breedings situated above all in
North and Middle Italy; all the inseminations have been done by Veterina-
rians.

During January - October '87:

- Veterinarians performed 9,105 inseminations in 25 different breedings

- a Breeder performed 2,129 inseminations only in his own breeding, where
  a veterinarian showed the A.I. technique 3 times, and after the breeder
  inseminated alone for 19 times (see tab. N° 3). In this breeding all the
  bucks have been sold and the meat production is based only on A.I.

  All together, in 1986-87, 20,386 services have been performed in 41 dif-
  ferent breedings.

Results

Preliminary results obtained in 1986 are shown on Tab. N°1.

On Tabs. N°2 and 3 are respectively reported the results obtained during 1987 by Practicioners in 25 different breedings and by one breeder in his own breeding.

The average is about 60 A.I./hour; but the mean number is strongly influenced by the characteristics of the breeding and breeder and goes between a minium of 35/hour to a maximum of 85/hour.

Discussion and Conclusions

This is the first time that in Italy A.I. is used in meat rabbit production as in field technique on a quite large scale.

The preliminary results obtained in '86 have not to be considered satisfactory even if they are not far from results by Battaglini et al. (1982) and they are a little lower than those by Vrillon et al. (1979) in an experimental center, during a period of 3 years.

Preliminary results (1986) detect that "breeding factor" (*) is very important and that technical parametres can widely vary from a minimum 29% pregnancy to a maximum 83%.

That means optimum increasing possibility.

The results obtained in 25 different breedings during 1987 are better and more homogeneous and are similar to those obtained by Battaglini (1982) during 1975-80 on 908 services.

In our opinion the 1987 better results are due to:

- better standardization of evaluation-selection of bucks and better collection techinique, control, dilution and storage of semen.

- better standardization of A.I. method and more severe control of does to inseminate.

In a commercial breeding the meat production in the worse season has been obtained only by A.I. and the results have been satisfactory for the breeder.

(*)"Breeding factor" is mainly determined by genetic characteristics of the animals, by feeding, management, environmental conditions of a single breeding.

We can imagine that, during the whole year,better performances can be rea-

ched, similar to those obtained by Paufler and Schlolaut (1979) with more

than 70% pregnancies and more than 7 born-alive/delivery.

The experience up to now ripened make us to say that A.I. is a trusting

technique that can be routinely used and will spread more and more.

The programm to concentrate the production and control in one center, as

suggested by Battaglini too (1982) seems to be right because it allows the

use of a unique standardized method.

This would be much difficult if each breeding should do semen collection

and control work.

We can think that in the future the breeders too can perform A.I., but only

under veterinary control. This will allow a good technical assistence ser-

vice.

The possibility to use frozen semen will increase the A.I. diffusion and,

even with higher costs the economic results will go up for the breeder

and guarantee for the semen will be higher.

Therefore it is possible, for the moment, to have an A.I. service using

refrigerated semen stored for max. 24-36 hours if there are efficient

transports, facilities and infrastructures. Concerning the use of refrige-

rated semen our results are better than those by Roustan(1982) but theyy

are not so good as those by Stranzinger e Paufler (1971).

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TAB.N°1:Preliminary results
of A.I. done in 15
different meat rabbit
breeding during 1986
(Kindly supplied by Lapival
s.r.l. -S.Giovanni Lupatoto-
Verona-Italy).

N° Progr.	Mean % pregnancy
1	67%
2	31%(*)
3	45%
4	29%(**)
5	83%
6	66%
7	52%
8	59%
9	55%
10	83%
11	67%
12	82%
13	67%
14	65%
15	60%

Mean's average 60.7%

A.I. services performed N° 9,152
Pregnancy N°   4,289

Absolute mean of pregnancy = 46.8%

(*) Very bad sanitary conditions
(**) All nulliparous and very
young does.

Tab. N.2:Results of A.I. performed
by Pratictioniers in 25 different
meat rabbit breeding from 1/1/87 to
31/10/87 (Kindly supplied by Lapival
s.r.l. -S.Giovanni Lupatoto-Verona
Italy).

N.Progr.	% mean of pregnancy	N. born-alive pregnancy
1	60.8%	6.3
2	69.7%	7.1
3	65.7%	7.8
4	69.0%	6.5
5	47.3%	6.3
6	69.5%	6.5
7	61.2%	6.9
8	71.0%	7.3
9	78.3%	8.2
10	59.1%	6.8
11	86.6%	8.2
12	52.8%	7.1
13	53.9%	7.3
14	63.0%	7.2
15	73.3%	7.8
16	49.4%	6.9
17	46.9%	6.8
18	59.3%	7.1
19	48.8%	7.0
20	86.2%	10.1
21	68.6%	7.1
22	44.6%	7.9
23	63.3%	6.8
24	75.8%	7.1
25	63.6%	7.5

Means average=63.5%   7.3

A.I. Services performed N°9,105
Pregnancy N°   5,804
Absolute mean of pregnan
cy = 63.7%

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Tab. N° 3: A.I. results in a commercial meat rabbit breeding. The Breeder
alone performed A.I. services 19 times after a 3 time teaching
by D.V.M.

(Kindly supplied by Lapival s.r,l. and Cunibol s.n.c.)

From April 8th to October 30th, 1987.

Progr. N°	N° does inseminated	N° does pregn.	% pregnancy	N° born alive/ delivery	Born dead %	N° weaned delivery
1	107	84	78.5%	6.8	12.8%	6.7
2	118	84	71.1%	6.5	9.6%	6.4
3	120	92	76.6%	6.6	9.2%	6.4
	345	260	76.1%	6.6		6.3
4	120	71	59.1%	5.0	16.8%	4.5
5	111	83	74.7%	6.7	11.4%	6.3
6	111	75	67.5%	7.0	12.6%	6.5
7	72	54	75.0%	6.8	9.2%	6.2
8	126	88	69.8%	7.3	7.2%	6.8
9	89	65	73.0%	7.6	8.6%	6.75
10	88	67	76.1%	7.5	9.4%	7.1
11	110	82	74.5%	8.2	8.3%	6.9
12	87	58	66.6%	8.7	8.1%	7.7
13	91	62	68.1%	7.8	12.5%	7.7
14	85	53	62.3%	7.1	10.2%	6.1
15	117	60	51.2%	6.8	8.9%	5.9
16	70	48	68.5%	7.2	6.3%	6.6
17	98	65	66.3%	6.9	9.8%	6.2
18	66	48	72.7%	7.5	6.3%	6.6
19	85	63	74.1%	6.7	5.2%	6.3
20	60	44	78.7%	6.3	5.3%	+
21	99	61	61.6%	−	−	+
22	99	48	48.5%	−	−	−
AMOUNT MEAN	2,129	1,455	68.3%	7.0	9.4%	6.5

A.I. IN RABBIT BREEDING:

NOTE 1 - ARTIFICIAL INSEMINATION SERVICE FOR MEAT RABBIT BREDINGS.

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SUMMARY

        The advantages due to the use of Artificial Insemination favoured
the raising and the operation of a A.I. private service in different parts
of Italy where large size intensive rabbit breedings are situated.
        The service, started in 1986, to facilitate and standardize the con-
trol of sperma and insemination is divided in two phases:
1 - Production and evaluation of the sperma under Veterinary control in a
    proper breeding center
2 - A.I. at its own breeding, by Veterinarians or Technicians or under
    technical veterinary control.
        In two year's activity 20386 A.I. have been done in 41 breedings
using refrigerated sperma stored for maximum 36 hours.
The results obtained are discussed.

RIASSUNTO

        I vantaggi connessi con l'impiego di Inseminazione Artificiale han-
no favorito il sorgere e l'operare di un Servizio privato di I.A. in al-
cune zone dell'Italia caratterizzate dalla presenza di allevamenti cunico-
li intensivi di grandi dimensioni.
        Il Servizio, iniziato nel 1986, per facilitare e standardizzare le
operazioni di controllo del materiale seminale e di inseminazione, è stato
diviso in due fasi:
1 - Produzione e valutazione del materiale seminale sotto controllo veteri
    nario in apposito centro di allevamento
2 - Inseminazione a domicilio ad opera di Veterinari o Tecnici o sotto con
    trollo tecnico-veterinario.
        In circa due anni di attività sono state eseguite n° 20386 insemi-
nazioni in 41 allevamenti utilizzando materiale seminale refrigerato e
conservato per un periodo massimo di 36 ore.
Vengono riferiti e discussi i risultati ottenuti.

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