Cattle breeding programme of Assam
A Holistic approach

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BACKDROP

- Cattle are most important amongst various species of animals exhibiting substantial growth over the last two decades.
- Most of the cattle of this region are small sized and of non-descript type with low production potential. They mature late and produce 1.0 to 2.0 liters of milk per day with long calving interval.
- The production system followed in rural areas is extensive in nature with cattle being let loose for grazing. Most of the cattle have to subsist on poor quality roughages like paddy and wheat straws supplemented with small quantities of agricultural by products.
- The concept of production of leguminous fodder was not popular in the state.
- The compound feed industry is in its infancy and feeding of concentrate is limited to cross-bred and other high producing animals in milk shed areas.
- To improve rural economy it is essential to improve the quality of existing livestock for higher milk production. The only way to improve the quality of animal is upgrading the existing non-descript cattle with Artificial Insemination.
- Facility of A.I. services was created through A.I. centers of Department of Animal Husbandry and Veterinary much before since 1st Five-year plane.

Genesis of the Cattle breeding programme of the state - Key Village Scheme

- First organised attempt to improve the indigenous cattle for milk production was made during the 1st Five year plan with introduction of Key village scheme in the year 1953-54.
- Under the scheme, genetic upgrading of local non descript cows were tried by distribution of bulls of recognized Indian breeds like Hariana Red Sindhi etc to villages covered under Key Village Blocks.
- This plan helped in very small magnitude in some selected areas only. Moreover, the expected significant increase in production potentiality was not achieved because of low production potentiality of the Indian breeds compared to the exotic breeds.

ICDP & Introduction of Frozen semen

- **Intensive Cattle Development Project (ICDP)**-
- Cattle breeding programme gained momentum in 1968 following the introduction of Frozen semen technology and implementation of ICDP in the state.,
- By the end of 1985-86 It covers 11 nos. ICDP, 26 nos. Regional Artificial Insemination centre (RAIC) and 547 nos. of stockman centre.
- The **Deep Frozen Semen Bank** was established under Indo-Australian Cattle Breeding project at Khanapara, ,commissioned in March/1976 with a view to replace chilled semen with Frozen semen.
- During the year 1983-84, with the assistance of Govt. of India, expansion of frozen semen bank at Khanapara along with setting up to new Frozen semen storage bank of Howly, Kokrajhar and Tezpur were taken up.
- **Constraints -** Under this project as per the National Breeding policy introduction of Jersey semen done but level of exotic inheritance was not defined.

Time to Time infusion of different schemes & present status

- Under **ARIASP** the department has started A.I. with Frozen semen through 7 Frozen semen banks in 15 districts with 513 A.I. centers and 166 Gopal mitras.
- Under World bank project Bull Mother Farm Barapetta was also renovated.
- During the year 2004-05, Assam Livestock Development Agency(**ALDA**) was formed and it renovated the Frozen semen bull station at Khanapara under NPCBB Phase – I as per the standard set by Minimum Standard Protocol(MSP) of Govt of India.
- ALDA introduced A.I. facility to the all districts (including two hill districts and Lakhimpur , Dhemaji, BTAD areas etc) of the state as per guideline of Govt Of India. It introduced A.I. in 300 non A.I. departmental centers with A.I. facilities in 2 phases.
- Recently under Rastria Krishi Vikash Yojna (**RKVY**) the A.I. network has been expanded to total 1275 centers.
- In 2015 ALDA started a new state of the art **Frozen semen bull station(FSBS) at Barapetta**, which is the only A graded ISO certified semen station in the NE region.
- **Presently under ALDA the state has 1 FSBS, 15 Frozen semen banks with bulk LN silos, 2 Bulk LN Transport tankers, 22 LN distribution vans and about 850 functioning AI centers**.

Genesis of the Cattle breeding policy of the state

- **Modification of earlier policy** - Reviewing the result of the cross breeding programme under ICDP the earlier policy was modified in 1980which proposed to produce crossbred by utilizing inheritance from three different breeds. Crossing among Jersey (J), Red Sindhi (RS) and Local (L) to generate a population of cattle of 50% J, 25% RS & 25% L inheritance to incorporate high yield of Jersey and draft ability of RS & L.
- **Constraints :-**
- Necessity of maintaining 3-phase breed type of J, RS & L and their crosses.
- Necessity of separate PT programmes for above genetic groups.
- Non-availability of quality germ plasm of RS in particular.
- Too complex and expensive.

Present Breeding Policy

- After review of the 1980 policy with three breeds, a revised Breeding Policy was established in the year 1998 with the cross breeding of Exotic jersey of high genetic merit with non-descript cattle of Assam to produce cross bred cattle with level of exotic inheritance (J) at 50% in major areas and 62.5% in some selected areas.
- **The second & revised breeding policy was notified in 30th December, 2002 vide Govt. notification No. VFV. 255/2002/pt/23 Dtd. Dispur, the 30th Dec/2002.** This policy is relatively simple than the previous one as only two pure breed line is to be maintained and will be continued for 20 years.

Basic of the CATTLE BREEDING POLICY

(A) Policy for milk production: Upgrading of local low productive non descript cows by **Jersey** and **Holstein Frisian**(HF)through Artificial Insemination programme

Breeding policy using Jersey :

Level of exotic inheritance-	
50%	**62.5%**
➢ **This will apply to the entire state.** ➢ Large scale production of halfbreds (50 per cent Jersey 50% per cent Indigenous) will be the main goal.	➢ **This will be done in a limited scale** ➢ On demand from farmer in some areas/ herds, where there is plentiful of fodder availability, good market channel, educated entrepreneur with knowledge and capability for providing better management

Breeding policy using Holstein Friesian :

- Holstein Friesian (HF) inheritance will be infused only in limited scale
- In some defined geographic areas / herds where fodder production and its availability is more, a well developed milk market and in areas of high elevation with congenial climate, desired by the farmer.

The level of inheritance of H.F. in the crossbred will be fixed at 50 per cent by intense mating of the crossbreds coupled with selection of superior F_1 animals.

Policy for Draftability

(B) Policy for draftability : There are three policy options for improvement of draft power in the state.

(i) Policy for using Jersey halfbred (and graded) male :

The Jersey halfbred bullocks (Jersey x Indigenous) have higher draft capacity for shorter working hours than the local ones.

(ii) Policy for using indigenous bullock:

The policy aimed at improving the draftability of indigenous cattle by selection and animal production and indigenous germplasm conservation to support this traditional system of draft animals utilization.

(iii) Upgradation of local cattle by pure India breed(s):

This upgradation programme aims at increasing both draft and milk production ability.

Buffalo Breeding Policy

The buffalo population of the state is primarily of swamp type distinctly different from the riverine breeds not only in behaviour but also in respect of chromosome numbers. . Though, in regard to milk yield, these buffaloes are not at par with those of improved riverine breeds, the milk of the swamp buffaloes is very rich in fat and protein content.

(a) Straight breeding of swamp buffalo with selections:

Improvement in the genetic potential of indigenous swamp type buffalo of Assam is done by selection and straight / pure breeding.

This breeding policy of indigenous swamp buffalo of Assam will fulfill three basis requirement. These are –

a) Conservation of germplasm
b) Meeting a major part of the draft animal requirement for agricultural activities
c) Augment production of quality milk.

(b) Pure breeding of Murrah :

Murrah and Surti were found to have performed satisfactorily under organized farm environment in the agro-climatic conditions of Assam. Educated entrepreneurs and well to do farmers may be encouraged to rear these two riverine breeds in scientific manner under intensive system of management. The sate Govt. will maintain at least one elite herd of each of Murrah and Surti as a source of germplasm.

(c) Cross breeding of swamp with Murrah:

The possibility of crossing Murrah bulls with swamp female to enhance milk production is kept open due to its chromosomal differences. In absence of sufficient data on the performance and fertility status of swamp x riverine crossbreds, the approach of such a crossbreeding programme has to be cautious. Therefore, initially such a crossbreeding programme will be taken up experimentally in limited scale using the bulls of organized elite herds of Murrah and crossing them to swamp females.

Proposed Amendments of the existing policy

Amendment: In view of present breeding scenario of the state the revised breeding policy were suggested for amendment to incorporate few important requirement such as

A) Establishment of nucleus breeding herd of indigenous cattle

B) Establishment of nucleus breeding herd of outstanding Indian Milch breed.

C) Procurement of semen of outstanding Milch breed like Sahiwal, Gir in limited scale

D) To avoid indiscriminate crossing , in the execution of AI programme, cluster approach is suggested.

E) Establishment of breeders association to augment AI activities.

F) Progeny testing programme should continue with the AI service etc.

For Buffalo :

a) Straight breeding of swamp buffalo with selection

b) Pure breeding of Murrah under intensive rearing system

c) Crossbreeding of Swamp (50 No) with Murrah was suggested.

d) AI in buffaloes reared under intensive system be taken up.

Recommendation

- No animals (cattle and buffalo) will be inducted in to the state without prior permission of the Government. Cattle induction process has to be with in the policy provision. The animals to be inducted in to the state must be free from all important communicable diseases. Provision for proper screening for communicable diseases and quarantine facilities must be created in strategic location. The A.H and Vety Deptt. Assam will have the authority to provide permission for cattle induction after ensuring fulfilment of policy requirements

THANK YOU