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Guest Editorial

“M’Bour ... a year after”

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[Prof. René D. S. Branckaert is an Animal Production Officer in FAO where he has been in charge of small animals since 1990. However he previously worked for many years in various fields of tropical animal production, especially on the short-cycle species. He always encouraged and supported the INFPD activities. He was one of the initiators of our network and, currently, is Member of INFPD Advisory Committee].

The former ANRPD (African Network for Rural Poultry Development) was set up in Ile-Ife, Nigeria, in November 1989 and, since then with meetings in Thessaloniki (1990), Ouagadougou (1992) and Addis-Ababa (1995), it has gradually advanced to arrive at maturity in December 1997. The ANRPD workshop organized in M’Bour (Senegal) in December 1997 represented indeed a key milestone in the existence of the network. During this workshop, it was decided that membership and coverage of the network be extended to other continents (e.g. the Asia - Pacific region and Latin America). In addition, it was felt necessary to involve other institutions such as the World’s Poultry Science Association (WPSA), the Commission of the European Community as well as the Danish Network for Poultry Production and Health in developing countries. Thus, it was unanimously decided to extend ANRPD membership geographically and to develop three sub-networks within the International Network for Family Poultry Development (INFPD). The use of modern technologies to promote information dissemination within the network was also adopted. Moreover, it had been recommended to devote more attention to poultry species other than chickens, taking into account their importance and their adaptability in specific eco-climatic and socio-economic environments. Such are ducks in southeast Asia, guinea fowls in African dry areas, turkeys in Mexico and pigeons in

North Africa.

All these recommendations and resolutions did not remain unheeded. In 1998, most of them were implemented. The bi-annual ANRPD Newsletter, launched in 1991, became the quarterly INFPD Newsletter and is published electronically. The Latin-American and Asian-Pacific sub-networks were initiated in Cali, Colombia, in September 1998 and in Melbourne, Australia, in November 1998, respectively. In June 1998, during a meeting of the WPSA Executive Committee as part of the 10th European Poultry Conference held in Jerusalem, Israel, the INFPD was recognized as a working group of the WPSA. Besides, INFPD was also invited to mount a Satellite Symposium during the 21st World’s Poultry Congress, which will take place in Montreal, Canada, in August 2000. Since November 1998, Dr. E. Fallou Guèye, Editor of the INFPD Newsletter, has been assigned for one year to the Animal Production and Health Division, under the auspices of the FAO Young Professional Officers Programme. He is dealing specifically with the INFPD activities that are technically and financially supported by our Division. In this respect, he initiated, in December 1998, the 1st INFPD/FAO Electronic Conference on Family Poultry which was expected to run for three months, however the duration of this conference has been extended because of the large number of contributions and comments submitted.

Since 1989, the Animal Production and Health Division has collaborated closely with the network and has supported its various activities. Since 1997, family poultry development represents the main activity of the diversification component of FAO's Special Programme for Food Security. Our division is particularly pleased to have contributed effectively to the development of the network; the progress and successes obtained by the network have resulted consequently in considering the later stage, namely the institutionaliza-

tion of the network with the establishment of light permanent structures. With this in view, support from financial institutions will be required. It is important to mention that the CTA (Technical Centre for Agricultural and Rural Co-operation) and the IDRC (International Development Research Centre) have also provided constant and valuable support to the network. If other institutions would join us, this proposal could perhaps be implemented in August 2000 in Montreal!

Research reports

ORIGINAL SUBMISSION

Survey on family chicken farms in the rural area of N'Djaména, Chad

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[Article edited and translated from the original French by E. F. Guèye]

SUMMARY

An investigation on family chicken farms was carried out on 57 chicken farms, located in 10 villages in the rural area of N'Djaména, Chad. It was found that chicks represented 51.2 percent of the flock. The sex ratio was six hens for one cock, and the average flock size per household was 16.3 ± 11.1 chickens. Hatchings represented the most important intakes, while the principal offakes consisted of mortality, sale and predation. The causes of mortality were diarrhoea, ectoparasites and respiratory diseases. The average

mortality rate was 17 percent and the production efficiency 16 percent. Average traits of 125 studied hens were age 19 ± 11 months, weight 1.2 ± 0.3 kg, number of eggs per clutch 10.5 ± 2.8 , number of clutches per year about three, hatchability 79 percent, survival rate of chicks at weaning 55 percent, brooding period 52 days and interval between clutches from 80 to 90 days. Adequate disease control, reduction of chick losses and improvement in husbandry practices are recommended.

Key words: Chad, chicken, family poultry, flock structure, pathology, reproduction

INTRODUCTION

The poultry flock of Chad, officially estimated at 11 million in 1984 (Doutoum *et al.*, 1984), was increased to 24 million birds in 1997 (Abba *et al.*, 1997), representing an annual growth rate of 10 percent. The poultry flock is dominated by the domestic chicken "*Gal-*

lus gallus". Family chicken keeping is a valuable asset for producers, especially in rural areas. It allows peasants to satisfy their unforeseen financial needs. For example, the purchase of cereals in the period of food scarcity is partly covered by income generated from

the sale of birds. Moreover, after sale or barter (very popular in some regions of the country), family chickens contribute to acquire ruminants. Additionally, chicken meat consumption is a significant protein source which helps to cover the nutritional needs of the rural populations (Mopaté *et al.*, 1997a). However, family chicken development in rural areas also has to cope with difficulties related to husbandry, health and production (Provost and Boredon, 1968; Anonymous, 1978; Aklobessi *et al.*, 1992; Abba, 1994; Mopaté *et*

al., 1997b; Guèye, 1998). To collect data on the production and reproductive performances and identify the constraints, a survey was conducted on farms in the rural areas of N'Djaména, Chad. Poultry keepers of this study area have benefited from interventions in poultry disease control provided by the 'Volet Animaux Villageois' (V.A.V.), a component of the 'Appui au Développement de l'Economie Rurale' (A.D.E.R.) project.

MATERIALS AND METHODS

The study was carried out on 57 chicken keepers located in 10 villages in the sub-préfecture of rural N'Djaména. They represented 10 percent of those who benefited from specific technical support provided by the project. Six voluntary chicken farmers per village were randomly selected for the survey, which lasted five months. All chickens of every farmer were taken into account for a collective survey, twice a month. In a flock, at most five hens identified by the plumage and rings were subjected to an individual investigation. The age groups considered were chicks (0 to 2

months), cockerels and pullets (3 to 5 months), hens and cocks (6 months and more). Data on the flock structure, the production and reproductive performances as well as health-related problems were collected. Information on the marketing of birds and eggs as well as the use of the generated income was also gathered. The software "épi info" (Dean *et al.*, 1990) was used to record the data collected after each visit, and the data processing was carried out using the same software.

RESULTS AND DISCUSSION

Flock structure and production efficiency: The number of studied chickens was 1125. The flock structure is

presented in Table 1, on the basis of an equal number of male and female chicks after hatching.

Table 1: Structure of surveyed chicken flocks in the rural area of N'Djaména

Male	Number	Frequency (%)	Female	Number	Frequency (%)
Chicks	288	25.6	Chicks	288	25.6
Cockerels	129	11.5	Pullets	171	15.2
Cocks	36	3.2	Hens	213	18.9
Total	453	40.3	Total	672	59.7

The average chicken flock size per household was 16.3 ± 11.1 , and a sex ratio of 6 hens for one cock was observed. A core of breeding birds is preserved to maintain the chicken flock. Moreover, there were more chicks (51.2 percent of the flock), which confirms previous findings reported in the area of North-Guéra (Mopaté *et al.*, 1995).

The observed hen / cock ratio was double that of North-Guéra (Mopaté *et al.*, 1995). Interventions offered in the N'Djaména rural area tend to stabilize chicken flocks and to persuade farmers to keep high numbers of hens. Moreover, average flock sizes per household were lower than those reported in other

locations; i.e. 27 birds in North-Guéra (Mopaté *et al.*, 1995) and 25 in Eastern-Chad (Mopaté *et al.*, 1997a). The methodology used as well as the period of investigation could partly explain these differences. During the survey, it was recorded that 207 chickens

came into the farms and the number of birds removed from the flocks was 326 (Table 2). The offtakes constituted 29 percent of the total flock and the intakes were 18 percent.

Table 2: Frequencies of intakes and offakes in surveyed farms

Intakes		Offakes	
Item	Frequency (%)	Item	Frequency (%)
Hatching	87.4 (n = 181)	Death	58.3 (n = 190)
Gif	8.2 (n = 17)	Sale	18.7 (n = 61)
Purchase	2.4 (n = 5)	Predation	12.0 (n = 39)
Service rearing	2.0 (n = 4)	Home consumption	8.0 (n = 26)
		Accident	3.0 (n = 10)
Total	100.0 (n = 207)	Total	100.0 (n = 326)

The main predators were wildcats, raptors and snakes. Besides, villages situated near the roads were primarily affected by accidents due to vehicles. Other accidents were those occurring within the homesteads (e.g. fall of an article on a chicken, trampling, drowning of chicks in drinkers).

groups of chickens (Table 3) showed that the chicks undergo significant losses, especially through mortality, predation and accidents. Similar high losses were reported in the traditional farms (Anonymous, 1983). Moreover, the pullets and the cockerels were more exploited in village households. They made up 50 percent of sold birds and 70 percent of consumed ones.

The frequencies of offakes according to the age

Table 3: Frequencies (%) of offakes according to the chicken age in the surveyed farms

Category	Death	Sale	Consumption	Predation	Accident
Chicks	79 (n = 151)	2 (n = 1)	-	95 (n = 37)	40 (n = 4)
Pullets	11 (n = 20)	26 (n = 16)	23 (n = 6)	-	20 (n = 2)
Cockerels	4 (n = 7)	23 (n = 14)	46 (n = 12)	-	30 (n = 3)
Hens	6 (n = 11)	39 (n = 24)	31 (n = 8)	5 (n = 2)	10 (n = 1)
Cocks	0 (n = 1)	10 (n = 6)	-	-	-

The average mortality rate was 17 percent (26 percent in chicks, 5 percent in cockerels, 12 percent in pullets, 5 percent in hens and 3 percent in cocks). Specific interventions in poultry disease control offered to farmers of the study area could explain this low mortality rate.

losses were lower in males (cockerels and cocks) than in females (pullets and hens). This might be explained by the fact that males are more exploited and, thus, are removed earlier from the flocks, whereas females remain longer in the farms.

Furthermore, the average mortality rate and overall The production efficiency rate was defined as the

number of exploited birds to the total number in the

flock, which are more than 2 months old ratio (i.e. excluding chicks, which are generally not exploited). This rate amounted to 16 percent. This is low but acceptable, taking into account the duration of the survey and the existence of peak periods in the year for sales (festivals, foreseen disease outbreaks, etc.). However, annual production efficiencies of more than 90 percent were reported in Chad (Doutoum *et al.*, 1984; Mopaté *et al.*, 1997a).

Economy: The average prices, in F CFA (1 US\$ ≈ 500 F CFA) and by age group, were: 1,100 for pullets; 1,020 for cockerels; 1,200 for cocks and 1,485 for hens. The average price in markets located in the study area was about 1,200 F CFA per chicken. This was higher than average prices reported in markets of North-Guéra, varying from 600 to 700 F CFA (Mopaté *et al.*, 1995). The presence of various middlemen and urban dwellers from the capital-city, the higher purchasing power of the buyers and the reduced offer

of birds all contributed to increase the prices.

The sale of 61 chickens generated 75,000 F CFA for the poultry keepers. This amount was used as follows: 40 percent for the acquisition of usual domestic goods (soap, tea, sugar, oil, condiments, etc.), 30 percent for the purchase of clothes and shoes, 20 percent for the business and 10 percent for purchasing other chickens. These results confirm those reported by Mopaté *et al.*, 1997a. The two main reasons for consuming chicken meat are the special banquets for family guests (70 percent) and the usual home consumption.

Health problems: Principal symptoms (Table 4) observed by farmers, prior to the death of their chickens, are given in Table 4. There is a high prevalence of ectoparasites, diarrhoea and nasal flow.

Table 4: Frequencies (%) of observed symptoms prior to the death of chickens

Symptoms	Chicks	Pullets	Cockerels	Hens
Ectoparasites	33.3	20.0	33.4	-
White diarrhoea	16.6	-	-	-
Yellow diarrhoea	16.6	20.0	33.3	33.3
Green diarrhoea	11.1	40.0	33.3	33.3
Red diarrhoea	-	-	-	16.7
Sudden death	5.6	-	-	-
Nasal flow	16.8	20.0	-	16.7
Total		100.0		

The white diarrhoea was observed only in chicks, while the red diarrhoea was noted in hens. In contrast, the yellow and green diarrhoea affected all categories. The white diarrhoea in chicks might be pullorum. Indeed, Mopaté *et al.* (1997b) reported similar symptoms in the central-eastern area with a high mortality rate (68 percent). The red diarrhoea is due to coccidiosis. Provost and Boredon (1968) reported that the local hens in Chad constitute reservoirs of oocysts but are clinically less affected. The yellow and green diar-

rhoeas are the symptoms of infectious diseases such as Newcastle disease, fowl typhoid, fowl cholera, etc. The ectoparasitism constituted a major problem in the surveyed flocks. These external parasites were mentioned by the chicken farmers in North-Guéra as being their second concern after Newcastle disease (Mopaté *et al.*, 1997b).

Reproductive traits: The average age of the 125 studied laying hens was 19 ± 11 months. The average live

weight and clutch number were 1.2 ± 0.3 kg and 3.0 ± 2.7 , respectively. The average liveweight is similar to that reported by Anonymous (1978), however the hens generally continued to gain weight after the first laying period. For 12 percent of hens studied, the causes of offakes were mortality (33 percent), sale (27 percent), predation (20 percent) and domestic consumption (20 percent).

Average reproductive parameters per hen recorded over 2 laying cycles were as follows: number of eggs laid 10.5 ± 2.7 , number of hatched chicks 8.5 ± 3.0 , hatchability rate 79 percent; survival rate of chicks at weaning 55 percent, brooding period 51.9 ± 9.2 days and interval between clutches from 80 to 90 days. This interval between clutches allowed about 3 clutches per year. All the eggs laid were generally incubated. The laying period, depending on the number of eggs laid,

may range from 8 to 12 days. The number of eggs laid was consistent with those reported by other authors (Aklobessi *et al.*, 1992; Abba, 1994; Mopaté *et al.*, 1995). The hatchability rate was lower in comparison with that of North-Guéra which was given to be 85 percent (Mopaté *et al.*, 1995). The following hatchability rates (percent) were reported: 65 (Aklobessi *et al.*, 1992) and 30 to 70 (Provost and Boredon, 1968). The average brooding period was consistent with the value reported by Abba (1994). The interval between clutches was close to that reported by Aklobessi *et al.* (1992). The annual clutch number in this study was lower than that observed by Mopaté *et al.* (1995) who reported 4 clutches per year. However, Aklobessi *et al.* (1992) noted 3 to 4 clutches per year. The feeding and husbandry practices may explain these differences.

CONCLUSIONS

The study highlighted production and health constraints on family chicken farms in the rural area of N'Djaména, Chad. The flock structure showed that there were more chicks in the village flocks. Besides, the chicks underwent more losses, resulting from diseases and unsuitable husbandry practices, which led to high offakes through mortality, predation and accidents. Data on the flock structure and the production efficiency emphasized the socio-economic role of chickens in the village agricultural systems. The health problems related to infectious diseases and

parasites constituted a bottleneck in the development of this poultry sector. The reproductive performances of local hens of the study area were generally in consistency with values reported for local hens in other African countries. Interventions to be recommended should take into account not only the control of infectious diseases and parasitism but also the control of rearing risks, which may lead to high losses in chicks. Moreover, improvement in the husbandry practices may ensure better laying performances.

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SUMMARIES OF SOME PAPERS PUBLISHED ON FAMILY POULTRY IN 1998

Village egg and fowl meat production in Africa

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[Source: World's Poultry Science Journal, Vol. 54, March 1998, pp. 73-86]

Throughout the continent of Africa, the keeping of indigenous fowl by village communities has been practised for many generations. These birds, which are generally kept on a free-range system, currently make up more than 80 percent of the continent's poultry flock. While requiring minimal resource input and considered secondary to other agricultural activities by farmers, this type of production has an important role in supplying the local populations with additional income and high quality protein. However, high mortality, especially in growers, constitutes the greatest

constraint on development. Indigenous fowls are not particular variety but are the result of erratic crosses between local and imported stocks. Growth and egg production of the indigenous birds are low and their limits of performance are rapidly reached when feeding and management are improved. However, the meat and eggs are much preferred by the consumers and fetch premium prices compared with commercial birds. The genetic potential of the indigenous stocks could be improved through crossing with selected but still robust varieties.

Indigenous Naked neck fowl of Bangladesh

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[Source: *World's Poultry Science Journal*, Vol. 54, September 1998, pp. 279-286]

The principal source of eggs and meat in Bangladesh is the large population of indigenous free range scavenging rural poultry. However, their performance is far below that of standard exotic stocks. The absence of varieties that are able to thrive well in the harsh hot and humid environment, poor nutrition and high incidence of disease in the rural areas are the main problems affecting poultry production. Under these conditions the standard exotic stocks suffer most from heat stress, malnutrition and diseases, while among the indigenous varieties Naked neck fowl perform better in terms of egg and meat production, and are more resistant to disease than their fully feathered counterparts. Crosses between indigenous Naked neck fowl and exotic standard breeds also perform better than

similar crosses using fully feathered indigenous fowl. However, research has not yet been carried out to determine the potential usefulness of Naked neck birds in the development of stocks that are better adapted to the needs of the rural farming community. This paper brings together the available information on the performance of indigenous Naked neck fowl in the hope that it will draw the attention of scientists worldwide to its interesting characteristics and facilitate future research. This could help in producing improved stocks better suited to the rural communities of Bangladesh and those in other countries where similar physical and socio-economic conditions are to be found.

Comparison of various diagnostic methods in characterizing Newcastle disease virus isolates from Desi chickens

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[Source: *Tropical Animal Health and Production*, Vol. 30, pp. 287-293]

Eleven Newcastle disease viruses (NDV), isolated from apparently healthy and ailing Desi chickens were subjected to both conventional and modern characterization techniques. The virulence and strain differentiating experiments placed 10 isolates in the velogenic group and one in the mesogenic group. In Madin Darby Bovine Kidney (MDBK) cells, 9 isolates pro-

duced characteristic cytopathogenic effects up to 5 and 2 up to 3 passages. Molecular characterization with a 21-mer-oligonucleotide probe placed all the isolates in the velogenic/mesogenic group. The results of this study clearly indicated that the isolates obtained are either velogenic or mesogenic but not lentogenic.

Causes of young guinea fowl mortality in Burkina Faso

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[Source: *Revue Élev. Méd. vét. Pays trop.*, Vol. 51, No. 1, pp. 87-93]

To investigate the causes of young guinea fowl (*Numida meleagris*) mortality a survey involving 114 farmers in eight provinces was conducted in Burkina

Faso. A series of studies was carried out in 58 farms located in a more restricted area consisting of five provinces where 3017 guinea fowls 0-3 months of age

were monitored daily. The survey showed, on the one hand, a total mortality rate of 73 percent and, on the other, deficient rearing techniques concerning habitat, heating, nutrition, water and health. Daily monitoring of 3017 young fowls showed that mortality rates were estimated at 80 percent in improved and traditional farms, and the highest mortality rate was observed in August during the rainy season. The microorganisms identified were *Escherichia coli*, *Salmonella sp.*,

Klebsiella sp., *Enterobacter sp.*, *Pseudomonas sp.*, *Proteus sp.* and *Candida albicans*. The parasites were trichomonads, coccidia, *Ascaris*, tapeworms, and spirurides of the genus *Tetrameres*. This study showed that there were many causes for young guinea fowl mortality in Burkina Faso. Moreover, farming conditions, as well as simultaneous infections, age and season have to be taken into account to improve guinea fowl farming.

Indigenous domestic turkeys of Oaxaca and Quintana Roo, Mexico

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[Source: Animal Genetic Resources Information, Vol. 23, pp. 69-78]

The presence and role of indigenous turkeys in Oaxaca and Quintana Roo, Mexico, were investigated by means of an on-site assessment and an orally administered questionnaire. Questions included breed characteristics, uses, management conditions, advantages and limitations of the breed. An indigenous breed of turkey in Oaxaca and Quintana Roo was described. A strong interest in the raising and commerce of turkeys in Oaxaca was noted, however in Quintana Roo substantial reductions in numbers of turkeys have oc-

curred over the last two decades. Mortalities of turkey poultts ranging from 50-100 percent due to a disease with symptoms compatible with *Histomonas meleagridis* infection were reported. This appears to be the most significant limiting factor to raising turkeys in a backyard type system in Oaxaca and Quintana Roo. Raising turkeys separately from chickens is probably the most effective strategy for decreasing indigenous turkey poult mortality of this type.

Chemical composition and metabolizable energy value of some feed resources for poultry in the Central African Republic

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[Source: Revue Élev. Méd. vét. Pays trop., 1998, Vol. 51, No. 1, pp. 55-61]

The adequate use of raw materials produced in African tropical countries is limited due to a shortage of accurate data on their nutritive value and technological processing. The present study was conducted to evaluate the nutritive value of tropical raw materials available for poultry in the Central African Republic. These were analyzed and their digestibility measured in adult

cockerels. The following results were obtained for crude protein (percent dry matter) and metabolizable energy (kcal/kg dry matter), respectively: maize 10.4 and 3943, millet 11.7 and 3803; white sorghum 11.6 and 3793; yellow sorghum 10.1 and 3790; red sorghum 9.7 and ND; sorghum (blend) 10.8 and 3797; fermented dried cassava 1.2 and 3341; cowpeas 24.9

and 3111; cottonseed meal (expeller) 41.3 and 3748; cottonseed meal (solvent) 45.3 and 2522; dried blood meal 83.7 and 2355. Aside from a cottonseed meal with high residual fat content, cereals were undeniably the most energetic raw materials. Cottonseed meals showed protein and metabolizable energy contents

similar to those reported by international literature. High digestibility was observed for raw cowpea seeds, whereas dried fermented cassava and blood meal exhibited lower values than those published elsewhere. This can be explained by the use of different specific processing techniques, which are discussed.

Some quantitative data in maggot production for village poultry breeding in North-Cameroon

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[Source: *Bulletin Bedim*, 1998, Vol. 7, No. 2, p.10]

Experiments made in North-Cameroon in February and May 1998 have shown that controlled breeding of maggots is easy on substrate composed of rumen content. A total of 1746 larvae weighing 60.83 g has been collected during days 3 and 4 from 2-kg fresh substrate. When the maggots have been mixed with various food scraps and grains, and offered to local cocks

3.5 months old, the larvae have always been eaten first. The maggots were identified as larvae of the common domestic flies, *Musca domestica*; except a very little number of *M. sorbens*.

Next tests will be focused on the performances of poultry with or without maggots in their feed.

The Black Maltese: a Mediterranean, light breed of poultry

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[Source: *Animal Genetic Resources Information*, Vol. 24, pp. 41-48]

The Black Maltese is a nearly-extinct light breed of non-sitting, egg-type chicken, present in the Maltese Islands. Formerly widely reared under backyard conditions for its abundant, white eggs, it has now been entirely replaced by intensely reared synthetic strains of poultry. This breed is also absent from the remaining backyard flocks in Malta, having been replaced by

Rhode-Island Red commercial strains. The Black Maltese survives in dwindling numbers as a curiosity and show-bird for poultry shows. The current spatial distribution and a breed population size were determined, and breed standard was established. Suggestions on safeguarding this breed were also discussed.

Improvement in pigeon's growth performances by crossing two local breeds with an European breed in Morocco

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[Source: *Animal Genetic Resources Information*, Vol. 24, pp. 49-61- Title translated by E. F. Guèye]

This study was carried out with the objective of improving the performance of squab commercial production.

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tion in Morocco. Crossing was made between two local pigeon breeds: *Beldi* and *Mgandi* with the Italian breed *Sottobanca*.

The experiment was conducted in confinement under similar conditions of feeding and health care for all groups.

The comparison of the crossing results of the three breeds revealed a significant variability in the weight of squabs at slaughter (28 days) due to the breed of the sires, the breed of the dam, their interaction and the

sex of the squab. In addition, differences were noted between performances of the reciprocal crosses, which could be linked to maternal effects. The best conformation was that of male crossbred squab between a female *Sottobanca* and a male *Beldi* or *Mgandi*.

Furthermore, the comparative study of the gap of performances between parents and crosses has shown that the degree of the heterosis depends on the genetic distance between two breeds crossed. Thus, the combination of the two breeds *Sottobanca* and *Beldi* has given the best heterotic effect.

Morphological and biometrical characteristics of the Senegal native chicken

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[Source: Animal Genetic Resources Information, Vol. 24, pp. 63-69 - Title translated by E. F. Guèye]

Data on 1598 birds from two ecological zones (Dahra in the central part of Senegal and the area of Casamance, in the south) were analysed to characterise the Senegalese chicken.

Each bird was described phenotypically, weighed and the length of its metatarsus measured.

The Senegalese chicken varies in colour, but the most frequent colours are brown (13.2 percent), white (12.4 percent), yellowish (8.4 percent), white and brown (8.4 percent) and light brown (7.8 percent). The “fizzle” and “Naked neck” phenotypes represent 0.9 per-

cent et 1.94 percent of the whole population, respectively. These correspond to frequencies of 0.5 percent for the fizzle gene (F) and one percent for the Naked neck gene (Na). The skin and the legs are generally white, but in some cases they can be yellow, pink or blue.

The average liveweight of chicken is 1.02 ± 0.337 kg with an average tarsus length of 9.21 cm. The egg number per hen is 12.4. Generally, the egg shell is white (73 percent). The average egg weight is 31.7 ± 3.9 g

Poultry, women and development: old ideas, new applications and the need for more research

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[Source: World Animal Review, Vol. 91, No. 2, pp. 43-48]

Poultry are probably the most important livestock species for many poor, rural families. Within these families, women are generally responsible for poultry

management. Poultry development is therefore often seen as a means of addressing rural poverty and reaching women groups. However, many of these develop-

ment initiatives focus mainly on technical interventions. This article argues that this narrow focus should be widened to include flock dynamics, marketing and

social implications. A conceptual model that includes data collection, data analysis and information dissemination is presented.

Poultry plays an important role in African village life

E. F. Guèye

[Source: *World Poultry*, Vol. 14, No. 10, pp. 14-17]

Despite efforts to develop intensive poultry production, family poultry are still very important in low income, food deficient countries. It contributes significantly to food security and poverty alleviation in

disadvantaged groups and less-favoured areas in Africa. Yet this subsistence sector does not receive enough attention from agricultural policy makers.

Prediction of body weight on the basis of body measurements in mature indigenous chickens in Senegal

E. F. Guèye, A. Ndiaye and R. D. S. Branckaert

[Source: *Livestock Research for Rural Development*, Vol. 10, December 1998, No. 3,

<http://www.cipav.org.co/Irrd/Irrd10/3/sen103.htm>]

Data on body weight and body measurements were individually collected between March and September 1998 from mature Senegalese indigenous chickens at two central poultry markets in Dakar, Senegal. The objective of the study was to investigate the possibilities of using body measurements to predict the body weight of birds with high levels of accuracy. Results obtained from 502 males and 325 females revealed that more males (60.7 percent) were sold from indigenous chicken flocks. The males showed higher body

weights and body measurements ($P < 0.001$). Correlation coefficients between the body weight and the circumference of chest were strong and high ($P < 0.001$ in males as well as in females). The body weight was also correlated to the body length ($P < 0.001$ in males and $P < 0.01$ in females). Thus, the circumference of chest and the body length are the body measurements that are most suitable for the prediction of the body weight.

Pasture versus integrated farming system as scavenging source for local and exotic chickens

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[Source: *Livestock Research for Rural Development*, Vol. 10, December 1998, No. 3,

<http://www.cipav.org.co/Irrd/Irrd10/3/sam103p.htm> - Summary adapted by E. F. Guèye]

Most families in Cambodia raise chickens and even a very poor family has at least 5-6 local hens and a cockerel that scavenge around their households. This study was carried out at farmer level with the objectives (i) to compare the scavenging abilities and survival of two types of chickens (local versus exotic) and (ii) to compare two ecosystems in which the

chickens could scavenge. Thus, growing chickens (30 local and 30 exotic; about 500 g initial weight) were managed under (a) total confinement, (b) scavenging on pasture or (c) scavenging in an integrated farm area with fruit trees, a biodigester and duckweed ponds. Until the end of the 70-day experiment during the rainy season, only 9 of the 30 exotic chickens sur-

vived, compared with 24 out of 30 for the local breed. Newcastle disease was the main cause of mortality although all birds were vaccinated against this disease. The nature of the area available for scavenging influenced strongly the feed intake pattern of chickens when they had access to both energy- and protein-rich supplements. Birds with access to the integrated farm area ate significantly less ground soya bean (8 g soya beans /day or 2.7 g protein) than when the scavenging area was exclusively pasture (16 g/day), while the

intake of broken rice was similar in both scavenging treatments (40-50 g/day). Recommendations on ways to improve the productivity of the poor farmers are made.

There were differences ($P=0.001$) in final liveweights of local chickens in the two scavenging treatments. Values were 1,390 g on pasture and 1,478 g in the biomass group compared with 667 g for the confinement group.

Baladi chickens are special creatures

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[Source: World Poultry, Vol. 14, No. 11, pp. 30-31]

Egypt is known for its Fayoumi chicken. This ancient colourful bird is a protected species and reared near the city of Fayoumi. Further north farmers keep another highly appreciated chicken, the Baladi. This even more colourful bird of unknown history displays

interesting traits. Baladi chickens are a mixture of ancient breeds which are docile, active breeders and resistant to diseases. Baladi broilers grow slowly, cost more but are well in demand.

Village chicken production and health – south-east Asian perspectives

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[Source: Scientific Proceedings, 4th Asia Pacific Poultry Health Conference, 22-26 November 1998, Melbourne, Australia, pp. 35-42]

Village chickens will remain an important source of cheap protein and a source of extra cash to the rural population in the next decade. As long as there are villages in south-east Asian countries, village chickens are there to stay. Should the rearing of village chick-

ens then be expanded? This would need reflection. As infectious diseases remain a big hindrance to the growth of village chicken production, finding a cheap source of feed will be another obstacle to the expansion of village chickens.

Research and development options for family poultry

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[Source: Introductory paper to the First INFPD/FAO Electronic Conference on Family Poultry, since 7 December 1998 – 5 March 1999 (extended),

<http://www.fao.org/waicent/faoinfo/agricult/aqa/agap/lpa/fampo1/intropap.htm>]

Smallholder poultry production (i.e. family poultry) is an appropriate system that makes the best use of locally available resources. Family flocks are important providers of eggs and meat as well as being valued in religious and cultural life. There are three production systems for family poultry - free range, backyard and small-scale intensive with productivity of 20 - 60, 30 - 100 and 80 - 150 eggs/hen/year, respectively. Body weight of 1.2 kg and 800 g are obtained at 32 weeks for normal size and dwarf breeds of local chickens in the free-range system, respectively. Newcastle disease

is the most important health problem, breeding, feeding and marketing are also equally important. A co-ordinated programme involving breeding, feed, health management is suggested for the development of family poultry production. The Food and Agriculture Organization of the United Nations (FAO) is strongly committed to family poultry development and, through the International Network for Family Poultry Development (INFPD), can co-ordinate family poultry development activities under the Special Programme for Food Security (SPFS).

Appropriate feeding and management of livestock for reduction of negative environmental impact in Africa

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[Source: Proceedings Special Symposium and Plenary Sessions of the 8th World Conference on Animal Production, 28 June - 4 July 1998, Seoul National University, Seoul, Korea, pp. 471-487 - Summary abbreviated by E. F. Guèye]

The negative effects of livestock production - land degradation, water pollution, emission of greenhouse gases and loss of biodiversity - are reduced when productivity per animal is increased. The experiences from the Rural Poultry Research Project are used to illustrate the type of development required in feeding and management. The recommendations of this project are for improved health management (Newcastle

disease vaccination), nutrition (by giving supplementary ration compounded from locally available agro-industrial by-products twice a day with cool drinking water) and continued provision of shelter. In future, multidisciplinary, on-farm research should focus on small stock, including poultry, in the mixed farming system.

Studies on duck production in the Mekong Delta, Vietnam

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[Source: Proceedings of the Internet Conference on Integrated Biosystems, Eds. Eng-Leong Foo & Tarcissio Della Senta, <http://www.ias.unu.edu/proceedings/icibs/men/paper.htm> - Summary abbreviated by E. F. Guèye]

An experiment was carried out using scavenging ducks on farms in Vietnam's rural area. The ducks were given supplements consisting of a mixture of broken rice and dried fishmeal, or broken rice and dried fishmeal alone. These diets were fed to cross-

bred scavenging ducks from 28 to 70 days of age at night. The liveweight gains were significantly higher for the fishmeal and broken rice mixture than for the broken rice diets. However, the cost per kg gain for these diets were higher compared with no supplement.

Women as a resource target for rural poultry production in India

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[Source: Proceedings, Vol. 2, 10th European Poultry Conference, 21 - 26 June 1998, Jerusalem, Israel, pp. 604-606]

The paper stresses the need for more women participation in village poultry keeping in spite of the fact of diversification of approaches to the input sources and planning strategies. The scavenger system or the improved models to increase the number of birds to be reared within the rural ecosystem with women as

resource target appears to be the only solution for the improvement of economic and social status, which would affect 58 percent of small and marginal farmers and landless labourers families. The need is to vitalize women resources for production systems sharing benefits and improving their skills.

Ducks and turkeys - an untapped market in Zambia

A. Sayila

[Source: World Poultry, Vol. 14, No. 12, pp. 44-46]

Duck and turkey production in Zambia is insignificant both in terms of numbers and sales. Cultural bias and a lack of resources are hindering the development of

these potentially profitable products in this southern African country.

Comparative performance of black Australorp, Malawian local chicken and their F₁ crossbred roasters

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[Source: Indian Journal of Animal Sciences, Vol. 68, No. 4, April 1998, pp. 366-367]

A study was conducted to assess and compare the growth performance and carcass yield traits of Black Australorp (BA), Malawian local chicken (LC) and their F₁ crosses at 8 weeks of age. For each genotype BA x BA, LC x LC, BA x LC and LC x BA, 45 birds were used. Commercial growers' mash was fed to experimental roasters *ad libitum*. BA x BA roasters were significantly (P<0.05) superior for live body weight at 20 weeks and average daily weight gain to 20 weeks of age. BA x LC and LC x BA were intermediate and significantly heavier than LC x LC. LC x LC consumed the least amount of feed, whereas BA x BA, BA x LC and LC x BA consumed similar amounts of feed. LC x LC was significantly inferior

(P<0.05) for warm carcass, drumstick, thigh, breast meat and remaining carcass yields. Drumstick and thigh yields did not differ significantly (P>0.05) between BA x BA and BA x LC. LC x BA had similar breast meat yield to BA x BA. BA x BA was significantly (P<0.05) superior for remaining carcass yields, while BA x LC and LC x BA were intermediate. There were no significant differences (P>0.05) due to genotypes for proportion (percent) of carcass parts yields except wing yields. Wings constituted a significantly higher proportion of LC x LC warm carcass, crossbreeds were intermediate and BA x BA was significantly inferior.

First Research Co-ordination Meeting of the Co-ordinated Research Programme on the Improvement of Family Poultry in Africa

The meeting, organized by the Joint FAO/IAEA (=International Atomic Energy Agency) Division, was held in Rabat, Morocco, from 8 to 12 February 1999. It was attended by nine African beneficiaries of the programme (Côte d'Ivoire, Egypt, Kenya, Madagascar, Mauritius, Morocco, Uganda, Tanzania and Zimbabwe).

There were also four speakers, two representatives of the FAO/AGA of which Prof. René Branckaert (FAO Animal Production Officer and Member of the INFPD Advisory Committee), the INFPD co-ordinator (Prof. E. B. Sonaiya, Department of Animal Science, Obafemi Awolowo University, Ile-Ife, Nigeria), the representative of the Danish Network for Poultry Production and Health in developing countries as well as many Moroccan observers.

The meeting was chaired by the Representative of the Joint FAO/IAEA Division. After the official opening by the Moroccan Livestock General Director, various beneficiaries prepared a review of the situation of family poultry farming in their respective countries.

Dr. Anita von Krogh

This is to introduce a Norwegian veterinarian who has been working with FAO/AGA as associate professional officer since November 1998. She has been working mainly with family poultry development and is trying to identify individuals and groups working on similar projects, often in the same geographical region. It would be useful to have more information on what types of projects are taking place, and where. It will then be possible then to learn from each other's experience and save resources, time and work. It

The oral reports were intersected by various scientific oral reports from the participants. Methods were discussed for surveys and statistical analyses, serological and vaccination techniques as well as results obtained from recent vaccination campaigns.

In his presentation, Prof. René Branckaert highlighted the FAO/AGA programme for support to family poultry development. The representative of the Joint FAO/IAEA Division presented the activities of his division as well as the mechanisms for technical and financial assistance from IAEA. Moreover, work plans of the research programme for the next two years were discussed, and a main guideline was presented, discussed and approved.

A study tour and practical laboratory work were the remaining activities of the meeting whose success was due to efforts by the persons in charge of the Department of Avian Pathology of the Hassan II Institute of Agronomy and Veterinary Medicine. The next research co-ordination meeting is scheduled for May 2000 in Mauritius.

would also be useful to establish contact for future co-operation.

Ms. von Krogh would like to gather information on projects with a main emphasis on poultry and projects with only a component on poultry. If sufficient replies are received, the information will be analysed and disseminated through the INFPD Newsletter. All contributions would be appreciated, including background information on projects together with the name of a

contact person. It would also be useful to receive on implemented (see questionnaire below).
completed projects and those that have not yet been

Please give short and clear answers to her, even if you don't have the answers to all the questions:

INFORMATION ON PROJECTS WITH POULTRY COMPONENT

Project No. :

Name of the project:

Countries where the project took (takes / will take) place:

Goal(s) of the project:

Short description of poultry component of the project:

Organisations involved:

Donors:

Start and end of the project (approximately):

Short description of results if the project is finished:

Contact person(s):

Please raise any questions, or return the filled-in form to:

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Dr. Alemu Yami

Dr. Alemu Yami has been appointed as Co-ordinator of the very important “National Poultry Research Programme, NPRP” of Ethiopia.

On behalf of all INFPD members, we wish to congratulate this INFPD member and wish him every success in his assignment.