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The Yugoslav hybrid JATA

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From a pedagogical, organizational, management and marketing point of view, the evolution of selection work is a logical step forward in the development of a region or nation. Although some people criticize the selection work being done in Yugoslavia, the appearance of new breeds in this and other Mediterranean countries indicates that our efforts are successful.

Independent territorial selections can best base their selection targets on specific climatic conditions, maintaining traditions and market demands. Local selection is the simplest way of preserving genes of domestic populations of animals (or plants) which are of substantial value in light of the steady decline in genetic diversity.

Even small local selection can focus the dynamic creative activity of individual researchers, teams and research institutions, thus establishing new, future centres of independent progress and development. The evolution of most sophisticated technologies relies mostly on classical production methods. There can be no genetic engineering without a strong breeding background. Development activities must include educational activities to ensure that the progress achieved can be transformed into practice.

Thanks to territorial selection, the transportation of live animals can be reduced to practically zero, which is ideal from the veterinary point of view.

According to the principles listed, there has been broiler selection research in Yugoslavia and Slovenia for more than 20 years. The Prelux broiler hybrid in the late 1960s and 1970s was the first result of these efforts, which unfortunately did not extend to broiler meat production. However, this does not diminish its research and educational value. Some basic research on Prelux hybrids serves for orientation purposes while other research serves as practical aid for decisions and further research.

JATA currently has eight purebred strains of heavy birds of a commercial character. They were all derived from WPR and DWC breeds to which were added genes of the Asian NH and Wyandotte strains.

Before 1983, the selection work at JATA consisted of creating and improving purebreds and studying the production parameters of purebred animals. With this work, the experience, routine and skills were acquired to enable JATA to maintain a permanent rate of genetic improvement for live weights of more than 4% per year. We are now at the beginning of our regular performance test selection. We have furnished the building for rearing, selection and breeding of high quality animals at the superelite level. From this building we will be receiving superior rooster mothers that have been thoroughly tested. In parallel with this project we are also planning to start artificial insemination. This will enable us to transmit the qualities of some rare, top quality roosters and hens to the maximum number of progeny.

Apart from intensive performance test selection, after 1983 all of our activities were oriented to comprehensive testing of Single Crosses and Double Crosses. The results of these tests provided some very encouraging information:

- By choosing a proper line combination with Single Crosses at the parent level, we can achieve 4 days earlier maturity, 0.8% higher rate of lay; 0.7% higher hatchability and 5 chicks more per hen housed.
- With Double Crosses at the broiler level, we can achieve 8% higher live weight at 45 days of age; 1.4% higher processed yield; 0.8% higher part of first quality parts; 4 days shorter feeding period; and 9 points lower feed conversion ratio.

After an elaborate evaluation of the information gathered during several years of testing, we started an ambitious reproduction programme that enabled us, in 1988, to offer our client two hybrids, in optional quantities, at the day old parent or broiler hatching egg levels: JATA A and JATA B hybrids.

JATA B BROILER (Rapid feathering)

Age (days)	45
Live weight pullets (g)	1,832
Live weight cockerels (g)	2,198
Live weight straight run (g)	2,015
Mortality (%)	3.1
FCR	1.99
Sex. dimorphism index (%)*	17.2

JATA B BROILER (Slow feathering males)

Age (days)	45	49	56
Live weight pullets (g)	1,812	2,023	2,374
Live weight cockerels (g)	2,128	2,397	2,866
Live weight straight run (g)	1,970	2,210	2,620
Mortality (%)	2.60	2.80	3.10
FCR	2.02	2.09	2.22
Sex. dimorphism Index (%)*	16	18.90	18.80

* Sex dimorphism index = (mean cockerels - mean pullets)/grand mean.

JATA A is the first hybrid in a Mediterranean country that will match the limit of **Figure 2** and double it at 45 days of age. With 2,015 g of live weight grand mean it will exceed the 2 kg live weight limit and with 1.99 in feed conversion ratio it will drop below 2 kg of feed per kg of weight gain.

JATA B is lighter than JATA A at 45 days of age but its excellent vitality will make it famous as average mortalities of less than 3% up to 50 days are being recorded. The late feathering males also stay behind in the live weights up to the third week of age which gives excellent evenness of the birds on the slaughtering line. The different rate of feathering makes it possible to identify the sex of day old chicks, to feed them separately and to achieve high quality animals even when slaughtered at the age of 7, 8 or more weeks.

As hybrid A mothers also lay some eggs, they are obviously suited for closed, integrated production systems whereas hybrid B birds are most suited to broiler breeder holders and hatching egg producers.

JATA has already received requests from some leading selection companies to exchange flocks for testing and other research purposes. We are all in favour of better exchange programmes and fully support stronger co-operation between poultry producers in the Mediterranean area.