

of insemination of the controls. All returns to service were reinseminated at observed œstrus. Ovarian activity was initiated in 26 (70 p. 100) of 37 non-cyclical cows of which 12 (32 p. 100), conceived to the synchronised ovulation. Mean pregnancy rates were 44.8 and 47.4 p. 100 for treated and controls respectively. Mean calving to conception intervals were 70.9 days (treated) and 78.6 days (control).

### III. — Effets de loci individuels sur des performances zootechniques : les conséquences pour les stratégies d'élevage

#### FRÉQUENCES DE GÈNES IMPORTANTS DANS LES POPULATIONS PORCINES

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Après une brève discussion des problèmes méthodologiques que soulève l'estimation des fréquences géniques, quelques résultats de la littérature concernant les populations porcines sont passés en revue. Parmi les gènes à effet visible, l'accent est mis sur le locus *Hal* de sensibilité à l'halothane. Parmi les polymorphismes biochimiques, sont considérés 3 enzymes du globule rouge, 2 protéines du sérum, 2 systèmes de groupe sanguin et le complexe d'histocompatibilité SLA. Les fréquences géniques, qui constituent une information utile en sélection dans le cas des gènes « majeurs » ou « marqueurs », servent également dans le contrôle des filiations et permettent d'estimer les distances génétiques entre races, ainsi que le degré d'hétérozygotie des populations.

#### THE EFFECT OF A SINGLE LOCUS (*HALOTHANE*) ON VARIANCES OF AND CORRELATIONS AMONG QUANTITATIVE PRODUCTION TRAITS

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The expression of quantitative production traits can be seen as the sum of genotypic and environmental effects. Genetic effects are the sum of effects of single genes and interactions among those genes. If genes on one locus affect various quantitative traits (pleiotropic) correlation arises. The *Hal*-locus seems to be a pleiotropic locus affecting several quantitative production traits. The effect of this locus on variances of production traits in *Dutch Landrace* pigs and correlations among those traits has been described in the present paper. It was concluded that the *Hal*-locus is a "major-locus" for meat quality, backfat thickness and ham per cent, accounting for about 60, 20 and 25 p. 100 of the respective additive genetic variances. Further that differences in variances and correlations between different genotypic groups could be explained satisfactory by the pleiotropic effect of the *Hal*-locus.

#### EFFECTS OF MAJOR GENES ON ANIMAL BREEDING STRATEGIES

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A segregating major gene can have important effects on genetic parameters and on selection responses, and may lead to anomalies in the estimates among breeds and also within breeds over time. However, proving the existence of a major gene may be difficult unless its effects are quite large. Fortunately selection will make use of such a gene even if its effects are not