

# 土番鴨親代選育現況及未來展望

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使用人工授精生產三品種土番鴨為國內主要肉鴨生產方式，為了提高受精率，每3天授精一次，導致投入勞力成本增加，加上市場對土番鴨體型的需求有逐年增大的現象，此二項產業議題，成為畜產試驗所宜蘭分所規劃種鴨選育研究工作上的重要研究方向。本分所已完成土番鴨父系親代大體型白色番鴨畜試一號之選育工作，現正持續進行土番鴨親代母系的選拔工作。試驗分別以10-15隻公番鴨混合精液，單次人工授精0.05 ml新鮮精液於母五結白鴨及北京鴨，連續收集14日之種蛋後檢測其受精蛋數，以作為選拔種鴨之指標，各世代並依系譜繁殖。經10個世代，五結白鴨人工授精一次後2-8天之平均授精率為80.3%，最長授精天數平均為7.9天，已達6天授精一次的育種目標。北京鴨經11代之選育，受精蛋數育種價分別為-0.05、-0.04、0.13、0.14、0.25、0.69、1.04、1.42、1.79、2.13及2.57，顯示以受精蛋數育種價作為選拔指標，其有效受精持續天數增加應屬可期待者，第11世代最長受精天數平均已達6.2天。分所育成的種鴨品系尚包括，褐色菜鴨畜試一號、褐色菜鴨畜試三號、高飼效褐色菜鴨、宜蘭白鴨台畜一號、宜蘭改鴨台畜十一號、五結黑色番鴨，除此之外，尚維持保種族群之褐色菜鴨與白色菜鴨，對於國內種鴨育種與種原保存工作進行相當多人力與資源的投入。未來除畜牧用途外，近年亦已逐步提高其品質，朝生醫用途的方向發展，藉由本分所豐富的飼養管理經驗，已獲致初步成果，可供應水禽疫苗試驗、檢定、生產所需。

關鍵語：鴨、受精持續性、選拔

## The Status of Parental Selection and Future Prospects of Mule Duck Production

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The use of artificial insemination to produce three way cross-breeding mule duck is the main domestic duck production method. In order to improve the fertilization rate, insemination once every 3 days and that will increase the labor costs. The other, the market demand for larger mule duck has increased year by year. These two industrial issues became an important research direction in the research and development of breeding ducks for us. We have completed the selection of big size of White Muscovy LRI No. 1 and the selection for the duration of fertility of maternal line is continuing. The Wujie White Duck and Pekin duck were artificially inseminated (AI) with 0.05 mL of pooled semen from 10 to 15 Muscovy drakes, separately. After single AI, all eggs were collected for a period of 14 days for incubation. The numbers of fertile eggs at candling at 7<sup>th</sup> day of incubation were recorded to understand the phenotypic traits as the basis for the selection and genetic evaluation of breeder ducks in this generation for mating by pedigree. After 10 generations, the fertility rate and duration of effective fertilization of these eggs from Wujie White Ducks were collected from 2-8 days after single AI were 80.3% and 7.9 days. We have reach the goal of saving labor of AI. This breeder duck can be AI every 6 days. After 11 generations selection, the breeding values of fertilized eggs from Pekin duck G1 to G11 was -0.05、-0.04、0.13、0.14、0.25、0.69、1.04、1.42、1.79、2.10 and 2.57, respectively. So, a correlated response on increasing duration of effective fertilization is expected when selecting on breeding values of fertilized eggs. There are some important duck breeds (line) have been selected in our institute, including Brown Tsaiya Duck LRI No.1 and 3, Better Feed Efficiency Brown Tsaiya, Ilan White Tsaiya TLRI NO.1, Ilan Kaiya TLRI NO.11, Wujie Black Muscovy. Besides, in order to maintain the genetic diversity and to avoid inbreeding, a conservation program for white Tsaiya duck, brown Tsaiya duck and black Muscovy duck. These germplasm preservation population were also reared in our institute. These breeder ducks are not only used in animal production, but also supple some embryonic and ducklings for biomedical requirement after the improve of feeding and management.

Key Words: Duck, Duration of fertilization, Selection