

בהיות שיש איזה רב (הידוע ליודעים) הטוען שיש בידו כתב מהקאמפאני'ס (אמנם אינו רוצה להראותו לרבים...) ובו כתוב (בכתב יד קדשם של אלו אשר כל הנגיעות שבעולם שייך בהם...) כי כבר ארבעים שנה אין מערבין שום עוף כלל, ורק קודם ארבעים שנה עירבו עופות טהורים (כגון קורניש ודארקינג ושאר מרעין בישין אשר לשיטתו נאים המה ובעלי מסורת יותר מהבראקע"ל וכו' שמציעים תלמידי הגר"ש וואזנער זצ"ל). ולרבנים אחרים טוען שכלל לא עירבו, וכן הלאה מפריח שמועות לאויר, וכבר ידוע בשער בת רבים נגיעותיו הפרטיים וד"ל.

גם טוען שמקנא הוא לכבוד מרן רבה"ק מסאטמאר זיע"א שאומרים שאכל עופות המעובדים אשר דבר זה אינו נכון כלל כמבואר בקונטרס זבחי צדק ונתברר ע"י עדים נאמנים רבים. גם כלל ישראל כולו אשר אכל העוף עד היום הזה לא אכל דברים אסורים כי הרי רק לאחרונה נשמע שהחליפו אם העוף (אשר עד עתה היתה חזקה שהיא עוף הבארע"ד רא"ק בעוף אחר).

ועיקר הכל שרוצה שישאר סדר גידול העופות על מתכונתו כעת, וכל זה היפך כל פוסקי וגדולי הדור בשלושים שנה האחרונים (המנחת יצחק הגר"ש וואזנער הקנה בושה ורי"י פישער זצ"ל וכן שאר פוסקים חשובים החיים עמנו לאורך ימים ושנים טובות) אשר כולם ללא יוצא מן הכלל כתבו שצריך השגחה על גידול התרנגולים ולכה"פ שיהיה ברור כשמש שאם התרנגולים הנאכלים הוא הבארעד ראק, על כן אחרי השתדלות מרובה אצל העסקנים העוסקים בזה בארה"ק השגנו הסכמתם לפרסם איזה מכתבים מגדול הדאקטארים אשר עסק עם הקמאפני'ס הגדולים ויודע כל סודותיהם.

וידענו גם ידענו טענת אלו אשר לא רצו בפרסום מכתב זה מחמת שיגרום בלבול גדול והרבה יראי ה' ימנעו מאכילת התרנגולים, אמנם היות שאותו הרב הידוע הולך בימים האחרונים ומפרסם דברים אשר תמציתם הוא שכל גדולי ישראל בארבעים שנה האחרונים אשר דנו בתרנגולים המעורבים טעו ואין מציאות כזו כלל על כן למען כבוד התורה הוחלט לפרסם מכתבים אלו ונקווה להשי"ת שלא יצא מכשול מתחת ידינו.



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Dear Rabbi Litmanowitz:

I enjoyed our short meeting in London on 18<sup>th</sup> May and look forward another opportunity of talking with you in the future. Shortly after we met and to help with understanding, I wrote a short history of the development of the commercial broiler chicken (please see Word document attached "The Modern Broiler Industry").

The Arbor Acres White Rock is generally recognized as the founder breed of the modern poultry industry. This is not a breed whose physical components were known but combined several breeds and resulted from progeny testing different crosses to identify those with the most desirable characteristics. In the that years followed, the Arbor Acre 50 Female was developed from the White Rock by incorporating genetic material from additional breeds which means that already at this stage the mother is not actually known, and introducing the dominant white gene from a Leghorn. The Arbor Acres breed dominated the broiler market in the 1960's, 70's and 80's but started to lose market share when competitor breeds with better processing characteristics entered the market.

In the early 1990's customers in the USA began to place more emphasis on broilers with better processing characteristics and higher white meat yield, in particular. The Cobb-Vantress breed, for example, was known to contain genes from the Cornish (Mali) breed. Previously, there had been a lot of swapping of genetic lines amongst breeders but very little attention was paid to whether they may have contained Cornish (Mali) or Faverolles (Dorking) with five toes, or any other breed that you rule out according to rules of Kashruth. For this reason, it is impossible to answer your question of "who is the mother of the mother" in today's commercial breeds.

You also asked whether a new breed could enter the commercial chain. First, we need to consider the possibility that a new breeding company could enter the market. Ross (Aviagen), Cobb-Vantress (Tyson Foods) and Hubbard (Groupe Grimaud) are highly sophisticated companies who employ the very latest genetic tools and technologies to continuously

improve their production lines (each company maintains production lines which are crossed in different combinations to produce the products that they sell). The breeding and production systems employed by the breeders are very expensive to develop and maintain and this provides a significant barrier of entry to new entrants. In my opinion, it is highly unlikely that a new breeding company would be able to gain a foothold in the market.

The next question is whether any of the existing companies will be able to launch a new genetic line into the market. The breeders always try and respond to the needs of their customers and for this reason they maintain research lines with a variety of different characteristics. As is the case with the production lines, the precise genetic background of the research lines is unknown. Many of the research lines have been acquired as industry consolidation has taken place. To be frank, the breeding companies are interested only in the live performance and processing characteristics of their lines and not the phylogenetic origin.

From time to time, the breeders will make changes to their products by changing the mix of production lines or by introducing a research line into the production mix. There is continued push for lines with improved meat yield characteristics in the USA and South America. **This makes it even more difficult to determine whether the maternal lines offered by breeding companies originate from breeds** that are permitted by Jewish Law. Only if the ancestry could be tracked from the original cross would it be possible to verify the Kosher status and the only solution is to cultivate an independent line.

Respectfully yours,

Colin Baxter-Jones

cc. Rabbi Shmuel Halperin and Rabbi Ezri Pines

## Development of the Modern Broiler Industry

In 1945, Great Atlantic and Pacific Tea Company (known as A&P) and USDA announced a "Chicken of Tomorrow Competition" to determine the most suitable breeds for poultry meat production. In February of 1948, 40 regional finalists shipped hatching eggs from each flock to Maryland where they were hatched for the competition. Once birds were processed, they were judged both for carcass conformation and live performance using feed consumption to weight gain ratios (FCR), average carcass weights and other factors.

The final decision was between a flock of Dark Cornish cross bred birds from the Ventress Hatchery and a flock of pure bred White Rocks presented by Arbor Acres. In the end, the Arbor Acres flock was preferred over the Ventress flock despite the latter's higher yields. The White Rocks' plumage picked cleaner and easier than the dark-feathered Cornish which it was believed would make for better presentation in the retail market. After winning the 1948 contest and the second Chicken of Tomorrow national contest in 1951, Arbor Acres became the premiere producer of meat-type birds. By 1964, Arbor Acres was a full-fledged poultry company and the founding Saglio family sold the company to Nelson A. Rockefeller, who proceeded to distribute the breed around the world.

It is very difficult to determine which breeds of chicken create a commercial breed. The White Rock developed by Arbor Acres was used to create the AABO female parent breeder that became the predominant breed in the 70's. The AABO was a cross between two lines, a Line 44 male and a Line 55 female. The Line 44 consisted of White Rock, Barred Rock, Rhode Island Red and possibly genetic material from the Nicholls breed. The Line 55 contained White Rock together with the dominant white gene from a Leghorn. It is not believed that either of these lines contained Cornish genes.

Professor Paul Siegel at Virginia Tech has maintained a population of White Rock birds for over 50 years without any form of selection. Working with colleagues at other institutions and using the very latest genetic technology, they are trying to ascertain the true genetic lineage of the White Rock. This is technically difficult, time consuming and expensive research for which it is extremely difficult to secure funding.

Prior to the "Chicken of Tomorrow Competition" there was upwards of 1000 breeding companies in the USA alone. It was common practice for such companies to swap genetic lines between themselves. As breeding became more sophisticated and competitive differences between breeds more pronounced, the number of breeding companies declined rapidly. In the 1960's, 70's and into the 80's it was fairly common practice for breeding companies to "acquire" or "source" genetic lines from their competitors. This practice has largely stopped and the primary breeders jealously protect their own genetic material together with its derivation.

During the last 30 year's there has been an increasing demand for broilers with higher meat yield. Breeds like Cobb and Ross quite rapidly displaced Arbor Acres, Avian and Peterson from their previously strong positions in the USA. Some of the increased meat yield was obtained by incorporating Cornish lines but it is believed that additional improvements were made by incorporating genetic material from the Pilch and Lodbroest breeds.

Commercial broilers are typically produced by crossing a Male line with a Female line parent. For genetic security reasons, Male and Female lines are usually hybrids which are represented by the symbols A x B (Male line) and C x D (Female line). Male lines are characteristically selected for growth and conformation but reproductive characteristics continue to be important in Female Lines. Male lines contribute equally as the Female lines because they influence the processing characteristics of the broiler. This was evidenced by the rapid rise in market share of the Ross male in the 80's and 90's. It is quite common in the USA to trace a Male line from one breeder company to the Female line of another.

Today, just three companies dominate the broiler breeder market. Arbor Acres is now part of Aviagen, owned by the GW Group in Germany. Vantress was incorporated into Cobb-Vantress, which is owned by Tyson Foods in Arkansas, USA. These two companies alone supply well over 90% of the modern broiler breeding stock purchased around the globe. A third company, National Broilers owned by Strategic Systems in France, still much of the remainder.

Each primary breeding company maintains both production and research lines as closed populations (pure lines) and employs sophisticated breeding techniques to improve them. Over the last 20 years they have also accumulated new genetic material by purchasing less successful breeding companies. In almost all cases, the acquired lines are maintained as research lines until they can be evaluated for health status and commercial viability. Despite years of intense selection, some research lines will never become production lines.

Every breeding company maintains and reproduces large, pedigreed populations of the production lines that are required to make their commercial products (A, B, C and D). The minimum is four (4) lines but depending upon the product mix this number can be higher. The breeding companies operate in most countries around the world and the product requirements vary by country/continent depending upon the stage of market development. Developing countries tend to place more emphasis on chick numbers and growth rate but more sophisticated markets e.g. USA, EU and Latin America tend to prioritize on cost of production (which is driven by FCR) and meat yield.

In recent years, there has been an increased focus on animal welfare, meat quality, antibiotic usage etc. in particular, the EU has led the charge and there has been increased interest in slower growing chicken breeds (40 to 45 grams per days compared to 60 grams per day). By necessity, this has resulted in breeding companies directing more resources towards meeting these needs and identifying lines that could be suitable for this purpose. This has and will result in more colored breeds and genetic diversity being introduced into the gene pools of the breeding companies.

Dr. Colin Baxter-Jones, 6<sup>th</sup> June 2017.