

New system allows twice the

Stocking twice as many birds per square meter of floor space and still improving bird performance and health sounds like magic. The fact is that Vencomatic's new broiler system makes it possible, without infringing upon bird welfare or environment regulations.

By Wiebe van der Sluis

Following many years of research and consultation of animal welfare organisations, Dutch poultry equipment manufacturer Vencomatic has launched a new housing system for broilers. During the first week of the new year, the company invited the international press to have a closer look at their multi-tier broiler production system, called "Vencomatic Broiler System" (VBS). They have sold two systems and the farmers are delighted with bird performance and environmental impact.

More birds per house

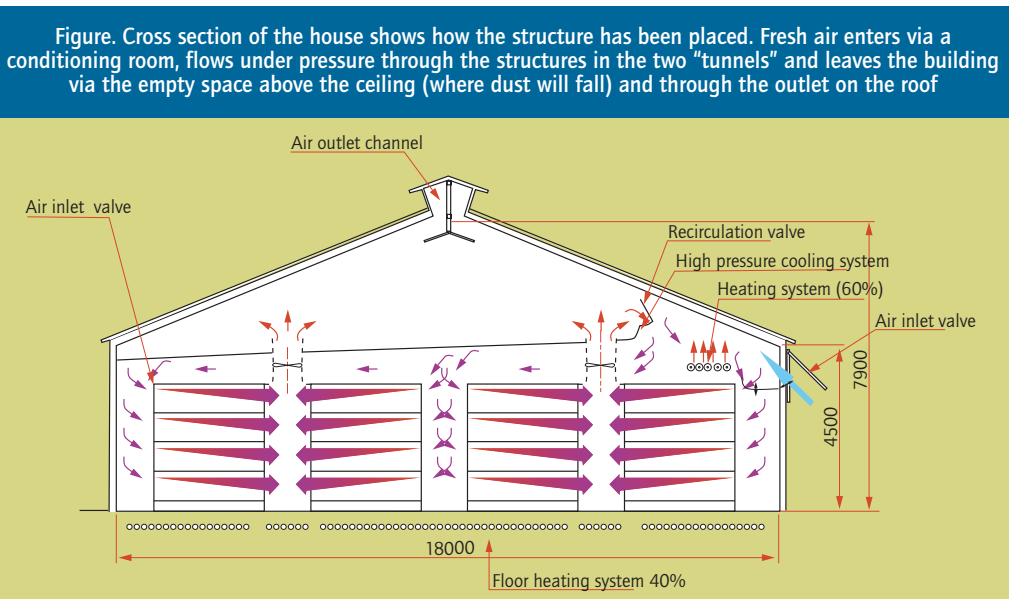
Poultry producer Marcel de Keijzer operates a broiler farm with well over 120,000 broilers near Lopik in the Netherlands. About 90,000 of these are housed in a completely new environment. The new poultry house is 100 by 20 meters. Of the total length only 85 meters is being used for the broilers while 15 meters proved to be required for machinery, control units as well as delivery and dispatch. Upon entering the house the view is completely different from what one



Broilers in the VBS multi-tier housing system are kept on litter, have easy access to water and feed and enjoy green light and a perfect climate.

is used to. No birds but plastic and steel structures are the dominating first impression. A closer look reveals that within the house there are basically two tunnels made of two multi (4) tier structures each. The outside of the structure is closed with see-through doors and ventilation baffles at each level, while on the inside the levels are closed by sliding wire mesh doors (see Figure 1). The tunnel is also closed at both

ends and has its own ceiling. This allows the use of an under-pressure ventilation system, which attracts the pre-conditioned air through the system via the central alley by means of a number of fans to the open space above the house ceiling. By doing so all birds receive a constant flow of fresh air at the right temperature. Since there are two tunnels, small differences per tunnel can be created and controlled. For this



Peter Schreurs of Vencomatic explains that more birds can be kept on less house floor space and still ensure highly improved climatic and environmental conditions.

number of birds in a broiler house



The multi-tier system has fully closed plastic doors with air inlet baffles for ventilation on one side and wire mesh sliding doors on the opposite end.

Marcel has the help of the Fancom F-central computer that controls the climate according to pre-set parameters.

Dry litter

Inside the structure there is plenty of space for the birds along with water and feeder lines through the whole length. The floor is the most interesting part. It is a belt covered with paper and litter to provide the birds with a natural surface. Before the birds arrive the paper is glued to the belt and automatically covered with chopped straw, sawdust, wood shavings, turf rice hulls or whatever litter material is available. Marcel de Keijzer is still conducting experiments on what litter type he can best use. After having had five flocks he does not have a definite preference since the birds seem to be

satisfied with any type of litter. When finished, the birds can easily be collected by simply moving the belt to the end of the house where birds and litter are separated and leave the house automatically by means of different belt systems. At De Keijzer's farm the birds are transferred to a loading platform where they are semi-automatically placed in containers. Interesting is that during the whole production process the birds receive no stress and are never touched by human hands unless there is a problem.

Performance improvements

Results after five production cycles show that problems are negligible and bird performance is outstanding. Marcel showed technical results from 2001-2002 from both



The transport belt delivers the birds to a Ciemme bird counter and crating machine, which delivers them semi-automatically into transport containers. There is no physical contact between the loaders and the birds at any time.

their production houses with respectively the VBS and the traditional system (see Table 1). These figures tell the whole story. Figures collected from another farm in 1998-1999 and compared with the top 25% of the Dutch broiler growers, state these differences in results in Table 2. These figures indicate that the new housing system improves daily gain by approximately 10% and feed conversion by 5%, while mortality drops and yield slightly increases. Experiences from the processing plant also prove that the birds raised on the VBS system have fewer broken legs, less footpad lesions, no breast blisters and a dramatic reduction in broken wings and bruises.

Since the start Marcel and his father Kees have been supported by his veterinarian Wim van der Putten. He believes strongly in



As soon the broilers are ready for processing, belts transfer them to the end of the structure where they are separated from the litter. The birds and litter are transferred respectively to the loading platform and litter containers/storage.

Table 1. Technical results of the VBS system compared with results from traditional housing (2001-2002)

	VBS	Traditional
Stocking (birds/sqm)	21.9	20.9
Mortality (%)	3.5	3.7
Weight (gr)	2145	2091
Growth (gr/d)	50.9	48.2
Age (days)	42.1	43.3
FCR	1.86	1.91
FCR (1500)	1.60	1.68
Prod. Index	264	243
Carcass weight (gr)	1669	1949
Filet (%)	26.29	25.77
Drumstick (%)	14.75	14.82
Thigh meat (%)	15.46	15.42
Filet of filet (%)	5.51	5.54
Wing (%)	11.14	11.28

Better health

"It is amazing how healthy the respiratory systems of the broilers housed in the VBS-system functions," says Johanna van der Stroom, veterinary poultry specialist with Elanco and stated in the Dutch poultry magazine "Pluimveehouderij". She has been monitoring the system at De Keijzer's farm since the first flock was placed and has not found one single bird with an irritated, inflamed or infected trachea, larynx, syrinx or lung. The comparison with Scandinavian birds was easily made, since this is the only part of the world where she has ever seen birds with a similar perfectly healthy respiratory system.

Why the results are so good is difficult to understand, since it always has been assumed that the larger the flock the higher the risk of health problems. Here the opposite seems to be true. This is probably the result of ventilation at bird level and the resulting low level of ammonia present. American researchers have been reviewing the system and making a direct link between low ammonia levels and healthy respiratory systems. □

the system and is now experiencing that the birds in this new system show fewer health problems than those in the neighbouring traditional house, which is minimal at any rate. Most surprising is that the birds also have a higher sanitary quality when arriving at the processing plant.

Only for large units

Although investment in this system is high Marcel is certain that it will pay for itself very quickly. He is supported in this view by Peter Schreurs, Vencomatic's broiler system product manager. Scheurs adds that the system is not only of interest from an economical point of view but also supports animal welfare, human health and the environment. The system does not infringe on bird welfare in any way. On the contrary it is even better than with the traditional system since the birds are kept in smaller groups on a soft floor with litter. They receive fresh air, which can be heated in the winter and cooled in the summer. The green light keeps the bird calm and they prove not to become disturbed when someone enters the house. The absence of direct physical contact with farm workers during the whole production cycle, as well as during unload-

Table 2. Technical results of the VBS system compared with the top 25% of Dutch broiler growers (1998-1999)

	VBS	NL Top 25%
Mortality (%)	2.9	4.3
Weight (gr)	2052	2014
Growth (gr/d)	53.9	48.1
Age (days)	38.0	41.9
FCR	1.716	1.782
FCR (1500)	1.495	1.576
Prod. Index	305	258

ing, dramatically eliminates stress and minimizes damage to the birds.

The closed and intensive ventilation system keeps the litter dry. This reduces dust and ammonia production and is for that reason very friendly for the internal as well as external environment. Peter Schreurs for that reason believes that this broiler housing system can be a solution for those producers who have to meet the strongest en-



Kees (left) and Marcel (right) are wholly supported by their veterinarian Wim van der Putten, who says he has an easy job since the birds are healthier compared to those in the traditional house at the same site.

vironmental legislations. The only downside of the system is that the investment costs are slightly higher than traditional systems, so it is of special interest for those who plan to produce large numbers of birds on limited land space. □