

Ventilation in cow housing

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Ventilation in animal housing is important to allow fresh air to circulate inside the housing structure.

A ventilation system must bring fresh air into the building through planned openings, blend outer and inner air thoroughly, absorb heat, moisture and air impurities and reduce temperature, humidity and pollution levels. It must also allow moist, polluted air out of the building. If the ventilation system does not comply with these requirements, the ventilation in the building is insufficient.

Natural ventilation

Buildings can be ventilated by using temperature and wind force, and the aim is to combine these forces.

Temperature forces develop because of temperature differences between the inner and outer air. It causes differences in the density of air, resulting in an exchange between inner and outer air if ventilation openings are provided at different heights.

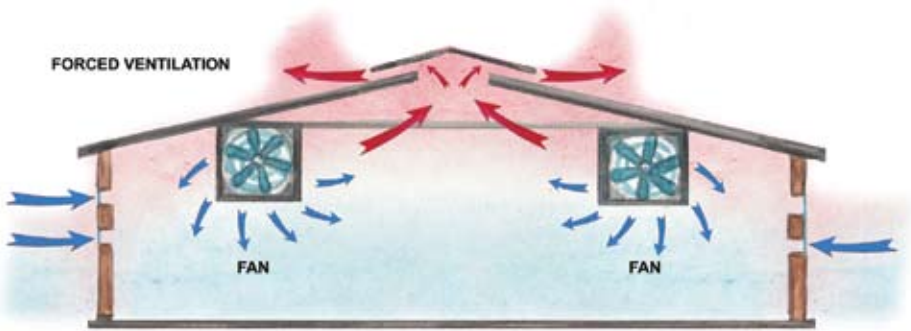
In the case of single openings, cooler air will flow through the lower parts of the opening, in the opposite direction than the warmer air through the upper part of the opening.

Wind force is the result of pressure differences that develop when wind blows over a building. The walls on the wind side are normally under a positive pressure, while the walls on the downwind side are under negative pressure or suction, and wind will flow from the high-pressure to the low-pressure side through the windows. Equal openings must therefore be provided in at least two and preferably in opposite walls for airflow to take place.

Roof ventilation

Ventilation openings can also be made in the roof. In flat or relatively flat roofs, the roof is usually under suction, with the result that openings in these roofs can be used well as air outlets. Steep roofs can be partly under pressure or under suction, the wind side usually under pressure and the leeward side usually under suction. The pressure at the ridge is mostly the same as the pressure on the wall of the wind side, so that openings at the ridge in such cases do not serve as outlets for air in the building as a result of wind forces.

The same principle can be used in buildings with saw-toothed, serrated roofs. Air is drawn in through roof openings regardless of the wind direction. A ceiling is good to reduce the radiation from the hot roof during the day. In saw-toothed roofs, the air in the canal is heated by the heat of the sun absorbed by the roof and as it escapes outward, it must be replaced with fresh air coming in through the windows.



Forced ventilation

Forced ventilation is the best way to provide sufficient ventilation under all climatic conditions, especially where large numbers of animals are kept under one roof.

To ensure good air distribution inside the building, it is usually better to blow air into the building than to suck it out. Good air distribution can be obtained in the building this way, with the aid of adjustable windshields in front of the fans. Horizontal windshields are necessary for control over the air movement in the vertical level, while vertical windshields are required for the sideways distribution of air.

Dairy cattle housing: ventilation

Natural ventilation: Warm air flows naturally upwards, drawing cool fresh air inside through openings in opposite walls at different heights.

Roof ventilation: Air is drawn out through roof openings. A saw-toothed roof design will use the heat of the sun absorbed by the roof. The warm air flows outward and fresh air enters the building through the windows.

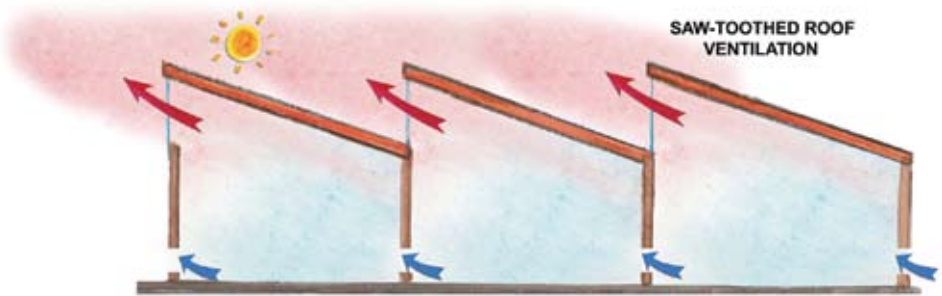
Forced ventilation: Best where many animals are kept under one roof. Fans blow air into the building. Choose fans with adjustable windshields for better distribution of air.

Koeibehusing: ventilasie

Natuurlike ventilasie: Warm lug vloei van nature opwaarts, terwyl koel, vars lug deur openinge op verskillende hoogtes in die teenoorgestelde mure ingetrek word.

Dak ventilasie: Lug vloei deur die dak-openinge na buite. 'n Saagtand dak-ontwerp sal die hitte van die son wat deur die dak geabsorbeer word, gebruik. Die warm lug vloei na buite en vars lug vloei deur die vensters na binne.

Geforseerde ventilasie: Dit is die beste opsie waar baie diere onder een dak gehuisves word. Waaiers blaas lug in die gebou in. Kies waaiers met verstelbare windskerms om die lug beter te laat sirkuleer.



Izindlu zezinkomo ezenza ubisi: ukungena umoya

Ukungena komoya ngokwemvelo: Umoya ofudumele ukhuphukela phezulu ngokwemvelo, udonsela umoya ohlanzekile ngaphakathi kwezimbobo ezisezindongeni ezibhekene emazingeni ahlukile obude.

Ukungena komoya kuphahla: Umoya udonswa ezimbotsheni zophahla. Uphahla olwakhiwe njengamazinyo esaha luzosebenzisa ukushisa kwelanga okudonswe nguphahla. Umoya ofudumele ugelezela ngaphandle bese umoya opholile ungena kwibhili ngamafasitela.

Ukungena komoya okuphoqeletwe: Kusebenza kahle kakhulu uma izilwane zibekwe ngaphansi kophahla olulodwa. Amafeni avuthela umoya ngaphakathi kwebhili. Khetha amafeni aneziviko zomoya ezikwazi ukushintshwa ukuze umoya usatshaliswe kangcono.

Ukuhlaliswa kwenkomo zobisi: ukungena nokuphuma komoya

Ukungena nokuphuma komoya kwendalo: Umoya oshushu uhamba uye phezulu ngendalo, utsala umoya opholileyo ofreshi ukuba ungene ngaphakathi ngemingxuma ekwelinye icala lodonga ngokuphakama okwahlukeneyo.

Ukungena nokuphuma komoya ngophahla: Umoya uphuma ngemingxuma eseluphahleni. Uphahla oluyilwe ngokwamazinyo esarha luyakusebenzisa ubushushu belanga obutsalwa luphahla. Umoya oshushu uphumela ngaphandle kuze kungene umoya ofreshi kwisakhiwo ngeefestile.

Ukungena nokuphuma komoya okunyanzelwayo: Kusebenza kakuhle apho kugcinwe imfuyo eninzi phantsi kophahla olunye. Khetha iifeni ezinamaphiko anokulungiswa ukuze uphume kakuhle umoya.

Bodulo ba dikgomo tsa lebeso: kenomoya

Kenomoya ya tlhaho: Moya o futhumetseng o phalla ka tlhaho ho ya hodimo, o hula moya o phodileng o foreshe ka masoba a leng maboteng a bapileng ka bophahamo bo fapaneng.

Kenomoya marulelong:

Moya o hulelwa ka ntle ka masoba a marulelong. Paterone ya marulelo e saw-toothed, e tla sebedisa motjheso wa letsatsi o tla mongwa ke marulelo. Moya o futhumetseng o phallela hodimo e be moya o foresehe o kena ka moahong ka difensterere.

Kenomoya e qobellwang: Ntle haholo moo diphoofole tse ngata di bolokwang sebakeng se le seng. Difehlamoya di butswella moya ka moahong. Kgetha difehlamo tse nang le di-windshield tse ka fetofetolwang bakeng sa ho patlalatsa moya ka mokgwa o ntlafetseng. 