KAESER report
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KAESER COMPRESSORS

# Fresh air, fresh fish

**Six rotary blowers for trout farm**

From rural fishpond to automated aqua farm in Poland

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Systematic fish farming dates back to the Middle Ages when monasteries had to ensure an adequate supply of fish to last through seasonal observances of fasting and abstaining from meat. Farming operations to plan and control fish reproduction have been around since the 15th century. Today, industrial fish farming is a sophisticated mechanized arm in the food production industry.

Over half the fish farmed around the world today including trout are salmonids. Traditionally, trout farms in Poland are relatively small family businesses where product quality remains high during every stage of the process.

Mieczysław Pełka's rainbow trout farm is situated in the northeast corner of Poland's Kashubian Lake District. This is where he prepares the hatchlings or"fry". It normally takes approximately one-and-a-half years for a rainbow trout to go from a newly hatched fry to a ready-to- harvest fish. To ensure that quality remains consistent, Pełka buys purified fry that turn into healthy, diseaseresistant fish. About 450,000 fish eggs are bred in incubators. When all the nutrition in the eggs has been consumed, the fry are transferred to pre-breeding ponds.

The important thing now is to properly feed the hatchlings, five to six times a day. Trout are predators and need animal feed or fish meal. Water temperature also plays an important role. Wild trout thrive in cool, crystal-clear waters even when they are farmed. When the water temperature rises above 64° F, the fish do not develop as well and are more susceptible to disease. Says Pełka: "You can't fool trout when it comes to food and their environment. They need exceptionally clean water and top quality food. They are the 'aristcrats' of the fish world."

When the young fish in the pre-breeding ponds weigh between ten and twelve grams, they are moved to the breeding ponds, where the water is about five feet deep. Two pools joined by chutes form a single unit that can accommodate approximately seven tons of fish. Air delivered by rotary lobe blowers plays a vital role in ensuring that the fish are raised in the best possible environment.

Six Kaeser Omega blowers, two DB 166 OFC units and two DB 236 OFC machines, run continuously in an adjacent building. They have three important jobs: The first is aeration. To saturate the water with oxygen, an air chamber with perforated rubber membranes that emits fine bubbles is installed in the water at a depth of six feet deep.

The Kaeser blowers' second task consists of supplying air to remove the fish waste from the water. Nitrites that are harmful to the fish are converted to safe nitrates in a nitrification chamber.

And finally, air from the blowers generates large air bubbles via diffusers installed at the bottom of the


***One of the key factors in Pełka's fish farming success is a reliable oxygen supply from Kaeser Omega blowers.***

***A seething mass of fish: young trout in the pre-breeding basin.***

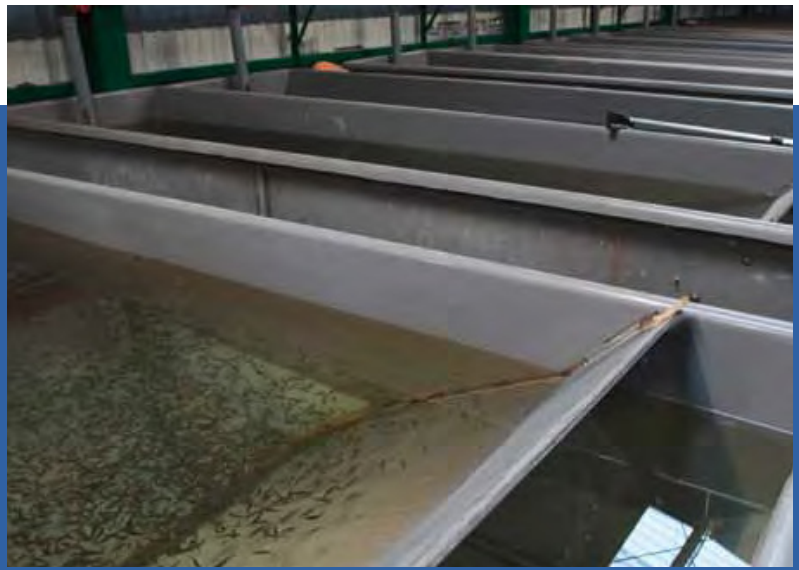
basin, 12 feet deep, which raise the water level by over four inches. The changing water levels help circulate the water and the bubbles also add to the water's oxygen concentration.

Two existing Kaeser rotary blowers had reliably delivered the necessary air for many years, so when it came to investing in new compressed air equipment for a planned expansion, the owners knew that Kaeser was the way to go and as a result four additional Omega blowers were added to the system.

When the fish weigh about 100 grams they are pumped to a larger basin, and the breeding basins are filled with a fresh supply of young fish. The fish in each basin must all be similar size, otherwise the larger ones would eat the smaller ones.

Before further processing, the fish are placed in sparsely populated ponds fed by water from the Okalica River, so that they acquire a true freshwater trout flavor.

*By: Robert Ryt*



***Young trout in the pre-feeding basin.***