ABSTRACT

The researcher measured the physical characteristics of 50 Yang Na seeds. It was found that the straight wing length was 10.68 ± 1.26 cm, the wing width was 8.46 ± 1.11 cm, the wing length was 2.37 ± 0.36 cm, the wing angle was 42.94 ± 1.78 degrees, and the wing length decreased to 1.02 ± 0.25 cm, respectively. The physical characteristics of both wings were not significantly different at the .05 level.

The results of the experiment, the Yang Na seed was released 3 meters from the reference position and timed. The data obtained from the experiment were plotted in graphs to analyze the relationship between the physical characteristics of the Yang Na seeds and the time of landing. It was found that the relationship between the wing angles of the Yang Na seeds and the landing time. The longest landing Yang Na seed in the air at an angle of 46 degrees. The longest wing length of the Yang Na seeds floating in the air is 13 centimeters. The width of the Yang Na seed was not related to the time it fell to the ground. Therefore, the measured mean was the fixed wing length of 8.5 cm and the fixed wing width of 2.4 cm, respectively.

The prototype propeller has a wing angle of 46 degrees with four different angles: 44, 46, 48, and 50 degrees. The 46 degree wing angle Yang Na Seed mimics propeller is the best performance of oxygen gas in water with a 10 DO value. In a period of 15 minutes, it can be filled oxygen gas with 8.25 milligrams per liter. When drilling holes in the wings of the impeller, 2 holes on each side, it was found that the efficiency of oxygen gasification in low DO water was the best. In 15 minutes, it can be filled with 8.5 mg of oxygen. The prototype propeller imitates the Yang Na Seed, able to add oxygen gas to the wastewater from natural water sources with a filling rate of 0.31 milligrams per liter per minute. Therefore, the propeller can be used to solve the problem of adding oxygen gas to wastewater as well.

CONDUCTING RESEARCH

Chapter 2.1 Study the efficiency of the prototype propeller.

Find the efficiency of the prototype propeller. Study the efficiency of the prototype propeller imitating Yang Na Seeds found that when the propeller was used, it operated the same as the original Yang Na Seed. The propeller imitating Yang Na Seeds, the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In 10 minutes, it can be filled with 0.25 milligrams per liter.

During the first 15 minutes, the Propeller imitating Yang Na seeds quickly injected with oxygen gas with a filling rate of 0.31 milligrams per liter per minute. After 15 minutes, the oxygen gas filling rate began to decline with a filling rate of 0.06 milligrams per liter per minute. The propeller can be used to solve the problem of adding oxygen gas to wastewater as well.

Chapter 2.2 Study the efficiency of the prototype propeller.

The propeller imitating Yang Na Seeds the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In a period of 10 minutes, it can be filled with 0.25 milligrams per liter. The propeller can be used to solve the problem of adding oxygen gas to wastewater further.

Chapter 2.3 Study the efficiency of the prototype propeller.

The propeller imitating Yang Na Seeds, the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In a period of 15 minutes, it can be filled with 0.25 milligrams per liter. The propeller can be used to solve the problem of adding oxygen gas to wastewater further.

Chapter 2.4 Study the efficiency of the prototype propeller.

The propeller imitating Yang Na Seeds, the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In a period of 15 minutes, it can be filled with 0.25 milligrams per liter. Therefore, the propeller can be used to solve the problem of adding oxygen gas to wastewater further.

Chapter 2.5 Study the efficiency of the prototype propeller.

The propeller imitating Yang Na Seeds, the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In a period of 15 minutes, it can be filled with 0.25 milligrams per liter. Therefore, the propeller can be used to solve the problem of adding oxygen gas to wastewater further.

Chapter 2.6 Study the efficiency of the prototype propeller.

The propeller imitating Yang Na Seeds, the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In a period of 15 minutes, it can be filled with 0.25 milligrams per liter. Therefore, the propeller can be used to solve the problem of adding oxygen gas to wastewater further.

Chapter 2.7 Study the efficiency of the prototype propeller.

The propeller imitating Yang Na Seeds, the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In a period of 15 minutes, it can be filled with 0.25 milligrams per liter. Therefore, the propeller can be used to solve the problem of adding oxygen gas to wastewater further.

Chapter 2.8 Study the efficiency of the prototype propeller.

The propeller imitating Yang Na Seeds, the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In a period of 15 minutes, it can be filled with 0.25 milligrams per liter. Therefore, the propeller can be used to solve the problem of adding oxygen gas to wastewater further.

Chapter 2.9 Study the efficiency of the prototype propeller.

The propeller imitating Yang Na Seeds, the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In a period of 15 minutes, it can be filled with 0.25 milligrams per liter. Therefore, the propeller can be used to solve the problem of adding oxygen gas to wastewater further.

Chapter 2.10 Study the efficiency of the prototype propeller.

The propeller imitating Yang Na Seeds, the wingspan angle of 48 degrees, has the best efficiency for oxygen gas filling in water with low DO values. In a period of 15 minutes, it can be filled with 0.25 milligrams per liter. Therefore, the propeller can be used to solve the problem of adding oxygen gas to wastewater further.