

An Armed Concrete Langstroth Hive: A Prototype to Popularize on Bail of a Patent

Kodjo Logou Agossou

Agricultural Engineer, Station Agro-Apicole De Recherche Et Production (SAAR-P), Guérin-Kouka, Togo

Corresponding author

Kodjo Logou Agossou, Agricultural Engineer, Station Agro-Apicole De Recherche Et Production (SAAR-P), Guérin-Kouka, Togo.
Email: agossoumartine@gmail.com

Received: November 26, 2025; **Accepted:** December 09, 2025; **Published:** December 19, 2025

ABSTRACT

Context: In modern beekeeping, the langstroth is both the most used hive and one of the models against which many tools and technologies are designed. But the board used in the construction of such building is not without drawbacks for beekeeping and our environment.

Keywords: Langstroth, Concrete, Economical, Ecological, Patent, Dissemination

Objective

This research aims at the use of reinforced concrete for the body of such a hive.

Problem Statement

Obtaining a board only occurs after you have cut down a tree. An action which either reduces the capacity of the flora to provide bees with food and medicinal substances, destroys the key factor of the ecosystem that the trees represent or in certain particular cases causes the disappearance of valuable plants varieties. The use of concrete is therefore designed to overcome this waste.

Materials and Methods

This work required an original mold of my own design, a trowel, a tray then the following materials: gravel, sand, cement, water, 6mm reinforcing iron for respective quantities of 5478136 cubic millimeters, 3652091 cubic millimeters, 4 kilograms, 2 liters, 4420 millimeters for a whole body. The iron bar is cut into rewelded pieces to form a skeleton approximately reminiscent

of the arrangement of the edges of a rectangular parallelepiped measuring 505 x 415 x 210 cubic millimeters. The concrete ingredients are mixed in the tank, then sprinkled well with water to be poured into the mold after the iron skeleton has been placed there.



Figure 1: Main organ of the mold

Result and Discussion

Ten hours later, the stripped formwork reveals a rectangular parallelepiped box with a cavity of 466 x 376 x 240 cubic millimeters and a wall of 22 millimeters of thickness.

This box takes ten frames with useful dimensions of 415 x 198 square millimeters and a span of 475 millimeters each. Two holes drilled in front of one of the small facades of the structure allow you to hang the pollen trap. It costs four euros and weights twenty kilograms compared to twelve euros and seven kilograms for the wooden specimen.



Figure 2: Two concrete langstroth bodies

Conclusion

This model appears to be ecological and economical as well. It can also help to solve other problems such as the deterioration of hive by termites, other organisms, vegetation fires and weather. For these reasons, I call for any form of partnership aimed at quickly obtaining intellectual property with a view to wide dissemination.