POPULATION HOMEOSTASIS

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Annotation: All living biological systems have more or less the ability to restore and control their numbers. The preservation of a certain number in the population and its management is called population homeostasis. The homeostasis ability of the population occurs on the basis of the physiological characteristics, growth and behavioral changes of its members, the increase or decrease in the number of the population, and its internal structures.
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Mechanisms of population homeostasis: ecological characteristics of the species, its behavior and the level of influence of predators and parasites on the species. These mechanisms are observed in representatives of some species and lead to the death of excess representatives.
Self-thinning can be taken as an example of homeostaz within the population of wild grasses. When plants (trees, bushes, grasses) grow, some of them die due to the physiological effects of the birds in group A, due to lack of light, food and moisture. The height, root and branching of the one that grew earlier will be fast and good. Then the sprouted representative will be short, with short roots and branches. There is not enough light for it, there is little food and moisture from the roots, as a result such representatives die (cotton, wheat, barley).
The conducted practical experiments also confirm these ideas. For example, clover (Trifolium subterraneum) planted on 1 m2 gave 1250 sprouts, but after 84 days, only 150 of these sprouts grew, and the rest were seen. Second example, 6 kg to 180 kg of mastic seeds were sown per hectare. At the time of seed germination, there were 30 to 1070 stems per 100 cm2. But gradually, the number of stems will reach around 500 on average, and new stems will appear in sparse areas. In plants, the density of population members is controlled by the change in the number of representatives in a certain area. For example. In cotton fields with thick stalks, the leaves of the plant are less branched, the stems are thin, and the mass is dense. very little. The yield will be low. In avian populations, critical management occurs only when vital resources such as food, space, and water are limited. For example, in small water bodies, the adult representatives of the fish eat with their small representatives and go to the path of cannibalism in times of hunger. Controlling the population of insects, the representatives beat each other, outcompete each other and control the level of importance in the population. The number and density of members of the population decreases with the reduction of egg laying in parasitic winged insects.
In the case of apple borer (Laspeyresia pomonella) and leafhopper moth (Plulella maculi pennis), they control their number and density in the population by competing for food and egg laying.
During nesting, some birds drive other birds away from their territory (by flapping their wings, kicking, making noises) and move towards increasing population density. Small breeders (cyFyp, sichkop, etc.) also define their boundaries as much as possible and try not to introduce other representatives. This situation is especially evident in large mammals. The chemical interaction of most species representatives plays a big role in controlling population growth. For example, in a 75-liter aquarium, an oxide compound released from a single fish stops the development of small fish in this aquarium. In natural ponds, large seals come out of the water, and after their poisonous offspring hatch, small seals develop here. Plants also release substances into the environment that stop the growth and development of other organisms. For example, substances isolated from green algae, chlorella, scenedesmus, onions, and garlic stop the development of pathogenic bacteria and fungi, keep their populations clean, and control their density.

Thus, the number, density, composition, structure and internal-external relations of population members are controlled by themselves. The population self-management mechanism is not a closed system, but a system that is always in active contact with the external and internal environment. In the self-management of the population, the increase of representatives and the density created their limiting abilities.

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