

IMPACT OF AGGRESSIVE ENVIRONMENT ON TECHNIQUES USED IN HORTICULTURE AND MEASURES TO PREVENT IT

Khojimatov A. A.

Independent Researcher, Andijan State Technical Institute

aziznido20@gmail.com

<https://www.webofscience.com/wos/author/record/HKV-1215-2023>

<https://orcid.org/0000-0003-1238-7989>

Abstract

This article discusses the impact of aggressive environments on the service life and efficiency of horticultural machinery. Soil moisture, fertilizers, chemicals, and atmospheric factors accelerate corrosion processes in metal and polymer parts. In addition, the performance of the equipment decreases and maintenance costs increase. The article analyzes measures to prevent these negative effects by reducing corrosion and mechanical damage, using protective coatings, conducting regular preventive maintenance, and using modern materials.

Keywords: Gardening techniques, aggressive environment, corrosion, protective coating, prevention, service life, efficiency.

Introduction

The economy of Uzbekistan is one of the countries that is developing rapidly. In this regard, the majority of the economic development falls on agriculture. Therefore, in order to increase the economic efficiency of agriculture, it is important to further improve and perfect the conditions and conditions imposed on it. The production of agricultural products depends mainly on soil fertility, the type of cultivated variety, agricultural technology of cultivation, as well as climate and natural resources. Different regions of the republic are adapted to growing crops in different ways. This is due to the natural climate and soil fertility in the regions. Maintaining the soil fertile and in good condition depends on land reclamation measures. If the land reclamation system is not properly established, the fertile layer of the soil will deteriorate and over time it may turn into

completely unproductive soil. Therefore, when carrying out land reclamation measures, it is necessary to properly organize the use of land reclamation equipment and their maintenance. In addition, horticulture is also widely developing in agriculture. In particular, horticultural farms specializing in viticulture and the cultivation of various fruit crops are increasing day by day. The role of machinery in increasing their productivity is immeasurable. Machinery directly assists in the processes of loosening the soil in the gardens, processing and harvesting fruits. This allows the machinery to perform seasonal work and be used for other agricultural work or stored. The storage process can be long-term and short-term. Short-term storage is for at least one month. Long-term storage is for at least three months. Each storage period has its own requirements. Storage periods and conditions are determined depending on the type of equipment and the work it performs. There is no specific time for storing land reclamation equipment, since this equipment can work in any season. However, at a certain time, when the work is not specified, it becomes idle and goes into storage conditions. This time can be 1 day or several months. The results of the experiments are presented in the table below, and during the reclamation activities, the equipment directly interacts with the aggressive environment.

Table 1 Comparison of working parts corrosion
(2 years) from being used after)

Details	Corrosion area dm ²			Corrosion damage (%)		
	Those who worked	Those who did not work	Corrosion increase	The Ishlagans	Work-guns	Corro-zianing ortishi
Frame loungers	399	105	294	95	25	70
<i>Jon boards</i> : alcohol	280	80	200	88	26	62
stone	285	100	185	82	30	52
<i>Front board</i> : internal	83	20	63	72	18	54
outside	67	40	27	61	36	25
<i>Rear board</i> : internal	94	30	64	80	30	50
outside	110	50	60	100	50	50
<i>Body tubes</i> : internal	0	0	0	0	0	0
outside	150	50	100	100	33	67
<i>Measuring block</i> : internal	31	1	30	100	5	95
outside	31	3	28	100	10	90
Scammer device reinforcement bracket	10	1.5	8.5	100	15	85
Conveyor wires	200	20	180	100	10	90
Conveyor rollers	2	0	2	100	0	100
Transporter 10 silent stargazers	3	0	3	100	0	100
Spreader disc	69	45	24	98	64	34
Disc shovels	4	2	2	100	50	50
Pulleys	31	10	21	100	35	65
Pipes	89	5	84	94	5.3	88.7
According to the average scatterer:	3230	934	2296	86.9	26.7	60.2

During operation, certain working (metal surface) parts of the machine are in a state where rust can form. Rust occurs under the influence of chemical processes affecting the working part (metal surface). Over a certain period of time, the metal surface loses its corrosion resistance. If this surface is coated with a specially modified coating, a protective layer is formed on its surface and the corrosion process is prevented. The purpose of our research is to identify the most alternative way to protect metals from corrosion and determine its economic efficiency.

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