

## Dynamics of soil physical and chemical properties within horizontal ridges-organic fertilizer applied potato land

<b>Publons ID</b>	36301518
<b>Wos ID</b>	WOS:000481624500024
<b>Doi</b>	10.1088/1755-1315/255/1/012024
<b>Title</b>	Dynamics of soil physical and chemical properties within horizontal ridges-organic fertilizer applied potato land
<b>First Author</b>	Wijaya, Krissandi; Kuncoro, Purwoko Hari; Arsil, Poppy;
<b>Last Author</b>	
<b>Authors</b>	Wijaya, K; Kuncoro, PH; Arsil, P;
<b>Publish Date</b>	2019
<b>Journal Name</b>	1ST INTERNATIONAL CONFERENCE ON LIFE AND APPLIED SCIENCES FOR SUSTAINABLE RURAL DEVELOPMENT
<b>Citation</b>	2
<b>Abstract</b>	<p>Although the horizontal (contour) ridge has been shown to be significantly effective in reducing erosion within potato land in our previous study, it tends to enhance waterlogged in the soil by which the productivity of crop may be decreased. Beside the availability of organic materials, the dimension of ridge may also affect the waterlogged. However, their impact on the soil properties have been yet less paid attention. This study was aimed to identify the effect of horizontal ridges dimensions on soil physical and chemical properties over organic fertilizer applied potato land. Totally 9 potato plots of 3x3 m(2) were prepared in Serang village, Purbalingga with three different dimensions and replications of the horizontal ridges: 30x 30x30 cm(3) (HR30), 30x40x30 cm3 (HR40), and 30x50x30 cm3 (HR50). Petroganik (C-org: 12.5%, C/N ratio: 10-25) fertilizer of 20 ton ha(-1) was applied into these plots. Soil samples were collected from each plot at 0, 8, 35, 71, and 91 days after planting using 100-cc ring samplers. The physical (volumetric water content, dry bulk density, permeability) and chemical (total-N, total-P) properties of soil were then analyzed in laboratorium using gravimetric and Kjeldahl-Colorimetric method, respectively. The results showed that the soil volumetric water content and dry bulk density increased with increasing the ridges dimensions, of which the highest values of 0.450 cm(3)cm(-3) and 0.730 gcm(-3) each were found in HR50. Conversely, the soil permeability decreased with increasing the ridges dimensions, of which the highest value of 0.027 cms(-1) was encountered in HR30. The soil total-N and total-P contents were slightly fluctuated, of which the highest values of 4.111 and 2.213 tonha(-1) each were seen in HR40. Thus, the horizontal ridge with 40 cm-width might be the most suitable for the organic potato cultivation.</p>
<b>Publish Type</b>	Book in series
<b>Publish Year</b>	2019
<b>Page Begin</b>	(not set)
<b>Page End</b>	(not set)
<b>Issn</b>	1755-1307
<b>Eissn</b>	
<b>Url</b>	<a href="https://www.webofscience.com/wos/woscc/full-record/WOS:000481624500024">https://www.webofscience.com/wos/woscc/full-record/WOS:000481624500024</a>
<b>Author</b>	PURWOKO HARI KUNCORO, S.TP, M.Agr, Ph.D