

COMMUNITY EMPOWERMENT OF PONORAGAN VILLAGE, LOA KULU DISTRICT THROUGH EDUCATION AND COMPOSING WITH The TAKAKURA METHOD

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ABSTRACT

Garbage is an object or material that is no longer used by humans so that it is thrown away. The societal stigma regarding waste is that all garbage is disgusting, dirty, etc., so it must be burned or disposed of properly. All community activities always generate waste. Takakura is a household-scale composting method using the "Takakura Basket" which was introduced by Koji Takakura, a waste expert from Japan. A simple composter in the form of a basket that can accommodate household organic waste such as leftover rice, vegetables, and other organic waste and turn it into compost. data collection activities were carried out using interview and questionnaire methods on 23-25 November 2021. The method for determining problem priority was the Capability, Accessibility, Readiness, and Leverage (CARL) method. Training on making Takakura baskets on Thursday, December 13, 2021, at 08.00 WITA at the Melati White Posyandu, Ponoragan Village, Loa Kulu District. This activity was attended by 24 participants. Wilcoxon test results show that the significant value is (p 0.000). This value has a value smaller than the alpha value ($\alpha 0.05$). The interpretation obtained is that there is an increase in respondents' knowledge. The results related to counseling on making Takakura baskets are in line with those carried out by (Rozikin et al., 2019). Field Learning Practice Activities (PBL) Students of Muhammadiyah University of East Kalimantan conducting training and education by making compost using the Takakura method succeeded in providing knowledge to the people of Ponoragan Village RT 06.

Keywords: Community Service, Education, Takakura, Compost

INTRODUCTION

Rubbish is object solid that comes from from activity house stairs, office, home lodging, hotel, restaurant, industry, rubble ingredient buildings, and iron old used wear. by vehicle motorized. Rubbish is results side from things that have been no used again. Community stigma related rubbish is all rubbish that disgusting, dirty, etc. so that must burned or thrown away as should be. All activity Public always cause trash. (Istanti, 2022).

In operate activity a day day certain produce rubbish good that rubbish organic nor rubbish inorganic. Amount trash that will the more increase along with amount population that is getting more and more increase and diversify activities carried out. (Amir et al., 2021) Enhancement amount population can increase amount generation trash and more variety activities carried out make the more many type generated waste. _ from thing the so must change habit throw away rubbish changed Becomes process rubbish with right. Concepts that can be conducted for resolve problem the is the 3R concept is *Reduce* (reduce use trash), *Reuse* (use repeat), *Recycle* (change the thing that was no beneficial Becomes useful stuff. _

Rubbish is consequence from existence activity humans who produce exile or waste, existing processing _ moment this only limited to processing rubbish by conventional that is only transported from the place producer rubbish to TPS (Place Disposal while) and then only thrown away so just to TPS without conducted processing more first, though rule procedure management must - have trash conducted that is collection rubbish then recycled repeat and discard to The place Disposal Meanwhile, DKPP then carried out transport trash that will dumped in place Final Disposal. (Fadhilah, 2011). Rubbish until moment this get attention are you serious

from government , because rubbish could make threat damage ecosystem . (Hansen & Yuliawati, 2019) . Sampah yang tidak dikelola dengan baik tentunya akan mendatangkan masalah bagi lingkungan (Widikusyanto, MJ, Wahyu, OW, & Hermansyah, 2015)

Berdasarkan RI Law No. 18 of 2008 concerning management trash , trash merupakan remainder activity daily human and/ or natural processes in the form of solid . This limitation write that every activity man will always produce remainder activity called _ with trash . As the consequences generation rubbish will Keep going increase along with increase activity human . increase amount population in an area causes more waste is generated . _ One of them is rubbish house stairs which are contributor biggest in enhancement amount trash in an area. Existence rubbish house stairs in this area _ no can avoided . This thing because management still trash _ dominated with system collection garbage , transport garbage and disposal to The place Final Processing (TPA). (Ariyanti et al., 2021).

Takakura composting is also known as Takakura Home *Method Composting* method making compost for recycle repeat rubbish kitchen . Method this was first introduced in Surabaya in 2004 by a nationality Japan named Mr. Takakura. Method Takakura composting has superiority compared with method composting others , namely : 1. Practical because it fits for housing area with land that is not so width . Basket could placed anywhere _ in accordance with need and availability land . 2. Easy because rubbish only entered , every day . Without there is treat special like add fluid or materials another addition . 3. No smells because the process through the fermentation process , not decay . Studies optimization Takakura composting with addition husks and bran show results that Content of Carbon, Nitrogen, Phosphorus and Overall C/N Ratio compost ripe has Fulfill standard in SNI 19-7030-2004, standard international , and the Department Agriculture , but still not yet in accordance with standard Department Agriculture and PT. PUSRI. (Rezagama , Arya and Samudro, 2015).

Composting conducted for 30 days by aerobics use Takakura basket . Ingredient compost chopped Becomes size 1.5cm. According to (Light & Adi Nugroho, 2019) size materials recommended for composting _ aerobics between 1-7.5 cm. This thing for accelerate the process of decomposition by bacteria and facilitate mixing material . During composting conducted measurement temperature and pH, as well as water level . Working water level in accordance with specified variation _ namely 40%, 50%, and 60%. After 30 days and compost already ripe , tested for COrganic , N-Total, P-Total, K-Total, C/N ratio , and toxicity test compost .

Composting process by natural by agent decomposer or also called MOL requires long time (six month until a year), so that moment this many developed product agent decomposers produced _ by commercial for increase speed decomposition , increase decomposition Theory organic , and can increase quality product end (Nuryani et. al, 2002). Composting results made from raw rubbish declared safe for used when rubbish organic has composted with perfect . one _ indication seen from maturity compost that includes characteristics physical (smell , color , and texture that have been resembling land , depreciation heavy reach 60%, neutral pH , temperature stable). (Nurullita & Budiyono, 2012) Various MOL type indeed has available in the market , however thereby there is several MOLs that can be made from materials simple easy _ got in scale house ladder like tape, stale rice or rubbish house ladder that alone .

Based on Devotion (Biology et al., 2015) , manufacture fertilizer organic with method takakura use addition EM4 bioactivator and without addition EM4 bioactivator . On manufacture fertilizer organic takakura with addition EM4 bioactivator was found results fertilizer very black _ resembling earth , smell land and own texture crumb as well as smooth , while fertilizer organic takakura without addition EM4 bioactivator was obtained results colored more chocolate , smell like land and own texture crumb however more rough .

one _ method for handle rubbish organic house ladder is through the manufacturing process compost . Composting is a decomposition process materials organic with help microorganisms . In general , composting experience in progress long enough , that is about 3-4 months . because _ that , accelerate the manufacturing process compost could conducted through use bioreactor containing _ mixture ingredient organic and microorganism decomposer . Bioreactor for making

compost scale house ladder could made from basket and through utilization goods used . (Wiryono et al., 2020)

Based on field observations per problem Village / Village Ponoragan Loa Kulu District especially those in RT 06 , namely lack of public knowledge related waste problem because almost all local residents/communities throw trash brand a without To do sorting and doing how many a? Public To do burning with method open . Based on the problems above , it is important to do it something intervention program aims to increase public knowledge regarding environmental health issues specifically sorting rubbish organic and inorganic and how to deal with it . This activity is located in Kelurahan / Desa Ponoragan Loa Kulu District . Village / Village Ponoragan Loa Kulu District is one of the selected locations for did it activity Devotion to society .

IMPLEMENTATION METHOD

At the moment To do activity this previous telah dilakukan coordination with party government Village Ponoragan and the Head of RT 06 discussed about permission To do activity Devotion masyarakat. Set eit up To do permission , next activity data collection is carried out dengan use teknik method interviews and questionnaires on 23-25 November 2021 sehingga didapatkan. a number of problems that exist in RT 06 Desa Ponoragan.

Pproblems that arise di RT 06 Desa Ponoragan among others , pengelolaan sampah organic dan anorganik serta penggunaan type the place open .trash _ Mpeople di RT 06 desa Ponoragan masih use the place open trash and also for problem an yang lainnya that is belum dilakukaannya pick ahan rubbish by the community of RT 06 Desa Ponoragan. In stages pelaksanaan Strategy masyarakat ini service yang dilakukan starts from coordination until with program implementation

After identify the problem is there , then Step next is determination priority problem with method *Capability, Accessibility, Readiness, and Leverage* (CARL). Method this later will determine problem what happened _ priority for To do intervention . Dari hasil penentuan prioritas masalah didapatkan permasalahan yang utama yaitu pemilahan sampah organic dan anorganik serta penggunaan tempat sampah yang terbuka sehingga hal ini menjadi prioritas kami untuk melakukan Devotion masyarakat di RT 06 Desa Ponoragan. Adapun untuk tahap kegitannya adalah sebagai berikut:

1. Tahap observasi
2. Pengambilan Data
3. Pelaksanaan Kegiatan
 - a. Penyuluhan pemilahan sampah organic dan anorganik
 - b. Pembuatan keranjang kompos metode takakura

RESULTS AND DISCUSSION

Before To do counseling previously devotion Public To do observation by direct to community in the neighborhood of RT 06 Desa Ponoragan Loa Kulu District about how system disposal garbage in RT 06. Observation conducted During three day namely on November 25 to 28 , 2021. Observations made by direct get results where still many people who don't sort rubbish organic and inorganic with true and still many the throwaway society rubbish organic like remainder vegetables or remainder ingredient food is wasted carelessly behind _ house without conducted processing more first . From result observations made _ so devotion To do counseling about how sorting rubbish organic and trash inorganic with Correct as well as give training how method process rubbish organic Becomes fertilizer compost with use method Takakura basket .

We do Devotion Making Takakura basket and sorting trash on the day Thursday , December 13 , 2021 at 08.00 WITA at Posyandu Jasmine White Village Ponoragan Loa Kulu District . At the moment To do Devotion activity that , attended participant as many as 24 participants . On Devotion making Takakura basket and sorting trash , we give information about processing return rubbish organic Becomes fertilizer compost and how method sorting rubbish organic and inorganic with right . Society can see direct method making fertilizer compost with method Takakura basket and sorting trash . We use rubbish organic from remainder harvest vegetables

residents in RT 06 Village Ponoragan and trash around office Village Ponoragan . After To do activity counseling and training the then on December 15 , 2021 we do return observation for see is Public apply sorting rubbish organic and inorganic as well as process rubbish organic Becomes fertilizer compost with use method Takakura basket . From result our observations _ obtained results community that has Becomes respondent has To do sorting rubbish organic and inorganic with Correct at home each respondents and apply processing rubbish organic Becomes fertilizer compost with use method Takakura basket . However there is a number of people who haven't To do processing rubbish organic with method Takakura basket due to Public anything yet _ had time make Takakura 's basket .



Figure 1. Devotion Takakura Making

We hope to whole Public Village Ponoragan with existence activity Devotion making Compost with Takakura method and sorting rubbish this can utilise rubbish organic Becomes fertilizer compost as well as could minimize rubbish organic not _ used again and differentiate rubbish organic and trash inorganic . Evaluation Before To do counseling participant more formerly fill in question pre test about management waste liquid and waste congested house stairs and storage rubbish as well as management rubbish use Takakura method with destination for knowing knowledge all participant before doing _ his counseling .

Table 1. Pretest Results

No	Knowledge	n	%
1	Very good	7	29.2
2	Well	14	58.3
3	Enough	2	8.3
4	Not enough Well	1	4.2
	Total	24	100.0

Based on table on knowledge ability participant about management waste liquid and waste congested house stairs and storage rubbish as well as management trash that has very good knowledge totaling 14 people with percentage 58.3%. After To do counseling to respondent next respondent doing Post test about Management waste liquid and waste congested house stairs and storage rubbish as well as management this Post Test trash conducted for measure level knowledge respondent after counseling . Following this the results of the post test counseling .

Table 2. PostTest Results

No	Results Post Test	n	%
1	Very good	20	83.3

2	Well	4	16.7
	Total	24	100.0

Based on table on knowledge ability participant about management waste liquid and waste congested house stairs and storage rubbish as well as management trash that has very good knowledge totaling 20 people with percentage 83.3%. For see is there is difference Among before To do counseling and after To do counseling using *Wilcoxon* test test this conducted because the data obtained no normally distributed . from thing the if no normally distributed then data testing must using non- parametric test or *Wilcoxon 's test* .

Activity sorting rubbish organic and inorganic aim for increase knowledge respondent related how sorting rubbish organic and inorganic with right . Result of training this showing many society that becomes understand how method sort rubbish with true and in practice by straight away . Devotion this in line with service performed by (Latifatul et al., 2018) results research , found happening reduction in waste volume discarded inorganic _ to environment and changes respondent in manage rubbish house stairs . Change the has observed by researchers and included to in sheet observation . As for the stages management trash done _ that is sorting 2 types of waste and containers 2 types of trash . Devotion this is also in line with service performed by (Hansen & Yuliawati, 2019) where devotion conducted to student __ 1st grade to 3rd grade SDN 015 Samarinda Ulu with give counseling about sorting rubbish based on 3 types the place rubbish that is the place plastic waste , place rubbish leaves , and places rubbish paper .

Table 3. Knowledge level before and after education

Test	n	Flat-flat	Big Boost an	P.Value
Knowledge level Before education (<i>Pre test</i>)	24	9.12	0.71	0.000
Level Knowledge after education (<i>Post Test</i>)	24	9.83		

The outreach activity related to making Takakura baskets aims to increase respondents' knowledge regarding processing organic waste into compost using the Takakura basket method. The results of the outreach activities show that there is an increase in public knowledge about how to properly sort waste and practice how to make Takakuran baskets. This activity has an impact on increasing knowledge by 0.71% related to Takakura counseling. *Wilcoxon* test results show that the significant value is ($p = 0.000$). This value has a smaller value than the alpha value ($\alpha = 0.05$). The interpretation obtained is that there is an increase in respondents' knowledge. The results related to the counseling on making Takakura baskets are in line with research conducted by (Rozikin) where in this study the results of the *pre-test* and *post-test* activities were carried out to measure the level of understanding of students in terms of environmental awareness, students who were the targets in this study experienced better knowledge. significant (Rozikin et al., 2019) . This service is also in line with the service carried out by (Hananingtyas et al., 2021) which got the results that after participating in the Service, 67.9% agreed that there was an increase in knowledge related to making compost by utilizing kitchen waste. And as many as 50% of respondents agree that this takakura method is easy to apply at home. This Takakura basket-making training is also in line with the dedication carried out by

Waste management with simple methods such as the Takakura composting method in the residential environment needs to be addressed to reduce waste generation and poor waste management by burning. The dedication of making compost using the Takakura method in this service activity aims to: (1) Increase the knowledge of the people of Kedung Sumur Village about household waste management. (2) Empowering the community in sorting household waste. (Ghufron et al., 2017)



Figure 2. With counseling respondents

CONCLUSIONS AND RECOMMENDATIONS

Community Service and Education Activities by making compost using the Takakura method and sorting organic and inorganic waste have succeeded in providing knowledge to the people of Ponoragan Village, RT 06, which is considered quite successful. This is evidenced by the interest of the Devotion participants in the given program, and the interest of the participants to start managing the waste they produce from their respective homes. Devotion has taken notes success introduce technology appropriate To use in processing rubbish organic through composer simple method that can be applied in the household environment with the Takakura Basket Method.

THANK-YOU NOTE

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