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## **Wrap the Dead : The funerary textile tradition from the Osmore Valley, South Peru, and its social-political implications**

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# APPENDIX 5: CALCULATION OF TIME AND MATERIAL EXPENDITURE FOR WARP-FACED CAMISAS

## **I. Camisa #99305 (Centro Mallqui code 3-026), type 3Adb; Unknown gender and age La Cruz (1998), Tomb 8; Ilo-Tumilaca/Cabuza culture.**

Warp: camisa 121 cm long x 2 = 242 cm  
Weft: 97 widening to 103 weft width (semi-trapezoidal by spreading the warps)  
average width: 100 cm  
26 warps/cm (upper and lower warps) average;  
7 wefts/cm average  
Neck split 34 cm in total (front 18.5 and back 15.5 cm);  
arm opening 18 cm  
Quality score = 8.5

### **1. loom preparation and warping process:**

prepare loom: 72 minutes (12 + 28 + 32 minutes, see §4.8)  
warping: 206 minutes (total width 100 cm x  
20.6 min/10 cm avrg)  
**total: 278 minutes = 4.6 hours**

### **2. weaving:**

242 cm total length – 20 cm finish area = 222 cm  
222 cm: 4.5 cm/hour (*average weaving time*) =  
49.3 hours of weaving  
+ 8 hours to finish 20 cm of weaving with needle  
**total: 57.3 hours**

### **3. plying:**

#### **warp length and time:**

242 cm total length + 6% compensation = 256.5 cm  
256.5 cm x 26 warps /cm x 100 cm total width =  
6669 metres of plied warps  
6669 metres: (21.8 plied metres/10 min. = *ply average*) =  
305.9 of 10 minute-units = 51 hours

#### **weft length and time:**

100 cm average weft width x 7 weft/cm x 242 cm total length =  
1694 metres of plied wefts  
1694 metres: (21.8 plied metres/10 min = *ply average*) =  
77.7 of 10 minute-units = 13 hours

#### **warp and weft length and time:**

6669 metres warp + 1694 metres weft =  
8363 metres of plied yarn  
51 hours warp plying + 13 hours weft plying  
**total: 64 hours**

### **4. spinning:**

8363 metres of plied yarn x 2 ply = 16,726 metres x 1.1 (compensation) = 18,398.6 metres in total of spun yarn  
18,398.6 metres: (17.4 spun metres/10 min = *spin average*) =  
1057.4 of 10 min-units  
**total: 176.2 hours**

#### **total time and material required for the production of camisa #99305**

18,398.6 metres of spun yarn	=	176.2 hours	58.3 %
8363 metres of plied yarn	=	64.0 hours	21.2 %
time loom preparation and warping	=	4.6 hours	1.5 %
total time for weaving camisa	=	57.3 hours	19.0 %
<b>total time:</b>		<b>302.1 hours</b>	<b>100 %</b>
<b>total amount of spun yarn:</b>		<b>18.4 km</b>	
+ considerable amount of time for cross-knit loop embroidery of both lateral seams and two neck plaques			

**II. Camisa #99211 (Centro Mallqui code 01-1014.01),  
type 6A, worn by adult woman  
La Cruz (1993), Tomb 5; Ilo-Tumilaca and possibly  
Tiwanaku affiliation.**

Warp: camisa 85 cm long x 2 = 170 cm total warp length  
Weft: 84 cm widening to 90 cm weft width  
(semi-trapezoidal by spreading the warps),  
average width 87 cm.  
22 warps/cm (upper and lower warps) average;  
5 wefts/cm average  
Neck split 30 cm in total; arm opening 22.5 cm  
Quality score = 5.5

**1. loom preparation and warping process:**

prepare loom: 72 minutes (12 + 28 + 32 minutes)  
warping: 179 minutes (total width 87 cm x  
20.6 min/10 cm avrg)  
**total: 251 minutes = 4.2 hours**

**2. weaving:**

170 cm total length – 20 cm finish area = 150 cm  
150 cm: 4.5 cm/hour (*average weaving time*) =  
33.3 hours of weaving  
+ 8 hours to finish 20 cm of weaving with needle  
**total: 41.3 hours**

**3. plying:**

**warp length and time:**

170 cm total length + 6% compensation = 180.2 cm  
180.2 cm x 22 warps /cm x 87 cm total width =  
3449 metres of plied warps  
3449 metres: (21.8 plied metres/10 minutes = *ply average*) =  
158.2 of 10 minute-units = 26.4 hours

**weft length and time:**

87 cm average weft width x 5 weft/cm x 170 cm total length =  
739.5 metres of plied wefts  
739.5 metres: (21.8 plied metres/10 cm = *ply average*) =  
33.9 of 10 minute-units = 5.7 hours

**warp and weft length and time:**

3449 metres warp + 739.5 metres weft =  
4188.5 metres of plied yarn  
26.4 hours warp plying + 5.7 hours weft =  
**total: 32.1 hours**

**4. spinning:**

4188.5 metres of plied yarn x 2 ply = 8377 metres x 1.1  
(*compensation for shortening of yarn by plying procedure*) =  
9,214.7 metres in total of spun yarn  
9,214.7 metres: (17.4 spun metres/10 min = *spin average*) =  
529.5 of 10 min-units  
**total: 88.3 hours**

**total time and material required for the production of camisa #99211**

4188.5 metres of spun yarn	=	88.3 hours	53.2 %
9214.7 metres of plied yarn	=	32.1 hours	19.4 %
time loom preparation and warping	=	4.2 hours	2.5 %
total time for weaving camisa	=	41.3 hours	24.9 %
<b>total time:</b>		<b>165.9 hours</b>	<b>100 %</b>
<b>total amount of spun yarn:</b>		<b>9.2 km</b>	

**III. Camisa #02568 (Centro Mallqui code 00/918-1072.05), style 5B, adolescent woman La Cruz (1993), Tomb 15; Ilo-Tumilaca/Cabuza culture.**

Warp: camisa 97.5 cm long x 2 = 195 cm total warp length  
 Weft: 80.5 widening to 114 weft width (semi-trapezoidal);  
 average width: 97.3 cm  
 46 warps/cm (upper and lower warps) average;  
 9 wefts/cm average  
 Neck split 37 cm in total (front and back 18.5 cm);  
 arm opening 16 cm  
 Quality score: 10.5

**1. loom preparation and warping process:**

prepare loom: 72 minutes (12 + 28 + 32 minutes)  
 warping: 200 minutes (total width 97.3 cm x  
 20.6 min/10 cm avrg)  
**total: 272 minutes = 4.5 hours**

**2. weaving:**

195 cm total length – 20 cm finish area = 175 cm  
 175 cm: 4.5 cm/hour (*average weaving time*) =  
 38.9 hours of weaving  
 + 8 hours to finish 20 cm of weaving with needle  
**total: 46.9 hours**

**3. plying:**

**warp length and time:**

195 cm total length + 6% compensation =  
 206.7 cm total warp length  
 206.7 cm x 46 warps /cm x 97.3 cm total width =  
 9251.5 metres of plied warps  
 9251.5 metres: (21.8 plied metres/10 minutes *average*) =  
 424.4 of 10 minute-units = 70.7 hours

**weft length and time:**

97.3 cm average weft width x 9 weft/cm x 195 cm total length =  
 1707.6 metres of plied wefts  
 1707.6 metres: (21.8 plied metres/10 cm *average*) =  
 78.3 of 10 minute-units = 13.1 hours

**warp and weft length and time:**

9251.5 metres (warp) + 1707.6 metres (weft) = 10,959.1 metres of  
 plied yarn in total  
 70.7 hours (warp) + 13.0 hours (weft) =  
**total: 83.8 hours**

**4. spinning:**

10,959.1 metres of plied yarn x 2 ply = 21,918.2 metres x 1.1 =  
 24,110.0 metres in total of spun yarn  
 24,110.0 metres: (17.4 spun metres/10 min *average*) =  
 1385.6 of 10 min-units = 230.9 hours  
**total: 230.9 hours**

**total time and material required for the production of camisa #02568**

24,110.0 metres of spun yarn	=	230.9 hours	62.1 %
10,959.1 metres of plied yarn	=	83.8 hours	22.6 %
time loom preparation and warping	=	4.5 hours	1.3 %
estimated time for insertion discount. warps	=	5.0 hours	1.4 %
total time for weaving camisa	=	46.9 hours	12.6 %
<b>total time:</b>		<b>372.1 hours</b>	<b>100 %</b>
<b>total amount of spun yarn:</b>		<b>24.1 km</b>	