Out Damn Spot! Laundry Testing Stage Blood Recipes

Large Volume Blood Effects led to A Search for a Blood Recipe

- Blood would launder out effectively
- Laundry method must be simple enough for a wardrobe crew after every show including matinees
- Blood recipe ingredients were affordable when used in large quantities

Q? Which blood recipes matched our criteria?

Jessica Mueller and Holly Poe Durbin

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Costume Designer Jessica Mueller
Out Damn Spot!  Laundry Testing Stage
Blood Recipes

Blood Recipes Tested - 12 Types

- One Retail Product: Ben Nye Stage Blood
- Eleven Traditional Recipes With Common Ingredients:
  - Cornstarch Blood
  - Chocolate Blood
  - Corn Syrup Blood
  - Buckets o’ Blood
  - Lo-Cost Blood
  - Cardiff Red Blood
  - Cherry Red Blood
  - MB2 Blood
  - Pudding Blood
  - Realistic Recipe Blood
  - Kool Aid/ Jello Blood

Fibers & Weaves Tested - 23 Types

<table>
<thead>
<tr>
<th>Swatch Fiber/Style</th>
<th>Garments to Emulate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrylic Yarn</td>
<td>Directions, costumes, day wear</td>
</tr>
<tr>
<td>Cotton / Fine Weave</td>
<td>Relaxes, pajamas, aprons, shita, janne</td>
</tr>
<tr>
<td>Linen Straight Weave</td>
<td>Paints, garments, period wear</td>
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<tr>
<td>Polyester / Fine Weave</td>
<td>Silk Substitutes, evening, period wear</td>
</tr>
<tr>
<td>Chiffon</td>
<td>Poly microfiber substitute for silk</td>
</tr>
<tr>
<td>Rayon straight weave</td>
<td>Specific Paints, show fabric, day wear</td>
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<tr>
<td>Kini and Stretch</td>
<td>Evening wear, period wear</td>
</tr>
<tr>
<td>Spandex</td>
<td>Evening or Period Style Fabrics</td>
</tr>
<tr>
<td>Crepe</td>
<td>Evening or Period Style Fabrics</td>
</tr>
</tbody>
</table>

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**Three Swatches Per Recipe of Each Fabric**

Original Fabric, Blood Treated and Laundered

- Three swatches cut from each fabric
- Swatch #1 left alone- the control swatch
- Swatch #2 and #3 treated with same blood recipe
- Blood rubbed into surface, sat for 2 hours
- Swatch #2 preserved to show blood effect
- Swatch #3 pre-washed in Oxy-Clean
- Swatch #3 detergent laundered, dried, ironed

**Testing Methods Duplicated Wardrobe Crew**

All fabrics washed, dried and ironed before testing
Tests Produced 252 Swatches
"The Blood Book"

A comprehensive resource for blood effects

Guide to Results: Each Test Ranked For Wash-ability

1 = Little/No bleeding AND Little/No Visible Residue
2 = Some Bleeding, AND Little/No Visible Residue
3 = Little/No bleeding AND Visible Residue
4 = Bleeding AND/OR Visible Residue
Out Damn Spot! Laundry Testing Stage
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"Out Damn Spot!"
Stage Blood Laundry Test Results

<table>
<thead>
<tr>
<th>Product or Recipe</th>
<th>Cotton Fiber Content</th>
<th>Polyene</th>
<th>Silk</th>
<th>Stretch</th>
<th>Fiber Type</th>
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<tbody>
<tr>
<td>Ben Daye Stage Blood</td>
<td>1 1 1 1 1 1 1 1 1 1</td>
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<td>Cornstarch Blood</td>
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<td>Chocolate Blood</td>
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<td>Corn Syrup Blood</td>
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<td>Baskets v Blood</td>
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<td>Lo-Cost Blood</td>
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<td>Cardiff Red Blood</td>
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<td>Cherry Red Blood</td>
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<td>Heinz Blood</td>
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<td>Pudding Blood</td>
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<td>Realistic Recipe Blood</td>
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<tr>
<td>Koolaid Jello Blood</td>
<td>1 1 1 1 1 1 1 1 1 1</td>
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</tbody>
</table>

0=No Trace
1=Little/ No Bleeding AND Little/ No Visible Residue
2=Some Bleeding, AND Little/ No Visible Residue
3=Little or No Bleeding AND Visible Residue
4=Visible AND/OR Visible Residue

Example #1 Ranking - Most Washable

BLOOD RECIPE: LO-COST
FIBER CONTENT: SILK
FABRIC STYLE: DUPIONI
TEST RATING: #1

Little or No Bleeding
Little or No Residue

ORIGINAL TREATED WASHED
Example #2 Ranking - Faint Bleeding, Little or No Residue

Blood Recipe: Cherry Red
Fiber Content: Cotton
Fabric Style: Denim
Test Rating: #2

Example #3 Ranking - Some Bleeding or Residue After Washing

Blood Recipe: Corn Syrup
Fiber Content: Linen
Fabric Style: Straight Weave
Test Rating: #3

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Example #4 Ranking - Visible Bleeding and/or Residue

And the winner is.... Best Recipe Washability

Realistic Blood
Lo-Cost Blood
Cherry Red Blood
Cornstarch Blood

Each recipe 17-18 number 1 ranks
Wash from widest range of fabrics
Each recipe did stain some individual fabrics
Worst Recipe Washability

- Pudding Blood
- MB2 Blood

11 and 9 number 4 ranks respectively
Both washed successfully from polyester fibers

Best Overall Fiber Performance...the Synthetics

- Acetate
- Polyester
- Acrylic

Synthetics resisted more recipes than any other fiber
Wider flexibility to allow for specific FX or aesthetics
Fabric surface played a key factor- velour performed poorly
Worst Overall Fiber Performance

Cotton
Silk

Weave and surface style were key factors

Blood Aesthetics

Color and Viscosity
**Recipe Name: Cornstarch Blood**

**EDIBLE? YES**

**QUANTITY THIS RECIPE:** 6 Cups (approx)

**INITIAL COST:** $10.00

**BATCH COST ESTIMATE:** $0.25 per cup

**INGREDIENTS**
- 6 C water
- 1/3 C cornstarch
- 2 tsp "No Taste Red" Wilton Icing Dye - gel
- Several drops "Royal Blue" and "Green" Wilton Icing Dye

**MIXING METHOD**
- Stove top: Heat Water and Cornstarch on high just until boiling
  - Stir frequently and scrape bottom with a wooden spoon.
  - Remove from heat to cool on a counter top
  - Stir occasionally as mixture cools
- Add Color, stir well
- Transfer to a bowl, cover with clear plastic wrap
- Microwave: Heat Water and Cornstarch for 3 minutes, stir
  - Heat for 1-3 minute intervals until boiling (turns translucent)
  - Follow above recipe for cooling and mixing

**ADJUSTMENTS**
- IF USING NATURAL FIBER costumes, thin with detergent (NON-EDIBLE)

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**Recipe Name: Chocolate Blood**

**EDIBLE? YES**

**QUANTITY THIS RECIPE:** ¼ to 1 Cup

**INITIAL COST:** $16.00

**BATCH COST ESTIMATE:** $0.92 per Cup

**INGREDIENTS**
- 1/3 C warm water
- 1 TBS cocoa powder
- 3-4 TBS corn syrup
- ½-1 tsp red liquid food coloring
- 2 drops yellow or green liquid food coloring

**MIXING METHOD**
- Mix the cocoa powder into warm water before adding other ingredients.
- Blend well; wait for liquid to settle a bit.
- Skim bubbles off the top
- Pour mixture into another container.
**RECIPE NAME: CORN SYRUP BLOOD**

EDIBLE? NO  
QUANTITY THIS RECIPE: 3 Cups  
INITIAL COST: $10.00  
BATCH COST ESTIMATE: $1.60 per cup

**INGREDIENTS**
- 1 C Light Corn Syrup  
- 1 TBS red food coloring  
- 1 TBS liquid dish detergent- light color, no dye, unscented  
- 1 TBS water  
- Several drops blue and green food coloring  
- 1 can of Condensed Milk (14 oz)

**MIXING METHOD**
Stir all ingredients together.

**ADJUSTMENTS**
- Remove detergent to create an edible version.  
- Warning: Smells very bad!

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**RECIPE NAME: BUCKETS O' BLOOD**

EDIBLE? YES  
QUANTITY THIS RECIPE: 8 Cups or 2 Quarts  
INITIAL COST: $6.00  
BATCH COST ESTIMATE: $0.44 per Cup

**INGREDIENTS**
- 1 Package Red Jello (0.3 oz size)  
- 2 OZ red food coloring  
- 1 TBS green food coloring  
- 4 Cups boiling water  
- 4 Cups cold water

**MIXING METHOD**
- Put Jello in a large pot or container  
- Add boiling water to Jello, stirring until dissolved  
- Add cold water and food coloring  
- Refrigerate until needed

**ADJUSTMENTS**
- This blood has a watery consistency-good pouring/soaking qualities
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Blood Recipes

RECIPE NAME: LO-COST BLOOD*

EDIBLE? NO
QUANTITY THIS RECIPE: 1 Cup
INITIAL COST $20.00
BATCH COST ESTIMATE $ 0.69 per Cup

INGREDIENTS
1 C Budget liquid laundry detergent (color ok)
1 TBS red food coloring
2 drops green food coloring
2 drops blue food coloring OR as needed

MIXING METHOD
Stir food coloring into detergent
Adjust colors for desired effect

ADJUSTMENTS
* Note: the title Lo-Cost Blood is taken from folk recipes available on the web.
After testing, we suspect the name represents a low initial investment for large quantity
if you add larger quantities coloring to budget big box store detergent. Our tests
revealed other recipes with similar or less cost amortized over large batches.

RECIPE NAME: CARDIFF RED BLOOD

EDIBLE? YES *
QUANTITY THIS RECIPE: 1 Cup
INITIAL COST $12.00
BATCH COST ESTIMATE $ 0.40 per Cup **

INGREDIENTS
1 C water
1 TBS Cornstarch
Red Non-Toxic powder paint (Tempera) as desired
Coffee concentrate/ liquid coffee/ or brown powder paint

MIXING METHOD
Add cornstarch to water
Bring to a boil, stirring
Remove from heat
Stir until completely cool, texture will be goopy
Stir in paints and/or coffee to reach desired color
Store in a bottle until needed

ADJUSTMENTS
* Edibility depends entirely on paint used
** Pricing based on approx 1/4 oz of paint powder, or 3 tsp more or less

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**RECIPE NAME: CHERRY RED BLOOD**

EDIBLE? YES
QUANTITY THIS RECIPE: 1/2 Cup
INITIAL COST: $3.00
BATCH COST ESTIMATE: $2.00 per Cup

INGREDIENTS
1 C water
1 T flour
1 pkg black cherry Kool Aid

MIXING METHOD
Mix water and flour
Bring to a boil and let boil for 3 minutes
Simmer on low for 15 minutes
Remove from heat, stand for 5 minutes to cool slightly
Add Black Cherry Kool Aid, stirring to mix evenly

**RECIPE NAME: MB2 BLOOD**

EDIBLE? YES
QUANTITY THIS RECIPE: 1/2 Cup
INITIAL COST: $10.00
BATCH COST ESTIMATE: $1.10 per Cup

INGREDIENTS
1 C water
2 tsp flour
1 TBS red food coloring
1/8 t green food coloring

MIXING METHOD
Mix flour into water.
Bring to a boil. Simmer for 30 minutes, stirring frequently
Cool to room temperature
Add food coloring
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**RECIPE NAME: PUDDING BLOOD**

- **EDIBLE?** NO
- **QUANTITY THIS RECIPE:** 6 Cups
- **INITIAL COST:** $10.00
- **BATCH COST ESTIMATE:** $0.28 per Cup

**INGREDIENTS**
- 6 Cups Water
- 1 pkg Chocolate Instant Pudding
- 1/4 C liquid dish soap
- 1 T red food coloring

**MIXING METHOD**
Mix well to ensure the pudding is dissolved.

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**RECIPE NAME: REALISTIC RECIPE**

- **EDIBLE?** YES
- **QUANTITY THIS RECIPE:** 1 Cup
- **INITIAL COST:** $10.00
- **BATCH COST ESTIMATE:** $2.40 per Cup

**INGREDIENTS**
- 2/3 Cup Corn Syrup
- 1/3 Cup Warm Water
- 5 Tbsp Corn Starch
- 4 tsp red food coloring
- 1 Tbsp Powdered Cocoa
- 2 drops of green or yellow food coloring

**MIXING METHOD**
Mix the corn starch with warm water in a mixing bowl. Stir in corn syrup. Add food coloring slowly, stirring to blend. Check for color as desired

**ADJUSTMENTS**
This recipe is very shiny from the combination of corn syrup and corn starch.
RECIPE NAME: Kool Aid/Jello Blood

EDIBLE? YES
QUANTITY THIS RECIPE: 1 Cup
INITIAL COST $7.00
BATCH COST ESTIMATE $1.50 per Cup
INGREDIENTS
1 Cup Water
¼ tsp sugar free black cherry Jello
1 Tbsp flour
1 packet black cherry Kool Aid (do not add sugar)
Red food coloring to desired color

MIXING METHOD
Heat the water in a small pot.
Add the flour, stirring well.
Add the Jello and Kool Aid, stirring to dissolve.
Add red food coloring to adjust color as desired.
Chill, store in refrigerator until needed.